TINBRIDGE HILL OVERLOOK

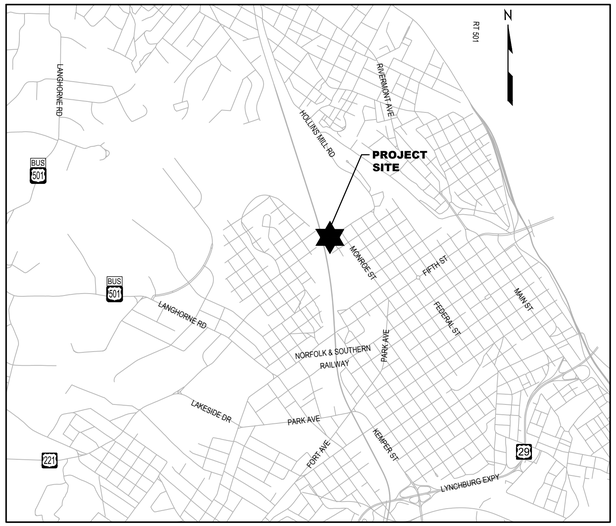
CITY OF LYNCHBURG

LYNCHBURG, VIRGINIA

JUNE 2, 2022

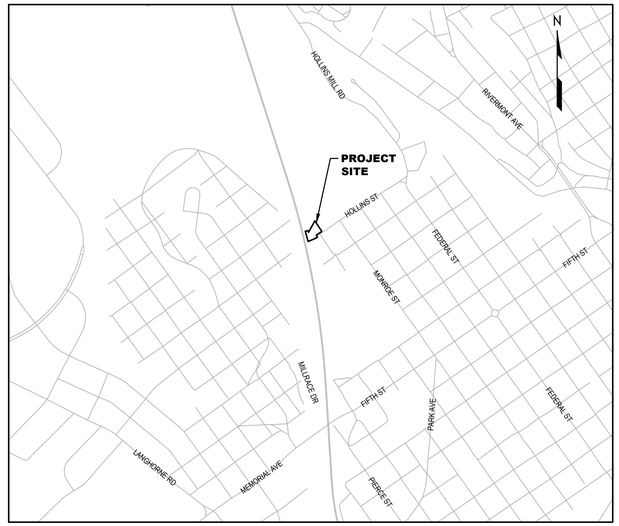
GENERAL NOTES:

1. CONTACT THE CITY ENVIRONMENTAL REVIEWER, THE CITY CONSTRUCTION COORDINATOR, AND MISS UTILITY 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.
2. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CITY OF LYNCHBURG MANUAL OF SPECIFICATIONS AND STANDARD DETAILS, THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER STATE, FEDERAL, OR LOCAL REGULATIONS APPLICABLE. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS OR PLANS, THE MOST STRINGENT SHALL GOVERN.
3. A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER OR THEIR AGENT, THE CERTIFIED RESPONSIBLE LAND DISTURBER AND THE DESIGNER WILL BE REQUIRED PRIOR TO THE ISSUANCE OF THE LAND-DISTURBING PERMIT. THE RESPONSIBLE LAND DISTURBER SHOULD BE PREPARED TO PROVIDE HIS CERTIFICATION NUMBER AT THIS MEETING.THE FOLLOWING MUST BE COMPLETE PRIOR TO SCHEDULING THE PRE-CONSTRUCTION CONFERENCE:
   - A. THE LIMITS OF CLEARING AND GRADING SHOULD BE CLEARLY MARKED.
   - B. A LAND DISTURBANCE BOND MUST BE SUBMITTED.
   - C. THE STORMWATER MAINTENANCE AGREEMENT MUST BE RECORDED AND SUBMITTED IF APPLICABLE TO THE SITE.
   - D. IF DEVELOPMENT IS PROPOSING THE PURCHASE OF OFF SITE CREDITS TO MEET STORMWATER QUALITY REQUIREMENTS, A SIGNED AFFIDAVIT IS REQUIRED.
4. AS-BUILT SURVEY WILL BE REQUIRED OF ALL STORMWATER FEATURES ON SITE UPON COMPLETION OF PROJECT, AND PRIOR TO BOND RELEASE.
5. NO SITE WORK, LOGGING, GRUBBING, OR GRADING IS PERMITTED PRIOR TO ISSUANCE OF A LAND DISTURBING PERMIT.
6. ALL PUBLIC INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF LYNCHBURG MANUAL OF SPECIFICATION AND DETAILS.
7. BEFORE A CERTIFICATE OF OCCUPANCY CAN BE ISSUED:
   - a) ALL E&SC AND SWM MEASURES MUST BE DE-WATERED.
   - b) ALL PERMANENT E&SC AND SWM MEASURES MUST BE CONSTRUCTED AND FUNCTIONING.
8. A SOIL TEST IS REQUIRED, PRIOR TO THE FINAL SITE STABILIZATION, TO DETERMINE FERTILIZER APPLICATION RATES FOR ESTABLISHMENT OF GRASS ON THE SITE. THE VIRGINIA COOPERATIVE EXTENSION, OR GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES, SHALL BE CONTACTED TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION.
9. SERVICE CONNECTIONS SHALL NOT BE UTILIZED FOR DEMOLITION, GRADING, CONSTRUCTION/RENOVATION, AND/OR LANDSCAPING PURPOSES, UNLESS THE APPROPRIATE RPZ'S/RPDA'S HAVE BEEN INSTALLED AND PASSING TESTS HAVE BEEN SUBMITTED TO THE DEPT. OF WATER RESOURCES. THIS INCLUDES TEMPORARY AS WELL AS PERMANENT CONNECTIONS.
10. IF ANY BACKFLOW PREVENTION ASSEMBLIES ARE FOUND DURING DEMOLITION OR WHILE OTHER WORK IS BEING PERFORMED FOR THIS PROJECT, THEY SHALL NOT BE REMOVED, RELOCATED, OR REPLACED WITHOUT ADVANCE AUTHORIZATION FROM THE DEPT. OF WATER RESOURCES.
11. IF DURING DEMOLITION OR CONSTRUCTION, ANY DISCREPANCIES ARE NOTED WITH REGARD TO ANY PUBLIC WATER SERVICE CONNECTION, THE DEPT. OF WATER RESOURCES SHALL BE NOTIFIED. THIS INCLUDES, BUT IS NOT LIMITED TO; CONNECTIONS WHICH NEED TO BE ADDED, ABANDONED, CHANGED, OR RELOCATED.



VICINITY MAP

SCALE: 1" = 2000'



SITE & PROPERTY MAP

SCALE: 1" = 1000'

LIST OF DRAWINGS

SHEET NUMBER	SHEET TITLE
G-001	COVER SHEET
C-101	EXISTING CONDITIONS AND DEMOLITION PLAN
C-102	EROSION AND SEDIMENT CONTROL PLAN
C-103	SITE PLAN
C-104	GRADING AND STORMWATER
C-301	EROSION AND SEDIMENT CONTROL DETAILS
C-302	CIVIL DETAILS
C-401	EROSION AND SEDIMENT CONTROL NARRATIVE
C-402	POST-DRAINAGE AREA MAP
C-403	STORMWATER MANAGEMENT CALCULATIONS
L-101	SITE PLAN LAYOUT
L-102	SITE SECTIONS AND ARCHITECTURAL ELEVATIONS
L-103	SITE DIMENSION PLAN
L-104	DETAILS
L-105	DETAILS
L-106	LANDSCAPE PLAN
L-107	LANDSCAPE DETAILS
S-001	STRUCTURAL GENERAL NOTES & SPECIAL INSPECTIONS
S-002	SPECIAL INSPECTIONS CONT & ABBREVIATIONS
S-101	OVERLOOK DECK FOUNDATION PLAN & FRAMING PLAN
S-301	STRUCTURAL SECTIONS
S-401	ENLARGED PLAN - PERGOLA FRAMING PLAN
S-501	TYPICAL STRUCTURAL DETAILS

STORMWATER MANAGEMENT NOTES:

1. WATER QUALITY IMPACTS - WORK INCLUDED IN THIS PROJECT WILL CHANGE EXISTING LAND COVER AS SUMMARIZED ON SHEETS C-403 AND C-404
2. STREAM CHANNEL PROTECTION - ALL GRADES AND SURFACES WILL BE COMPLETED PER PLANS.
3. FLOODING IMPACTS - THE WORK WILL NOT INCREASE THE 10-YEAR PEAK RUNOFF RATE.
4. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DISTURBED AREA. DISTURBED AREAS MUST BE STABILIZED IMMEDIATELY FOLLOWING THE COMPLETION OF WORK IN THAT AREA.

ABBREVIATIONS

ABAN	ABANDON	G	GROUND	R	RADIUS
AC	ACRES	GAL	GALLON	RC	REINFORCED CONCRETE
ADDL	ADDITIONAL	GPD	GALLONS PER DAY	RCP	REINFORCED CONCRETE PIPE
APPROX	APPROXIMATE	GPH	GALLONS PER HOUR		
APPD	APPROVED	GPM	GALLONS PER MINUTE	REQD	REQUIRED
AVG	AVERAGE	GTV	GATE VALVE	RT	RIGHT
		GVL	GRAVEL		
BLDG	BUILDING			S	SLOPE
BLK	BLOCK	HB	HOSE BIB	S	SOUTH
BM	BENCHMARK	HORIZ	HORIZONTAL	SAN	SANITARY
BOT	BOTTOM	H.P.	HIGH POINT	SDL	SIGHT DISTANCE LEFT
		HW	HEAD WALL	SDR	SIGHT DISTANCE RIGHT
CB	CATCH BASIN			STDI	STORM DRAIN INLET
CFM	CUBIC FEET PER MINUTE	IN	INCH	SECT	SECTION
℄, CL	CENTERLINE			SF	SQUARE FEET
CND	CONDUIT	JB	JUNCTION BOX	SHT	SHEET
CO	CLEANOUT	JT	JOINT	SIM	SIMILAR
CONC	CONCRETE			STMH	STORMWATER MANHOLE
COORD	COORDINATE	LB	POUND	SP	SPACE OR SPACES
CTR	CENTER	LB/CU FT	POUNDS PER CUBIC FOOT	SPA.	SPACING
CTR'D	CENTERED	LF	LINEAR FEET	SPEC.A.	SPECS/SPECIFICATIONS
CU	CUBIC	LP	LIGHT POLE	SQ	SQUARE
CU FT	CUBIC FOOT	L.P.	LOW POINT	SQ FT	SQUARE FOOT, FEET
CU IN	CUBIC INCH			SQ IN	SQUARE INCH
CU YD	CUBIC YARD	MATL	MATERIAL	STA	STATION
		MAX	MAXIMUM	STRL	STRUCTURAL
DI	DROP INLET	MGD	MILLION GALLONS PER DAY	SW	SIDEWALK
DI	DUCTILE IRON	MH	MANHOLE		
DIA	DIAMETER			T/	TOP OF
DIP	DUCTILE IRON PIPE	N	NORTH	TAN	TANGENT
DS	DOWN SPOUT	NIC	NOT IN CONTRACT	TYP	TYPICAL
DWG	DRAWING	NTS	NOT TO SCALE		
				U ON	UNLESS OTHERWISE NOTED
E	EAST	OA	OVERALL	UG	UNDERGROUND
EA	EACH	OD	OUTSIDE DIAMETER		
ENGR	ENGINEER			W	WEST
EOG	EDGE OF GUTTER	PC	POINT OF CURVE	WTR	WATER
EP	EDGE OF PAVEMENT	PI	POINT OF INTERSECTION		
EP	EDGE OF PAVING	PI STA	POINT OF INTERSECTION		
EXP	EXPANSION	STATION			
EXP	EXPOSED	PL	PROPERTY LINE		
EXIST	EXISTING	PP	POWER POLE		
		PT	POINT OF TANGENCY		
°F	DEGREE FAHRENHEIT	PVI	POINT OF VERTICAL		
FG	FINISHED GRADE	INTERSECTION			
FPS	FEET PER SECOND	PVMT	PAVEMENT		
FT	FOOT OR FEET				

ENGINEER INFORMATION:

ENGINEER: WILEY|WILSON
127 NATIONWIDE DRIVE
LYNCHBURG, VA 24502

CONTACT: DANIEL T. SUTTON, PE
PHONE: (434) 947-1631
EMAIL: dsutton@wileywilson.com

OWNER INFORMATION:

OWNER: CITY OF LYNCHBURG

CONTACT: CHRIS HIGGINS
EMAIL: chris.higgins@lynchburgva.gov

PROJECT NAME & LOCATION:

CITY OF LYNCHBURG - TINBRIDGE HILL OVERLOOK
2 TAYLOR STREET
LYNCHBURG, VIRGINIA 24504

"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 NUMBER:

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 PART OF THIS PLAN."

SIGNATURE: TITLE:

PRINTED NAME: DATE:

CITY ENGINEER: DATE:

UTILITIES ENGINEER: DATE:

ESC PLAN APPROVAL: DATE:

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COMMONWEALTH OF VIRGINIA
DANIEL T. SUTTON
Lic. No. 45799
6/2/2022
PROFESSIONAL ENGINEER

TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION
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COMM NO: 221156.00
DATE: 6/2/2022
DRAWN: DGB DESIGN: DTS
CHECK: GKT

SHEET TITLE

COVER SHEET

SHT. NO. G-001
REV. NO. 0

6/7/2022 8:53 AM
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GENERAL NOTES:

1. THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, BRIAN S HARVEY, LS FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON OCTOBER 7, 2021 & MARCH 18, 2022 AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
2. SURVEY CONDUCTED BY WILEY|WILSON,OCTOBER 2021 & MARCH 2022. VERTICAL CONTROL: NAVD 88; HORIZONTAL CONTROL: NAD 83 VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S. SURVEY FOOT.
3. ALL EXISTING UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THESE PLANS ARE APPROXIMATE AND MAY NOT REPRESENT ALL UNDERGROUND UTILITIES OR SERVICE LINES. SOURCE OF EXISTING UTILITY MAPPING: UTILITY LOCATIONS ARE BASED ON QUALITY LEVEL "B" AS DEFINED BY ASCE STANDARD 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATION, DEPTH, SIZE, AND TYPE OF UTILITIES SHOWN AND NOTIFYING ENGINEER OF DISCREPANCIES. CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE TO PROPERTY, UTILITIES, OR PHYSICAL IMPROVEMENTS.
5. MISS UTILITY WAS NOT CONTACTED PRIOR TO TOPOGRAPHIC SURVEY.
6. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-552-7001 PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION IN ACCORDANCE WITH THE VIRGINIA UNDERGROUND UTILITY DAMAGE PREVENTION ACT.
7. PROPERTY LINE INFORMATION IS BASED ON CORRELATION OF FIELD MEASUREMENTS WITH INFORMATION FOUND IN VARIOUS PLATS AND DEEDS OF RECORD. NO BOUNDARY SURVEY WAS PERFORMED.
8. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS NOT INTENDED TO SHOW ALL EASEMENTS THAT MAY AFFECT THE PROPERTY.
9. ALL PROPERTY PINS DISTURBED BY CONTRACTOR ACTIVITIES SHALL BE REPLACED BY A VIRGINIA LICENSED LAND SURVEYOR.
10. THE EXISTENCE OF HAZARDOUS WASTE, VEGETATED WETLANDS, OR TIDAL WETLANDS WAS NEITHER INVESTIGATED NOR CONFIRMED DURING THE PERFORMANCE OF THIS SURVEY.

EXISTING SYMBOLS

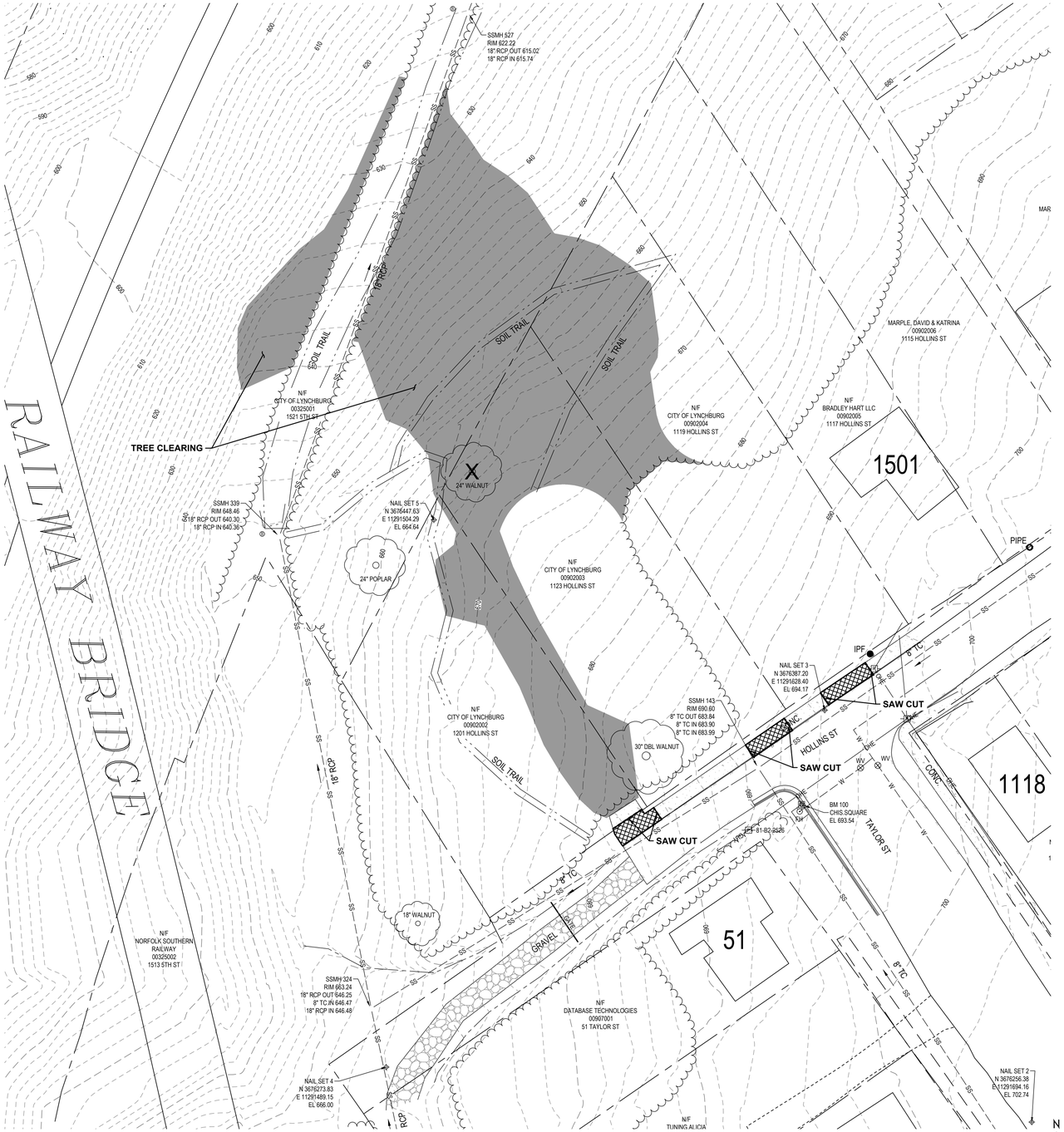
- BENCHMARK
- CONTROL POINT
- CONTROL POINT - NAIL SET
- IP(F) IRON PIN FOUND
- PIPE(F) PIPE FOUND
- SANITARY MANHOLE
- POWER POLE
- FH FIRE HYDRANT
- WV WATER VALVE
- BOLLARD
- TREE

EXISTING LEGEND

- EDGE OF PAVEMENT
- FENCELINE
- TREELINE
- MAJOR CONTOURS
- MINOR CONTOURS
- OHE OVERHEAD ELECTRIC
- GUY GUY WIRE
- SS SANITARY LINE
- W WATER LINE
- DITCH
- PROPERTY LINE
- CONCRETE
- GRAVEL

EXISTING UTILITY STRUCTURES	
STRUCTURE ID	STRUCTURE DETAILS
SSMH 143	RIM = 690.60 8" TC INV IN = 683.90 FROM SSMH 371 8" TC INV IN = 683.99 FROM SSMH 370 8" TC INV OUT = 683.84 TO SSMH 324
SSMH 324	RIM = 663.24 8" TC INV IN = 646.47 FROM SSMH 143 18" RCP INV IN = 646.48 FROM 18" RCP INV OUT = 646.25 TO SSMH 339
SSMH 339	RIM = 648.46 18" RCP INV IN = 640.36 FROM SSMH 324 18" RCP INV OUT = 640.30 TO SSMH 527
SSMH 370	RIM = 701.83 8" TC INV IN = 693.23 FROM 8" TC INV OUT = 693.03 TO SSMH 143
SSMH 371	RIM = 703.50 8" RCP INV IN = 695.10 FROM 8" TC INV OUT = 695.05 TO SSMH 143
SSMH 527	RIM = 622.22 18" RCP INV IN = 615.74 FROM SSMH 339 18" RCP INV OUT = 615.02 TO

CONTROL POINTS				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
2	702.74	3676256.38	11291694.16	CPNS
3	694.17	3676387.20	11291628.40	CPNS
4	666.00	3676273.83	11291489.15	CPNS
5	664.64	3676447.63	11291504.29	CPNS



DEMOLITION LEGEND

- X REMOVE TREE
- REMOVE SIDEWALK
- TREE CLEARING
- REMOVE CURB

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.

0 10' 20' 40'

SCALE: 1" = 20'

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SHEET TITLE

EXISTING CONDITIONS AND DEMOLITION PLAN

SHT. NO.	REV. NO.
C-101	0

6/7/2022 8:53 AM
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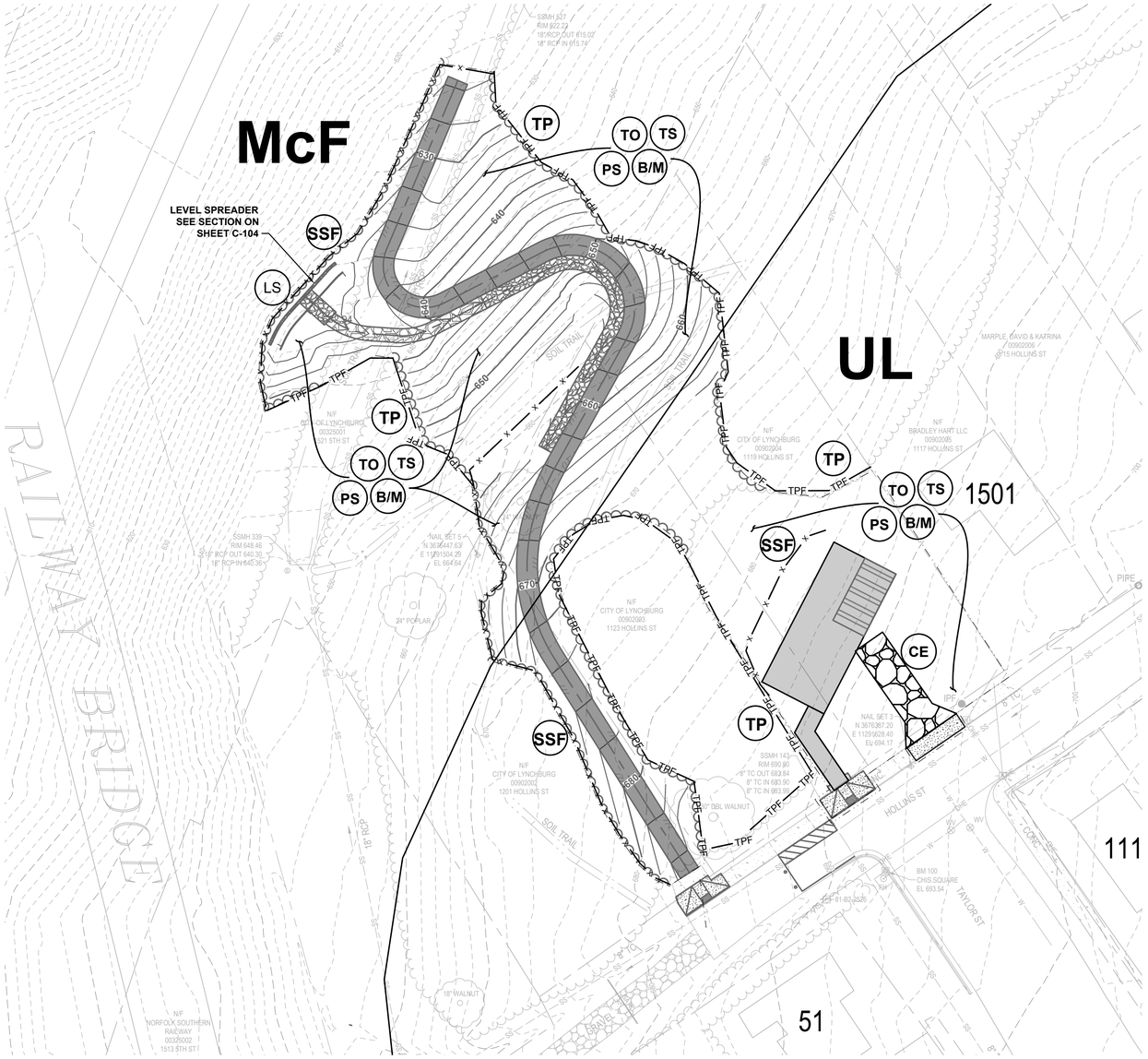
NOTE:
1. LYNCHBURG'S ENVIRONMENTAL INSPECTOR MUST BE CONSULTED PRIOR TO INSTALLING THE PROJECT'S STORMWATER MANAGER FACILITY.
2. AS-BUILT SURVEYS OF THE PROJECT'S STORMWATER MANAGEMENT FACILITY MUST BE CONDUCTED AS THE FACILITY IS BEING INSTALLED.



MAP UNIT LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
McF (CRITICAL AREA)	MANTEO CHANNERY LOAM, 25 TO 60 PERCENT SLOPES
UL	URBAN LAND

EROSION AND SEDIMENT CONTROL LEGEND:

3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
3.05	SUPER SILT FENCE	SSF	X—X—X
3.21	LEVEL SPREADER	LS	
3.30	TOPSOILING	TO	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.36	SOIL STABILIZATION BLANKETS & MATTING	B/M	
3.38	TREE PRESERVATION AND PROTECTION	TP	

LIMITS OF DISTURBANCE

—TPF—TPF—TPF— TREE PRESERVATION AND PROTECTION

N

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SHEET TITLE

EROSION AND SEDIMENT CONTROL PLAN

SHT. NO.	REV. NO.
C-102	0

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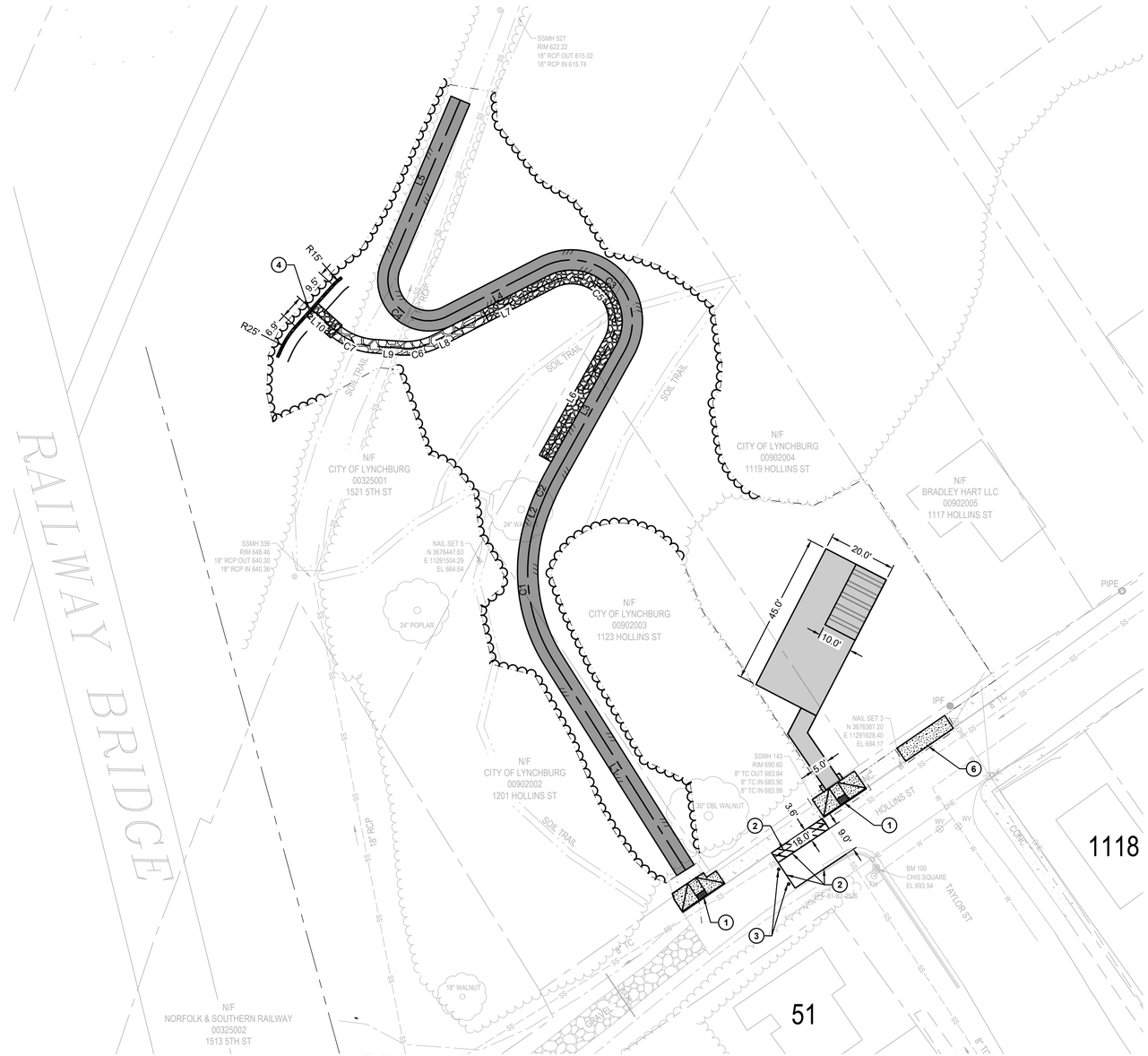

KEY NOTES:

1. TYPE 2 - HANDICAP RAMP
2. 4" WHITE STRIPING
3. LAYDOWN BOLLARD
4. LEVEL SPREADER
5. BIORETENTION BASIN
6. REDO SIDEWALK

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD	CHORD BEARING
C1	52.0059	49.000	44.476	42.96	N6°13'13"W
C2	9.3235	77.000	12.530	12.52	N24°26'40"E
C3	146.4023	18.000	45.994	34.46	N44°05'42"W
C4	140.2045	12.000	29.364	22.57	N47°11'38"W

DITCH CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD	CHORD BEARING
C5	146.4023	13.000	33.218	24.89	N44°05'42"W
C6	28.8388	15.000	7.550	7.47	S79°33'04"W
C7	38.1012	20.000	13.300	13.06	N66°58'44"W

PATH LINE TABLE		
LINE	LENGTH	BEARING
L1	73.026	N32°13'24"W
L2	0.675	N19°46'58"E
L3	41.641	N29°06'22"E
L4	31.780	S62°42'14"W
L5	52.448	N22°54'30"E

DITCH LINE TABLE		
LINE	LENGTH	BEARING
L6	39.054	N29°06'22"E
L7	31.780	S62°42'14"W
L8	8.626	S65°07'54"W
L9	8.689	N86°01'46"W
L10	8.311	N47°55'42"W

N

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SHEET TITLE

SITE PLAN

SHT. NO. C-103
REV. NO. 0

6/7/2022 8:54 AM
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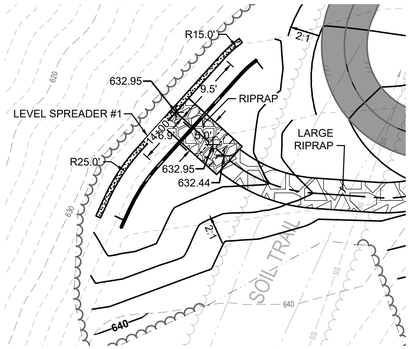
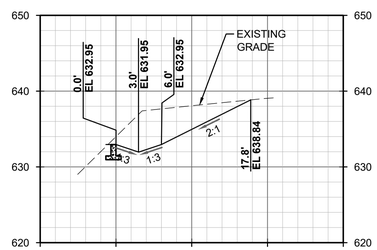
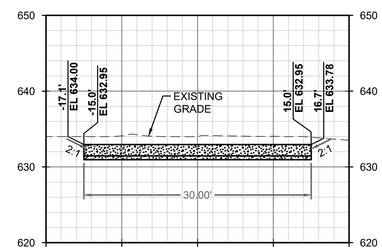


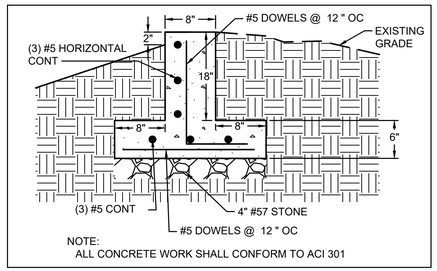
BLOW-UP OF
LEVEL SPREADER #1
SCALE: 1" = 10'



SECTION A-A
SCALE: 1" = 10'



SECTION B-B
SCALE: 1" = 10'

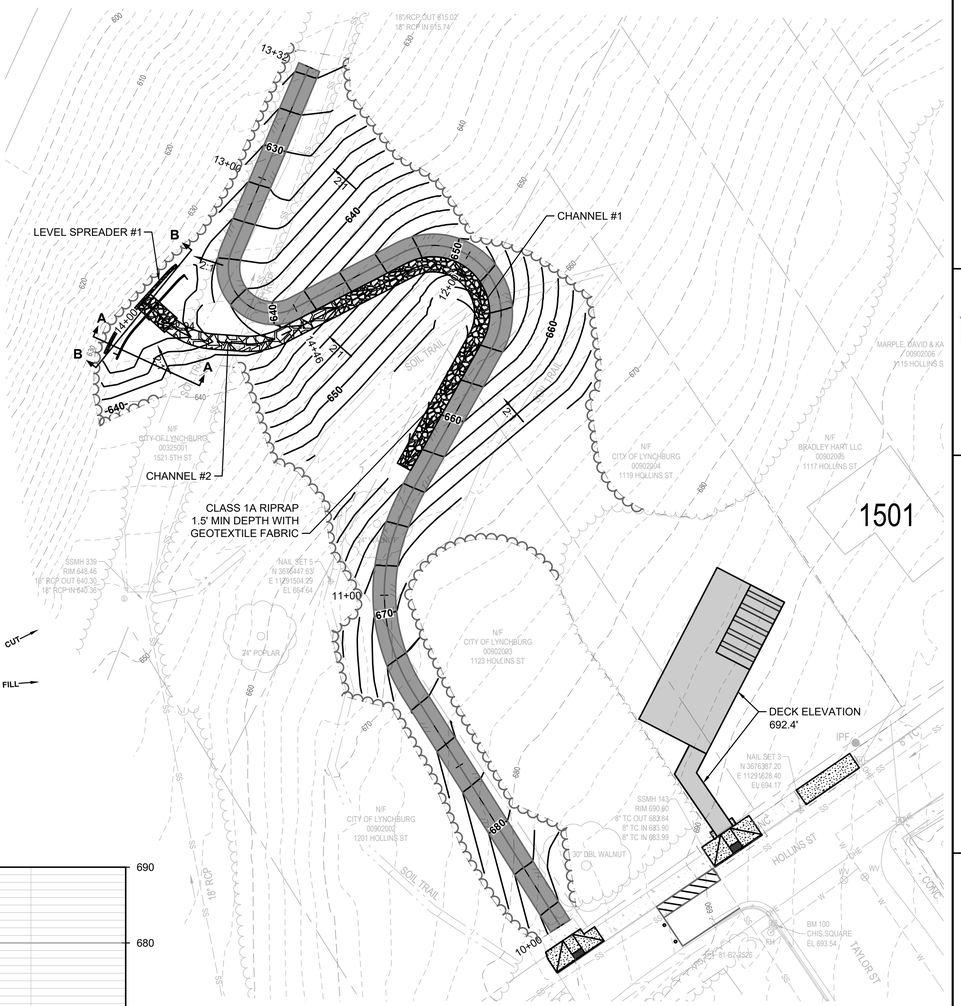


NOTE:
ALL CONCRETE WORK SHALL CONFORM TO ACI 301

CONCRETE LEVEL SPREADER
NOT TO SCALE

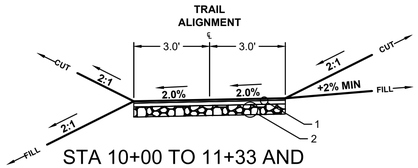
RIPRAP TABLE

DESCRIPTION	RIPRAP CLASS	RIPRAP MIN DEPTH	CHANNEL TYPE	CHANNEL MIN DEPTH	CHANNEL SIDE SLOPES	STATIONS
CHANNEL #1	1A	1.5'	V-DITCH	1'	2:1	11+33 TO 12+40
CHANNEL #2	1	2.0'	V-DITCH	1'	2:1	14+00 TO 14+46

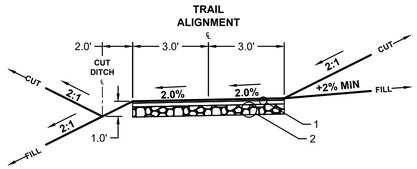


1501

NOTE:
1. 2" ASPHALT
2. 6" VDOT STD. 21A



STA 10+00 TO 11+33 AND
STA 12+62 TO END
TRAIL TYPICAL SECTION
SCALE: N.T.S.



STA 11+33 TO 12+50
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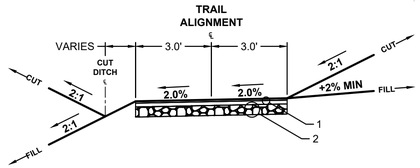

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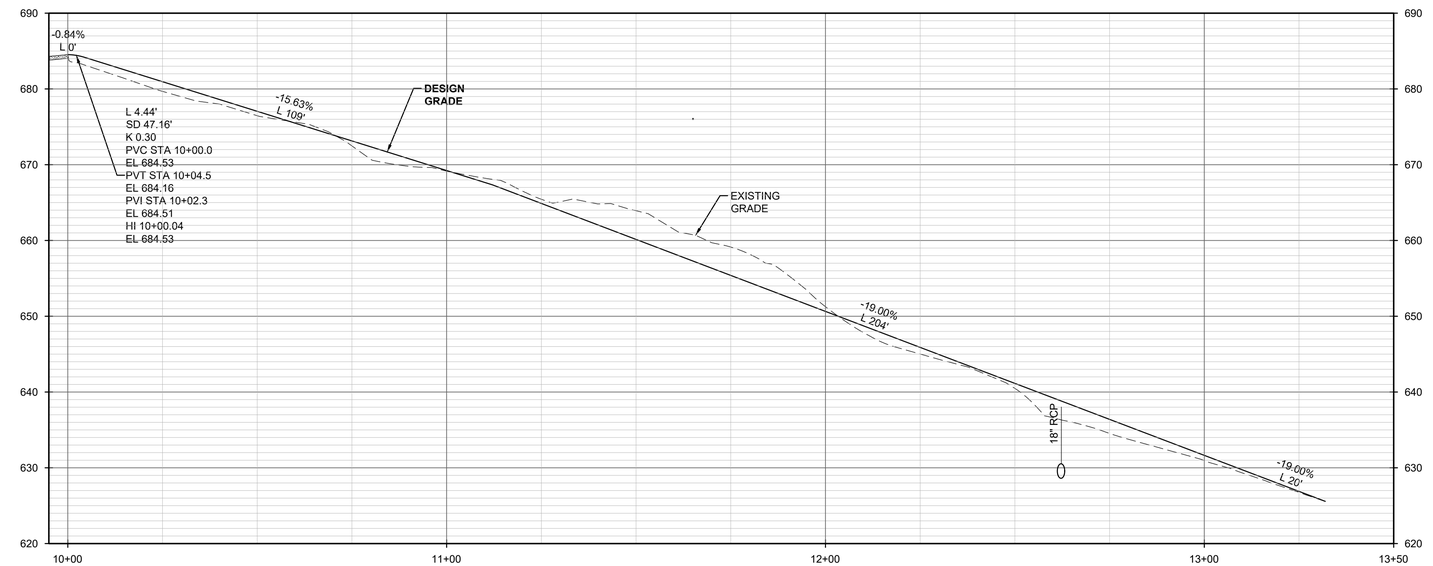

TRAIL ALIGNMENT PROFILE
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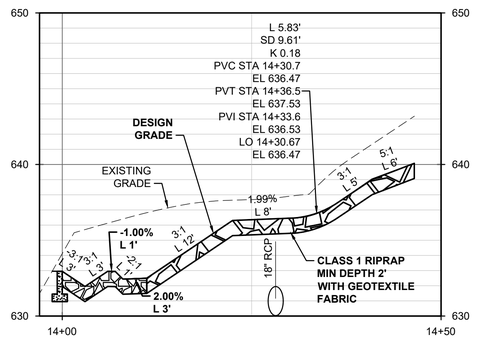

DITCH PROFILE
SCALE: 5'V:10'H

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.
VERT: 1" = 5'
0 5' 10'
0 10' 20'
HORIZ: 1" = 10'

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.
VERT: 1" = 10'
0 10' 20'
0 20' 40'
HORIZ: 1" = 20'

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COMMONWEALTH OF VIRGINIA
DANIEL T. SUTTON
Lic. No. 45799
6/2/2022
PROFESSIONAL ENGINEER

TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION
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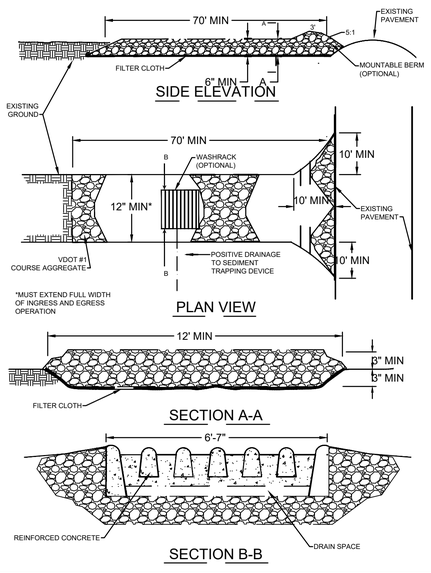
COMM NO:	221156.00
DATE:	6/2/2022
DRAWN: DGB	DESIGN: DTS
CHECK: GKT	

SHEET TITLE
GRADING AND
STORMWATER

SHT. NO.	REV. NO.
C-104	0

STONE CONSTRUCTION ENTRANCE

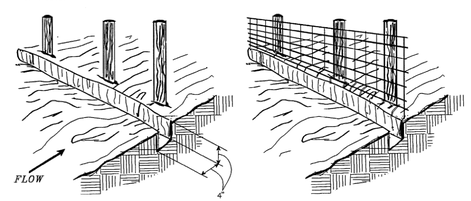


SOURCE: ADAPTED from 1983 Maryland Standards for Soil erosion and Sediment Control, and Va. DSWC

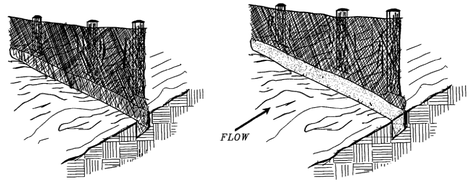
STONE CONSTRUCTION ENTRANCE
NOT TO SCALE PLATE 3.02-1 (CE)

CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)

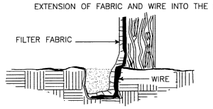
1. SET POSTS AND EXCAVATE A 4"X4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.
2. STAPLE WIRE FENCING TO THE POSTS.



3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

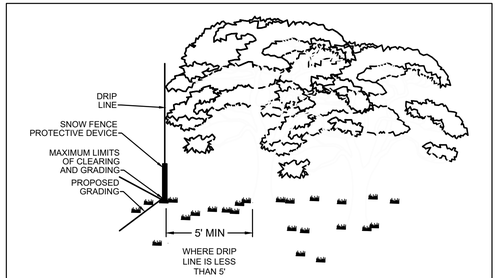


EXTENSION OF FABRIC AND WIRE INTO THE TRENCH.



Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant Plate 3.05-1

SUPER SILT FENCE
NOT TO SCALE PLATE 3.05-1 (SSF)



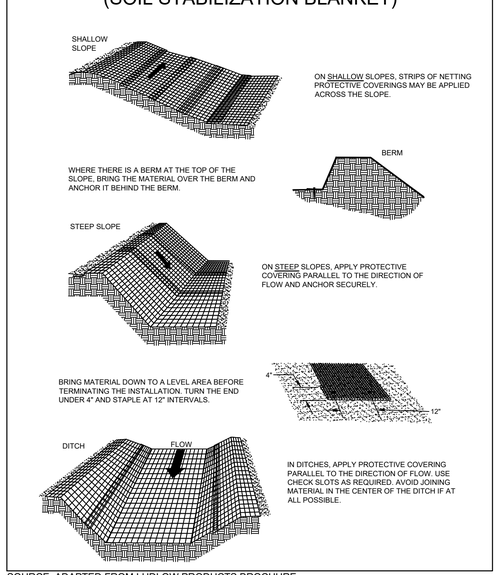
CONSTRUCTION OPERATIONS RELATIVE TO THE LOCATION OF PROTECTED TREES

Source: Public Facilities Manual, Vol. III, Fairfax Co., Va., 1976

TREE PRESERVATION AND PROTECTION
NOT TO SCALE PLATE 3.38-1 (TP)

SNOW FENCE - STANDARD 40-INCH HIGH SNOW FENCE SHALL BE PLACED AT THE LIMITS OF CLEARING ON STANDARD STEEL POST SET 6 FEET APART.

TYPICAL ORIENTATION OF TREATMENT - 1 (SOIL STABILIZATION BLANKET)



SOURCE: ADAPTED FROM LUDLOW PRODUCTS BROCHURE

SOIL STABILIZATION BLANKETS & MATTING
NOT TO SCALE PLATE 3.36-1 (B/M)

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DANIEL T. SUTTON
Lic. No. 45799
6/2/2022
PROFESSIONAL ENGINEER

TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION
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COMM NO:	221156.00
DATE:	6/2/2022
DRAWN: DGB	DESIGN: DTS
CHECK: GKT	

SHEET TITLE

EROSION AND SEDIMENT CONTROL DETAILS

SHT. NO.	REV. NO.
C-301	0

6/7/2022 9:35 PM
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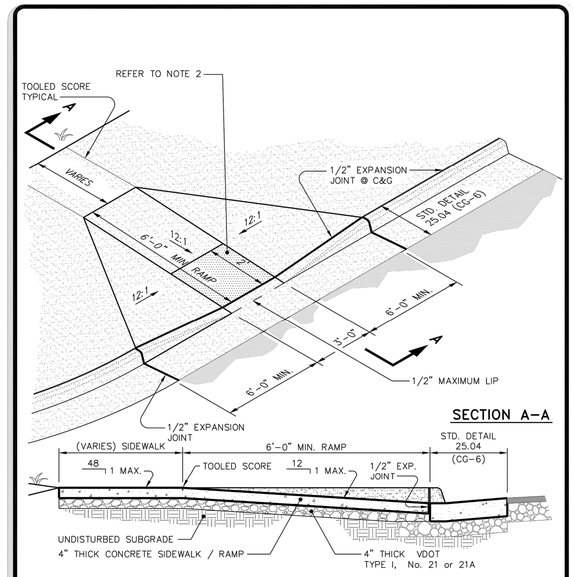
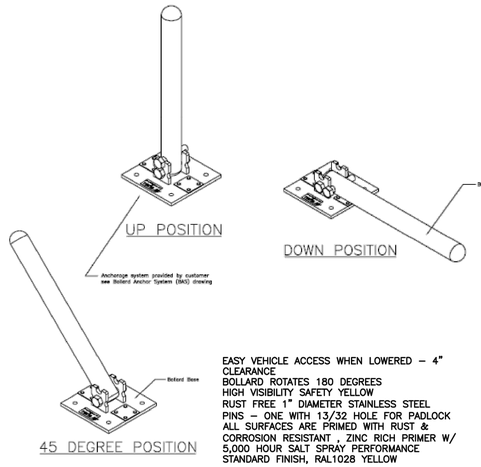


THE CITY OF LYNCHBURG

TYPE 2 – HANDICAP RAMP for INTERSECTION without GRASS STRIP	SCALE: NOT TO SCALE	DETAIL #: 25.15
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY	REVISION DATE: 4-2020	SHEET #: 1 OF 2

5/04/2020 – 4:05:44pm



EASY VEHICLE ACCESS WHEN LOWERED – 4" CLEARANCE
BOLLARD ROTATES 180 DEGREES
HIGH VISIBILITY SAFETY YELLOW
RUST FREE 1" DIAMETER STAINLESS STEEL PINS – ONE WITH 13/32 HOLE FOR PADLOCK
ALL SURFACES ARE PRIMED WITH RUST & CORROSION RESISTANT , ZINC RICH PRIMER W/ 5,000 HOUR SALT SPRAY PERFORMANCE
STANDARD FINISH, RAL1028 YELLOW

NOTE: SEE TRAFFICGUARD OR LIKE KIND FOR ADDITIONAL TYPES / MODIFICATIONS SEE WWW.TRAFFICGUARD.NET

36" BOLLARD DETAIL

NOT TO SCALE

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LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION
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COMM NO: 221156.00
DATE: 6/2/2022
DRAWN: DGB | DESIGN: DTS
CHECK: GKT

SHEET TITLE
CIVIL DETAILS

SHT. NO. C-302 | REV. NO. 0

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EROSION & SEDIMENT CONTROL NARRATIVE

I. PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE CONSTRUCTION OF A 30'X30' RAISED PLATFORM WITH AN 8'X20' TRELLISED OPEN PERGOLA SHADE STRUCTURE, TRAIL HEAD IMPROVEMENTS, AND STORMWATER MITIGATION ALONG A GRAVEL ACCESS ROAD. THE PROJECT INVOLVES APPROXIMATELY 0.40 ACRES OF LAND DISTURBANCE.

II. EXISTING SITE CONDITIONS

THE SITE GENERALLY SLOPES FROM SOUTH-EAST TO NORTH-WEST WITH SIGNIFICANT EROSION EXISTING ALONG THE GRAVEL ACCESS ROAD.

III. ADJACENT PROPERTIES

THE PROJECT SITE IS BOUNDED BY THE JAMES RIVER HERITAGE TRAIL AND WOODS TO THE NORTH, HOLLINS STREET TO THE SOUTH, RESIDENTIAL HOUSES TO THE EAST AND RAILROAD TRACKS TO THE WEST.

IV. OFF-SITE AREAS

FILL MATERIAL WILL BE OBTAINED FROM AREAS OF EXCAVATION CONTAINED WITHIN THE SITE. UNSUITABLE MATERIAL WILL BE HAULED FROM THE SITE AND DISPOSED OF IN AN APPROVED MANNER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO THE EROSION AND SEDIMENT CONTROL REGULATOR PERTAINING TO OFF-SITE DISTURBED AREAS (IF ANY SUCH AREAS ARE REQUIRED) SUCH AS STOCKPILES, STAGING AREAS, AND SPOIL AREAS THAT ARE USED FOR THIS PROJECT.

V. SOILS

ACCORDING TO USDA SCS SOIL MAPPING, THE PROJECT SITE LIES ON SOIL TYPES McF - MANTEO CHANNERY LOAM, 25 TO 60 PERCENT SLOPES AND UL - URBAN LAND.

McF - MANTEO CHANNERY LOAM, 25 TO 60 PERCENT SLOPES
THIS SOIL TYPE IS ON HILLSLOPES AND THE PARENT MATERIAL IS RESIDUUM WEATHERED FROM MICA SCHIST. IT HAS SLOPES OF 25 TO 60 PERCENT. THE DEPTH TO RESTRICTIVE FEATURE IS 10 TO 20 INCHES TO LITHIC BEDROCK AND THE DRAINAGE CLASS IS SOMEWHAT EXCESSIVELY DRAINED. THE RUNOFF CLASS IS VERY HIGH. K_{SAT} IS VERY LOW TO MODERATELY LOW (0 TO 0.06 INCHES PER HOUR). THE DEPTH TO WATER TABLE IS MORE THAN 80 INCHES. THE AVAILABLE WATER SUPPLY TO A DEPTH OF 60 INCHES IS VERY LOW (ABOUT 1.8 INCHES). NONIRRIGATED LAND CAPACITY CLASSIFICATION IS 7E AND THE HYDROLOGIC SOIL GROUP IS D.

VI. CRITICAL AREAS

THE CRITICAL AREA ADDRESSED BY THIS EROSION AND SEDIMENT CONTROL PLAN INCLUDES EXCESSIVE EROSION ALONG THE GRAVEL ACCESS ROAD CAUSED BY STORMWATER RUNOFF. THIS ISSUE IS ADDRESSED BY STORMWATER MITIGATION MEASURES AS PART OF THIS PROJECT.

VII. EROSION AND SEDIMENT CONTROL MEASURES

ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. SYMBOLS, DETAILS, AND DIMENSIONS USED ARE TAKEN FROM THE HANDBOOK, AS WELL AS THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE STANDARDS.

A. STRUCTURAL PRACTICES

1. TEMPORARY STONE CONSTRUCTION ENTRANCE (CE), SPEC. 3.02: A CONSTRUCTION ENTRANCE SHALL BE PROVIDED AS SHOWN ON THE PLANS AT THE EXISTING ROAD. EQUIPMENT WHEELS SHALL BE CLEAN WHEN ENTERING UPON A PAVED ROAD. ALL VEHICLES ENTERING AND EXITING THE PROJECT SITE SHALL USE A CONSTRUCTION ENTRANCE.
2. SILT FENCE (SF), SPEC. 3.05: SILT FENCE BARRIERS SHALL BE PROVIDED WHERE SHOWN AND AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE.
3. LEVEL SPREADER (LS), SPEC. 3.21: PROVIDE LEVEL SPREADERS AS SHOWN ON THE PLANS.
4. SOIL STABILIZATION BLANKETS AND MATTING (B/M), SPEC. 3.36: PROVIDE SOIL STABILIZATION BLANKETS AND MATTING ALONG THE ACCESS ROAD AS SHOWN ON THE PLANS. IN AREAS WHERE SEEDING OR HYDROSEEDING OF SLOPES ARE UNSUCCESSFUL, PROVIDE EC-2 BLANKETS AND OVERSEED.

B. VEGETATIVE PRACTICES

1. TOPSOILING (TO), SPEC. 3.30: TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILES ARE TO BE STABILIZED WITH TEMPORARY VEGETATION AND HAVE SILT FENCE INSTALLED ALONG THE LOWER PERIMETER TO PROTECT DOWNSTREAM AREAS.
2. TEMPORARY SEEDING (TS), SPEC. 3.31: TEMPORARY SEEDING SHALL BE PROVIDED ON SITE TO PROVIDE STABILIZATION UNTIL SITE DEVELOPMENT OCCURS. APPLY SEED BASED ON TEMPORARY SEEDING SCHEDULE SHOWN ON THE PLANS.
3. PERMANENT SEEDING (PS), SPEC. 3.32: PERMANENT SEEDING SHALL BE PROVIDED ON SITE TO PROVIDE STABILIZATION FOR ALL DISTURBED AREAS. APPLY SEED BASED ON TEMPORARY SEEDING SCHEDULE SHOWN ON THE PLANS.
4. TREE PRESERVATION AND PROTECTION (TP), SPEC. 3.38: TREES IDENTIFIED ON THE E&S PLAN SHEET SHALL BE PROTECTED DURING CONSTRUCTION.

C. MINIMUM STANDARDS

MS-1 STABILIZATION OF DENUDED AREAS: YES
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN 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.

MS-2 STABILIZATION OF SOIL STOCKPILES: YES
DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3 PERMANENT VEGETATIVE COVER: YES
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.

MS-4 TIMING AND STABILIZATION OF SILT TRAPPING MEASURES: N/A
SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5 CONCENTRATED RUNOFF DOWN CUT OR FILLED SLOPES: N/A
STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6 SEDIMENT BASINS AND TRAPS: N/A
SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

MS-7 CUT AND FILL SLOPES: YES
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.

MS-8 CONCENTRATED RUNOFF DOWN CUT OR FILL SLOPES: YES
CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

MS-9 WATER SEEPAGE FROM A SLOPE FACE: YES
WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10 STORM SEWER INLET PROTECTION: YES
ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

MS-11 STABILIZATION OF OUTLETS: YES
BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12 WORK IN LIVE WATERCOURSES: N/A
WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

MS-13 CROSSING A LIVE WATERCOURSE: N/A
WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

MS-14 APPLICABLE REGULATIONS: N/A
ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15 STABILIZATION OF BED AND BANKS: N/A
THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

MS-16 UNDERGROUND UTILITIES: YES
UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

MS-17 CONSTRUCTION ACCESS ROUTES: YES
WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

MS-18 TEMPORARY E&S CONTROL MEASURE REMOVAL: YES
ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

MS-19 ADEQUACY OF RECEIVING CHANNELS: YES
PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS:
A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
(1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
(2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
(B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
(1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR
(2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.
F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
K ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.
L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.
M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS.
N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

D. MAINTENANCE

INSPECTIONS SHALL BE CONDUCTED AT A FREQUENCY OF AT LEAST ONCE EVERY FOUR BUSINESS DAYS, OR AT LEAST EVERY FIVE BUSINESS DAYS AND NO LATER THAN 24 HOURS FOLLOWING A MEASURABLE STORM EVENT. IN THE EVENT THAT A MEASRUABLE STORM EVENT OCCURS WHEN THERE ARE MORE THAN 24 HOURS BETWEEN BUSINESS DAYS, THE INSPECTION SHALL BE CONDUCTED ON THE NEXT BUSINESS DAY. FAILING OR DAMGED ESC AND SWM MEASURES SHALL BE CORRECTED OR REPLACED AS SOON AS THEY ARE OBSERVED. DAMAGE TO EROSION CONTROL MEASURES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.

1. DAMAGE TO EROSION CONTROL MEASURES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
2. MAINTAIN ALL SEEDED AREAS UNTIL A UNIFORM STAND IS ACCEPTED.
3. (SPEC. 3.05) SILT FENCE BARRIERS WILL BE CHECKED DAILY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL REACHES HALF WAY TO THE TOP OF THE BARRIER.
4. (SPEC. 3.18 & 3.19) RIPRAP INSTALLATIONS SHOULD BE INSPECTED PERIODICALLY TO DETERMINE IF HIGH FLOWS HAVE CAUSED SCOUR BENEATH THE RIPRAP OR GEOTEXTILE FABRIC OR DISLODGED ANY OF THE STONE.
5. (SPEC. 3.21) LEVEL SPREADER LIP MUST REMAIN AT 0% SLOPE TO ALLOW PROPER FUNCTION OF THE MEASURE.
6. (SPEC. 3.30) TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN TOPSOIL OR SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 2-INCHES ON 3:1 OR STEEPER SLOPES AND 4-INCHES ON FLATTER SLOPES.
7. (SPEC. 3.31 & 3.32) AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
8. (SPEC. 3.36) ALL SOIL STABILIZATION BLANKETS AND MATTING SHALL BE INSPECTED AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. IF WASHOUT OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH.
9. (SPEC. 3.38) IF THE SOIL HAS BECOME COMPACTED OVER THE ROOT ZONE OF ANY TREE, THE GROUND SHALL BE AERATED BY PUNCHING HOLES WITH AN IRON BAR. ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM OF ANY TREE RETAINED ON THE SITE SHALL BE REPAIRED IMMEDIATELY. BROADLEAF TREES THAT HAVE BEEN STRESSED OR DAMAGED SHALL RECEIVE A HEAVY APPLICATION OF FERTILIZER TO AID THEIR RECOVERY.

VIII. PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH SEEDING FOLLOWING GRADING IN ACCORDANCE WITH THE MINIMUM STANDARDS. SEEDING SHALL BE IN ACCORDANCE WITH THE TEMPORARY OR PERMANENT SEEDING SCHEDULES SHOWN ON THIS PLAN. IN ALL SEEDING OPERATIONS, TOPSOIL, SEED, FERTILIZER AND LIME SHALL BE APPLIED PRIOR TO INSTALLATION OF MULCHING OR EROSION CONTROL BLANKETS AND MATTING.

IX. STORMWATER MANAGEMENT

MANAGEMENT OF STORMWATER RUNOFF DURING CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS 9VAC25-840. THE EROSION AND SEDIMENT CONTROL PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION.

MANAGEMENT OF STORMWATER RUNOFF AFTER CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS 9VAC25-870. THE STORMWATER MANAGEMENT PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO COMPLY WITH THE VSMP REGULATIONS AFTER CONSTRUCTION.

WATER QUALITY CALCULATIONS ARE PROVIDED ON SHEET C-402 AND NO POLLUTANT REMOVAL IS REQUIRED. THIS IS ACHIEVED BY PROTECTING EXISTING TREES AND MAINTAINING THE MAJORITY OF THE DISTURBED AREA AS CONSERVED OPEN SPACE. THE CONSERVED OPEN SPACE WILL BE PLANTED WITH A MEADOW SEED MIX AND MOWED LESS THAN FOUR TIMES PER YEAR. WATER QUANTITY AND FLOODING PROTECTION IS ADDRESSED BY MAINTAINING SHEET FLOW TO LINE OF INTEREST 1 AND 3. CONCENTRATED FLOW TO LINE OF INTEREST 2 WILL BE MANAGED BY A LEVEL SPREADER DESIGNED TO MEET THE CITY'S 3/8 INCH WATER ELEVATION AT THE 10-YEAR STORM EVENT.

X. SOIL STOCKPILES AND BORROW AREAS

FILL MATERIAL WILL BE OBTAINED FROM AREAS OF EXCAVATION ON SITE. LOCATIONS OF SOIL STOCKPILES SHALL BE DETERMINED BY THE CONTRACTOR WITH THE APPROVAL OF THE OWNER/DEVELOPER. ALL STOCKPILES SHALL BE LOCATED ON SITE AND PROTECTED WITH SURROUNDING SILT FENCING AND STABILIZED WITH A VEGETATIVE COVER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN FOR ALL SOILS INTENTIONALLY TRANSPORTED OFFSITE IF THE TRANSPORTED MATERIAL DISTURBS MORE THAN 10,000 SQUARE FEET IN AREA.

XI. SEQUENCE OF CONSTRUCTION

1. INSTALL TREE PROTECTION FENCING.
2. INSTALL CONSTRUCTION ENTRANCE
3. INSTALL PERMANENT LEVEL SPREADER
4. INSTALL SUPER SILT FENCE.
5. CLEAR THE PLANNED DISTURBED AREA AND REMOVE DEBRIS TO A SUITABLE LOCATION.
6. BRING GRADES TO DESIRED ELEVATION.
7. STABILIZE ALL DISTURBED AREAS WITH PERMANENT VEGETATION.
8. EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL RELEASED BY THE GOVERNING AGENCY.
9. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
10. STABILIZE AREAS AFFECTED BY THE REMOVAL OF TEMPORARY E&S MEASURES.

(TS) TEMPORARY SEEDING SCHEDULE

PLANTING SPECIES	SPECIES	RATE (LBS/ACRE)
SEPT 1 - FEB 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CERALE)	50 - 100
FEB 16 - APR 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60 - 100
MAY 1 - AUG 31	GERMAN MILLET (SETARIA ITALICA)	50

(PS) PERMANENT SEEDING SCHEDULE

SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

	TOTAL POUNDS PER ACRE
MINIMUM LAWN CARE (COMMERCIAL OR RESIDENTIAL)	175-200 LBS
KENTUCKY 31 OR TURF-TYPE TALL FESCUE	95-100%
IMPROVED PERENNIAL RYEGRASS	0-5%
KENTUCKY BLUEGRASS	0-5%
HIGH MAINTENANCE LAWN CARE	200-250 LBS
KENTUCKY 31 OR TURF-TYPE TALL FESCUE	100%
GENERAL SLOPE (3:1 OR LESS)	
KENTUCKY 31 FESCUE	128 LBS
ROUNDHEADED BUSHCLOVER	2 LBS
SEASONAL NURSE CROP*	20 LBS
	150 LBS
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
KENTUCKY 31 FESCUE	108 LBS
RED TOP GRASS	2 LBS
SEASONAL NURSE CROP*	20 LBS
INDIAN GRASS	20 LBS
	150 LBS

*USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

ANNUAL RYE:	FEBRUARY 16TH THROUGH APRIL
FOXTAIL MILLET:	MAY 1ST THROUGH AUGUST 15TH
ANNUAL RYE:	AUGUST 16TH THROUGH OCTOBER
WINTER RYE:	NOVEMBER THROUGH FEBRUARY 15TH

LIME & FERTILIZER SPECIFICATIONS:

A SOILS TEST IS REQUIRED PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE LIME AND FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON SITE. CONTACT VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION.

INCORPORATION:
LIME AND FERTILIZER SHALL BE INCORPORATED INT0 THE TOP 4 INCHES OF TOPSOIL BY DISCING OR OTHER MEANS WHENEVER POSSIBLE. FOR EROSION CONTROL, WHEN APPLYING LIME AND FERTILIZER WITH A HYDROSEEDER, APPLY TO A ROUGH, LOOSE SURFACE.

MULCHING:
MULCH WITH STRAW AT A RATE OF 2 TONS/ACRE OR EQUIVALENT.

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COMMONWEALTH OF VIRGINIA
DANIEL T. SUTTON
Lic. No. 45799
6/2/2022
PROFESSIONAL ENGINEER

TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION
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COMM NO: 221156.00
DATE: 6/2/2022
DRAWN: DGB DESIGN: DTS
CHECK: GKT

SHEET TITLE
EROSION AND SEDIMENT CONTROL NARRATIVE

SHT. NO. C-401
REV. NO. 0

6/7/2022 8:55 AM
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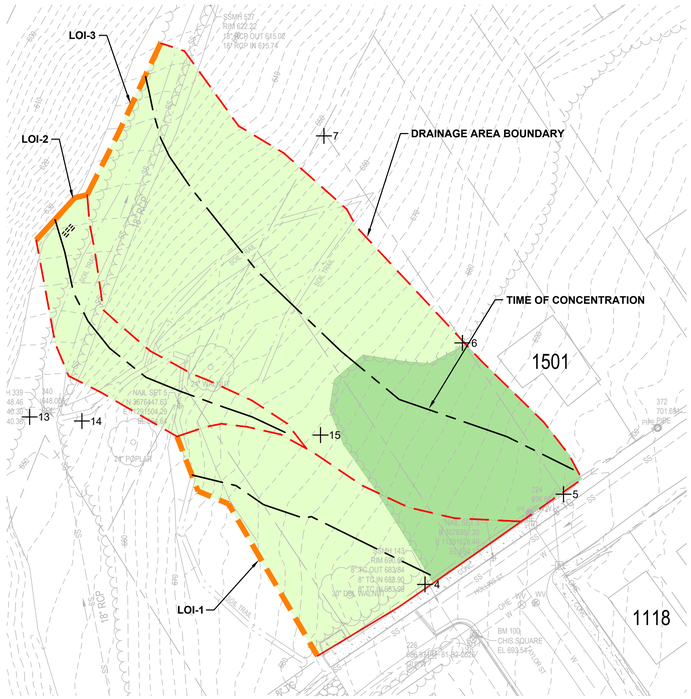

1 PRE DRAINAGE AREA MAP

2 POST DRAINAGE AREA MAP

LEGEND

- IMPERVIOUS
- FOREST OPEN SPACE
- CONSERVED OPEN SPACE
- MANAGED TURF

Land Cover Summary

Line of Interest	Total Area (acres)		Impervious Area (acres)		Open Space/Lawn Area (acres)		Forest Area (acres)		Meadow/ Wooded (acres)	
	Existing	**Proposed**	*Existing*	**Proposed**	*Existing*	**Proposed**	*Existing*	**Proposed**	*Existing*	**Proposed**
LOI-1	*0.12*	**0.05**	*0.00*	**0.01**	*0.02*	**0.00**	*0.10*	**0.01**	*0.00*	**0.02**
LOI-2	*0.05*	**0.45**	*0.00*	**0.05**	*0.00*	**0.12**	*0.07*	**0.12**	*0.00*	**0.16**
LOI-3	*0.38*	**0.10**	*0.00*	**0.02**	*0.11*	**0.02**	*0.27*	**0.01**	*0.00*	**0.05**

Rational Method Summary

Line of Interest	Time of Concentration (T_c)		Peak Flows (cfs)			
			2-year		10-year	
	Existing	**Proposed**	*Existing*	**Proposed**	*Existing*	**Proposed**
LOI-1	*8.3*	**5.0**	*0.0*	**0.1**	*0.1*	**0.1**
LOI-2	*6.9*	**7.1**	*0.0*	**0.5**	*0.0*	**0.6**
LOI-3	*7.0*	**5.0**	*0.2*	**0.2**	*0.2*	**0.2**

POINT TABLE		
POINT #	NORTHING	EASTING
1	3676289.21	11291467.27
2	3676293.53	11291474.00
3	3676305.17	11291492.11
4	3676376.93	11291601.42
5	3676412.65	11291656.27
6	3676472.53	11291616.21
7	3676554.48	11291561.39
8	3676627.70	11291601.96
9	3676694.30	11291559.21
10	3676715.10	11291545.85
11	3676736.68	11291532.00
12	3676509.57	11291405.58
13	3676443.22	11291444.89
14	3676441.62	11291465.57
15	3676436.04	11291560.05

3 POST AREA LANDCOVER

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested				0.98	0.98 *
Managed Turf (acres) -- disturbed, graded for yards or other turf to be				0.27	0.27
Impervious Cover (acres)				0.08	0.08
					1.33

** Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method*

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	**-0.11**	**	**TP LOAD REDUCTION NOT REQUIRED**

N

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.

0 30' 60'

SCALE: 1" = 30'

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REVISION DESCRIPTION	DATE	MRK

COMM NO:	221156.00
DATE:	6/2/2022
DRAWN:	DESIGN:
CHECK: GKT	

SHEET TITLE

POST-DRAINAGE AREA MAP

SHT. NO.	REV. NO.
C-402	0

6/7/2022 8:56 AM
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Line of Interest			
LOI-1	*Existing*	Sheet flows to Existing woods line	

LOI-1 Catchment Area Rational Calculations

Description	Hydrologic Soil Group	Runoff Coefficient (C)	Area		Area*C
			ft²	acres	
Impervious	D	0.95	0	0.00	0.00
Open space, lawns	D	0.25	750	0.02	0.00
Forest	D	0.05	4,550	0.10	0.01
Meadow/Wooded	D	0.21	0	0.0	0.00
Total (Average C)	-	**0.08**	5,300	***0.12***	0.01

T_c Calculations

Time of Concentration[1] (T_t) = (0.67*n*L_t/√S)$^{0.467}$

n (woods) = 0.4

L_t (initial overland flow length) = 140 ft

Time of Concentration[2] (T_c) = T_c = 0.0078 $L^{0.77}S^{-0.385}$

*T_c = 8.3 min

T_t Path

L_t = 140 ft

Start Elev = 690

Overland Elev = 667

End Elev = -

Overland Slope (S) ft/ft = 0.164

Channel Slope (S) ft/ft = -

[1]Time of Concentration calculated using the the Kerby formula for initial overland flow.

[2]Time of Concentration calculated using the the Kirpich formula channel flow.

*Assumed Tc of 5 minutes if calculated Tc is less than 5 minutes

	2-yr	10-yr	25-yr	100-yr
B	47.72	51.92	51.68	48.39
D	11.23	10.70	10.17	9.00
E	0.83	0.77	0.74	0.68
Intensity =	4.05	5.38	5.98	6.97
Peak Flow (cfs) =	***0.0***	***0.1***	***0.1***	***0.1***

Rainfall intensity calculated using Hydraulic Design Advisory HAD 05-03, I = B / (t_c + D)[E]

Rational Method Peak Flow Summary, Q = CIA

Line of Interest			
LOI-1	**Proposed**	Sheet flows to Existing woods line	

LOI-1 Catchment Area Rational Calculations

Description	Hydrologic Soil Group	Runoff Coefficient (C)	Area		Area*C
			ft²	acres	
Impervious	D	0.95	610	0.01	0.01
Open space, lawns	D	0.25	0	0.00	0.00
Forest	D	0.05	520	0.01	0.00
Meadow/Wooded	D	0.21	930	0.0	0.00
Total (Average C)	-	**0.39**	2,060	**0.05**	0.02

T_c Calculations

Time of Concentration[1] (T_t) = (0.67*n*L_t/√S)$^{0.467}$

n (meadow) = 0.24

L_t (initial overland flow length) = 25 ft

Time of Concentration[2] (T_c) = T_c = 0.0078 $L^{0.77}S^{-0.385}$

*T_c = 5.0 min

T_t Path

L_t = 57 ft

Start Elev = 687

Overland Elev = 683

End Elev = 676

Overland Slope (S) ft/ft = 0.160

Channel Slope (S) ft/ft = 0.219

[1]Time of Concentration calculated using the the Kerby formula for initial overland flow.

[2]Time of Concentration calculated using the the Kirpich formula channel flow.

*Assumed Tc of 5 minutes if calculated Tc is less than 5 minutes

	2-yr	10-yr	25-yr	100-yr
B	47.72	51.92	51.68	48.39
D	11.23	10.70	10.17	9.00
E	0.83	0.77	0.74	0.68
Intensity =	4.72	6.23	6.91	8.04
Peak Flow (cfs) =	**0.1**	**0.1**	**0.1**	**0.2**

Rainfall intensity calculated using Hydraulic Design Advisory HAD 05-03, I = B / (t_c + D)[E]

Rational Method Peak Flow Summary, Q = CIA

Line of Interest			
LOI-2	*Existing*	Sheet flows to Existing woods line	

LOI-2 Catchment Area Rational Calculations

Description	Hydrologic Soil Group	Runoff Coefficient (C)	Area		Area*C
			ft²	acres	
Impervious	D	0.95	0	0.00	0.00
Open space, lawns	D	0.25	0	0.00	0.00
Forest	D	0.05	2,880	0.07	0.00
Meadow/Wooded	D	0.21	0	0.0	0.00
Total (Average C)	-	**0.05**	2,880	***0.07***	0.00

T_c Calculations

Time of Concentration[1] (T_t) = (0.67*n*L_t/√S)$^{0.467}$

n (woods) = 0.4

L_t (initial overland flow length) = 130 ft

Time of Concentration[2] (T_c) = T_c = 0.0078 $L^{0.77}S^{-0.385}$

*T_c = 6.9 min

T_t Path

L_t = 130 ft

Start Elev = 675

Overland Elev = 635

End Elev = -

Overland Slope (S) ft/ft = 0.308

Channel Slope (S) ft/ft = -

[1]Time of Concentration calculated using the the Kerby formula for initial overland flow.

[2]Time of Concentration calculated using the the Kirpich formula channel flow.

*Assumed Tc of 5 minutes if calculated Tc is less than 5 minutes

	2-yr	10-yr	25-yr	100-yr
B	47.72	51.92	51.68	48.39
D	11.23	10.70	10.17	9.00
E	0.83	0.77	0.74	0.68
Intensity =	4.30	5.70	6.33	7.37
Peak Flow (cfs) =	***0.0***	***0.0***	***0.0***	***0.0***

Rainfall intensity calculated using Hydraulic Design Advisory HAD 05-03, I = B / (t_c + D)[E]

Line of Interest			
LOI-2	**Proposed**	Drainage to Level Spreader	

LOI-2 Catchment Area Rational Calculations

Description	Hydrologic Soil Group	Runoff Coefficient (C)	Area		Area*C
			ft²	acres	
Impervious	D	0.95	2,040	0.05	0.04
Open space, lawns	D	0.25	5,400	0.12	0.03
Forest	D	0.05	5,200	0.12	0.01
Meadow/Wooded	D	0.21	6,900	0.16	0.03
Total (Average C)	-	**0.26**	19,540	**0.45**	0.11

T_c Calculations

Time of Concentration[1] (T_t) = (0.67*n*L_t/√S)$^{0.467}$

n (meadow) = 0.24

L_t (initial overland flow length) = 152 ft

Time of Concentration[2] (T_c) = T_c = 0.0078 $L^{0.77}S^{-0.385}$

*T_c = 7.1 min

T_t Path

L_t = 270 ft

Start Elev = 698

Overland Elev = 668

End Elev = 635

Overland Slope (S) ft/ft = 0.197

Channel Slope (S) ft/ft = 0.280

[1]Time of Concentration calculated using the the Kerby formula for initial overland flow.

[2]Time of Concentration calculated using the the Kirpich formula channel flow.

*Assumed Tc of 5 minutes if calculated Tc is less than 5 minutes

	2-yr	10-yr	25-yr	100-yr
B	47.72	51.92	51.68	48.39
D	11.23	10.70	10.17	9.00
E	0.83	0.77	0.74	0.68
Intensity =	4.27	5.66	6.28	7.32
Peak Flow (cfs) =	**0.5**	**0.6**	**0.8**	**1.0**

Rainfall intensity calculated using Hydraulic Design Advisory HAD 05-03, I = B / (t_c + D)[E]

Rational Method Peak Flow Summary, Q = CIA

Line of Interest			
LOI-2	*Existing*	Sheet flows to Existing woods line	

LOI-2 Catchment Area Rational Calculations

Description	Hydrologic Soil Group	Runoff Coefficient (C)	Area		Area*C
			ft²	acres	
Impervious	D	0.95	0	0.00	0.00
Open space, lawns	D	0.25	4,670	0.11	0.03
Forest	D	0.05	11,900	0.27	0.01
Meadow/Wooded	D	0.21	0	0.0	0.00
Total (Average C)	-	**0.11**	16,570	***0.38***	0.04

T_c Calculations

Time of Concentration[1] (T_t) = (0.67*n*L_t/√S)$^{0.467}$

n (meadow) = 0.24

L_t (initial overland flow length) = 200 ft

Time of Concentration[2] (T_c) = T_c = 0.0078 $L^{0.77}S^{-0.385}$

*T_c = 7.0 min

T_t Path

L_t = 240 ft

Start Elev = 698

Overland Elev = 640

End Elev = 626

Overland Slope (S) ft/ft = 0.290

Channel Slope (S) ft/ft = 0.350

[1]Time of Concentration calculated using the the Kerby formula for initial overland flow.

[2]Time of Concentration calculated using the the Kirpich formula channel flow.

*Assumed Tc of 5 minutes if calculated Tc is less than 5 minutes

	2-yr	10-yr	25-yr	100-yr
B	47.72	51.92	51.68	48.39
D	11.23	10.70	10.17	9.00
E	0.83	0.77	0.74	0.68
Intensity =	4.29	5.69	6.31	7.35
Peak Flow (cfs) =	***0.2***	***0.2***	***0.3***	***0.4***

Rainfall intensity calculated using Hydraulic Design Advisory HAD 05-03, I = B / (t_c + D)[E]

Rational Method Peak Flow Summary, Q = CIA

Line of Interest			
LOI-3	**Proposed**	Sheet flows to Existing woods line	

LOI-3 Catchment Area Rational Calculations

Description	Hydrologic Soil Group	Runoff Coefficient (C)	Area		Area*C
			ft²	acres	
Impervious	D	0.95	921	0.02	0.02
Open space, lawns	D	0.25	1,000	0.02	0.01
Forest	D	0.05	250	0.01	0.00
Meadow/Wooded	D	0.21	2,200	0.1	0.01
Total (Average C)	-	**0.37**	4,371	**0.10**	0.04

T_c Calculations

Time of Concentration[1] (T_t) = (0.67*n*L_t/√S)$^{0.467}$

n (woods) = 0.4

L_t (initial overland flow length) = 46 ft

Time of Concentration[2] (T_c) = T_c = 0.0078 $L^{0.77}S^{-0.385}$

*T_c = 5.0 min

T_t Path

L_t = 46 ft

Start Elev = 648

Overland Elev = 626

End Elev = -

Overland Slope (S) ft/ft = 0.478

Channel Slope (S) ft/ft = -

[1]Time of Concentration calculated using the the Kerby formula for initial overland flow.

[2]Time of Concentration calculated using the the Kirpich formula channel flow.

*Assumed Tc of 5 minutes if calculated Tc is less than 5 minutes

	2-yr	10-yr	25-yr	100-yr
B	47.72	51.92	51.68	48.39
D	11.23	10.70	10.17	9.00
E	0.83	0.77	0.74	0.68
Intensity =	4.72	6.23	6.91	8.04
Peak Flow (cfs) =	**0.2**	**0.2**	**0.3**	**0.4**

Rainfall intensity calculated using Hydraulic Design Advisory HAD 05-03, I = B / (t_c + D)[E]

Rational Method Peak Flow Summary, Q = CIA

Weir Report

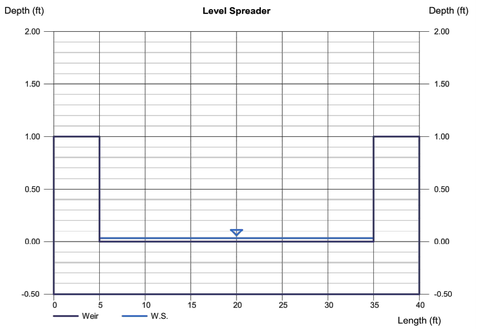
Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Friday, Jun 3 2022

Level Spreader

Rectangular Weir
Crest = Sharp
Bottom Length (ft) = 30.00
Total Depth (ft) = 1.00

Calculations
Weir Coeff. Cw = 3.33
Compute by: = Known Q
Known Q (cfs) = 0.60

Highlighted
Depth (ft) = 0.03
Q (cfs) = 0.600
Area (sqft) = 0.99
Velocity (ft/s) = 0.61
Top Width (ft) = 30.00



LEVEL SPREADER DESIGN CRITERIA

Level Spreader Summary

ID	Design Flow Q10 (cfs)	Weir Length (ft)*	Weir Flow Depth (ft)	Weir Lip Type	Weir Elevation	Approach Length (ft)	Downstream Flow Length (ft)	Downstream Slope
LOI-2	0.6	30	632.95	Sharp (Concrete)	0.03	12	60	50%

*Designed per City Standards of 3/8" flow depth for 10-year storm event

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Friday, Jun 3 2022

Riprap Channel - 33% Slope, 10-Year

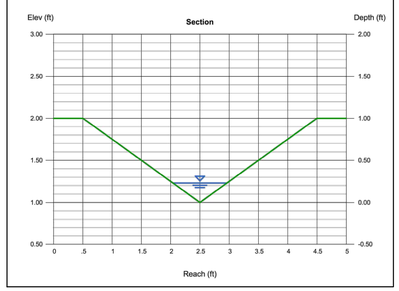
Triangular
Side Slopes (z:1) = 2.00, 2.00
Total Depth (ft) = 1.00

Invert Elev (ft) = 1.00
Slope (%) = 33.00
N-Value = 0.030

Calculations
Compute by: = Known Q
Known Q (cfs) = 0.60

Highlighted
Depth (ft) = 0.23
Q (cfs) = 0.600
Area (sqft) = 0.11
Velocity (ft/s) = 5.67
Wetted Perim (ft) = 1.03
Crit Depth, Yc (ft) = 0.36
Top Width (ft) = 0.92
EGL (ft) = 0.73

MAXIMUM SLOPE TO VERIFY RIPRAP SIZE.



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Friday, Jun 3 2022

Riprap Channel - 2% Slope, 10-Year

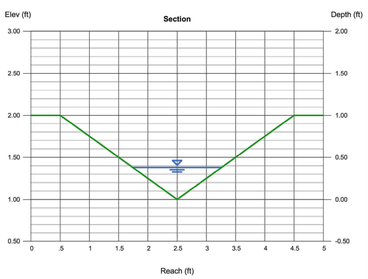
Triangular
Side Slopes (z:1) = 2.00, 2.00
Total Depth (ft) = 1.00

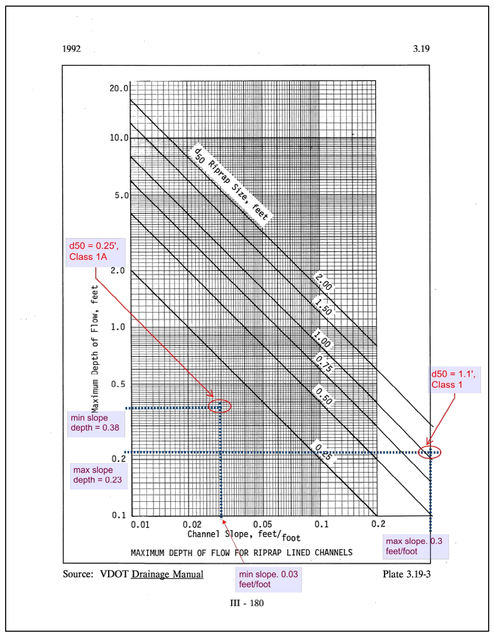
Invert Elev (ft) = 1.00
Slope (%) = 2.00
N-Value = 0.030

Calculations
Compute by: = Known Q
Known Q (cfs) = 0.60

Highlighted
Depth (ft) = 0.38
Q (cfs) = 0.600
Area (sqft) = 0.29
Velocity (ft/s) = 2.08
Wetted Perim (ft) = 1.70
Crit Depth, Yc (ft) = 0.36
Top Width (ft) = 1.52
EGL (ft) = 0.45

MINIMUM SLOPE TO VERIFY DITCH CAPACITY.





RIPRAP CHANNEL DESIGN CRITERIA

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COMMONWEALTH OF VIRGINIA
DANIEL T. SUTTON
Lic. No. 45799
6/2/2022
PROFESSIONAL ENGINEER

TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

REVISION DESCRIPTION	DATE	MRK
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COMM NO: 221156.00
DATE: 6/2/2022
DRAWN: DGB | DESIGN: DTS
CHECK: GKT

SHEET TITLE

STORMWATER MANAGEMENT CALCULATIONS

SHT. NO. C-403 | REV. NO. 0

6/7/2022 9:48 PM
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Existing trees to remain undisturbed

Limits of Construction, (typ.)

Existing trees to remain undisturbed

See Structure Details (See Structure Plans)

Limits of Construction, (typ.)

Proposed Overlook

8' X 20' Pergola

(4) 6' Bench, (typ.)

Proposed Signage

Selected Trimming By Owner

Limits of Construction, (typ.)

Existing trees to remain undisturbed

30" Walnut tree to remain

24" Walnut tree to remain

Limits of Construction, (typ.)

Existing trees to remain undisturbed

HOLLINS ST

13+32

13+00

14+46

10+00

8" TC

8" TC

81-82-2526

Scale: 1" = 10' - 0"

0' 5' 10' 20'

COMMONWEALTH OF VIRGINIA
WILLIAM R. MECHNICK
No. 000844
LANDSCAPE ARCHITECT

LPDA
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TINBRIDGE HILL OVERLOOK

CITY OF LYNCHBURG

LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION

COMM NO:	221156.00
DATE:	6/2/2022
DRAWN: DLG	DESIGN: DLG
CHECK: WRM	

SHEET TITLE

SITE PLAN LAYOUT

SHT. NO.	REV. NO.
L-101	

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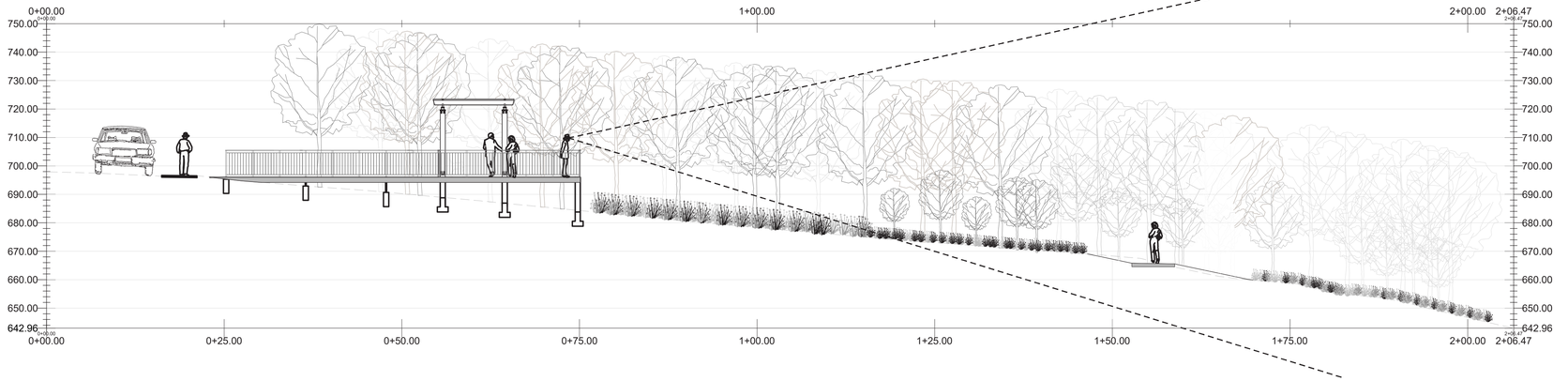
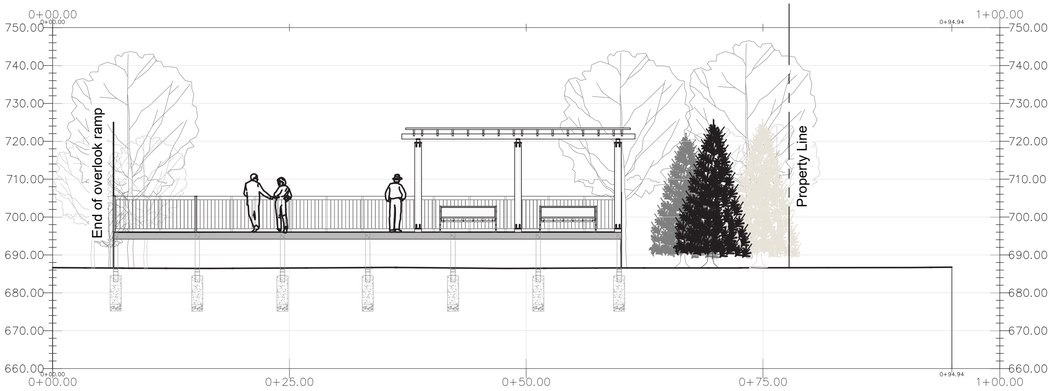
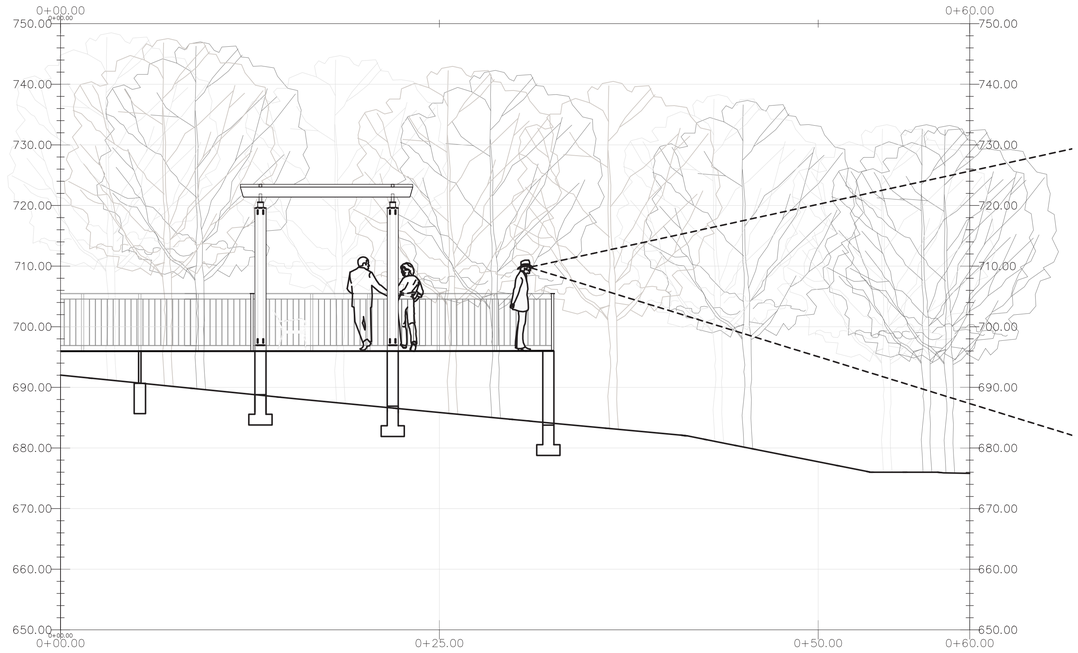


A Tinbridge Overlook Site Cross Section
Scale: 1" = 10' - 0"



B Tinbridge Overlook Section Elevation Looking NW
Scale: 1" = 8' - 0"



C Tinbridge Overlook Section Elevation Looking W
Scale: 1" = 8' - 0"

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TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION

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SHEET TITLE
SITE SECTIONS AND ARCHITECTURAL ELEVATIONS

SHT. NO. L-102
REV. NO.

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Existing trees to remain undisturbed

Limits of Construction, (typ.)

Deck Details 7 L-104

See Structure Details (See Structure Plans)

2 L-104 Pergola Side Elevation

8' X 20' Pergola

1 L-104 Pergola Structure Detail

Super Structure (See Structure Plans)

(4) 6' Bench, (typ.)

Proposed Overlook

Proposed Signage

4 L-104 Walkway Deck

Selected Trimming By Owner

HOLLINS ST

13+32

6+50

13+00

14+46

14+00

10+00

18" RCP

24" Walnut tree to remain

30" Walnut tree to remain

81-82-2526

8" TC

Scale: 1" = 10' - 0"

0' 5' 10' 20'

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TINBRIDGE HILL OVERLOOK

CITY OF LYNCHBURG

LYNCHBURG, VA

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SHEET TITLE

SITE DIMENSION PLAN

SHT. NO. L-103

REV. NO.

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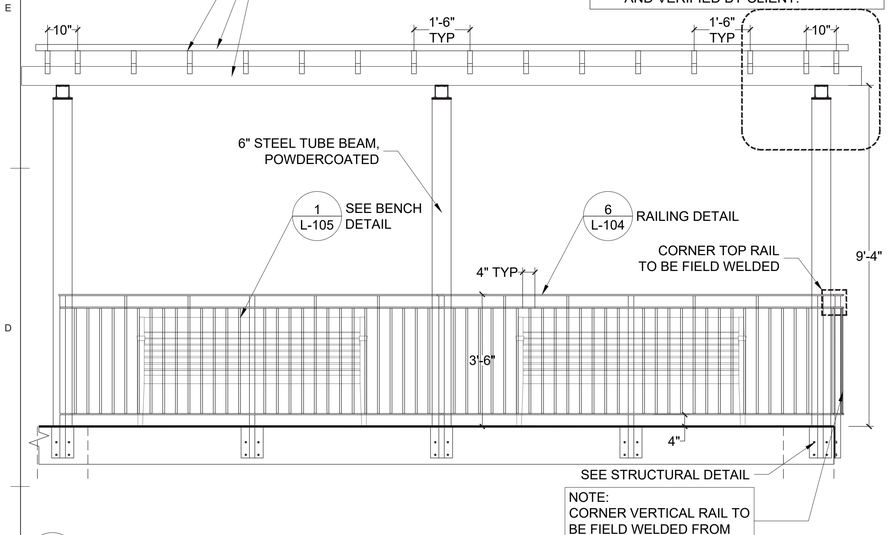
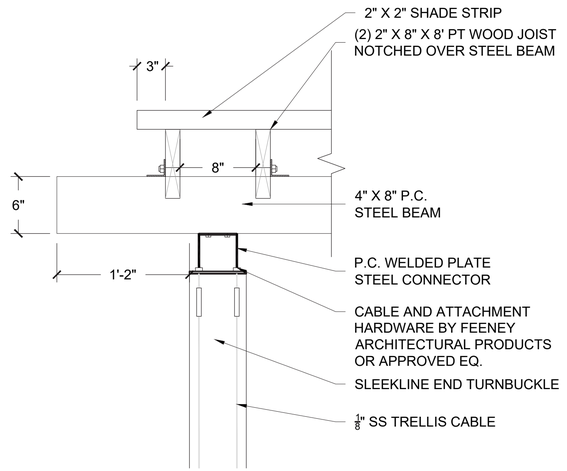
NOTE:
PT PERGOLA JOISTS:
1. TO BE #1 GRADE FREE OF KNOT HOLES LARGER THAN ½"
2. STAIN WITH CABOT (OR EQUIVALENT) STAIN. LA TO PROVIDE COLOR
3. RAILING COLOR WILL BE SELECTED AND VERIFIED BY CLIENT.

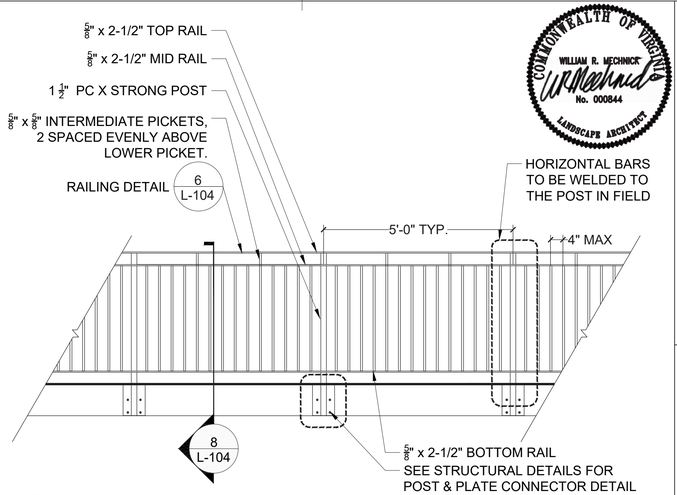


NOTE:
CORNER VERTICAL RAIL TO BE FIELD WELDED FROM BOTTOM BAR TO TOP BAR.

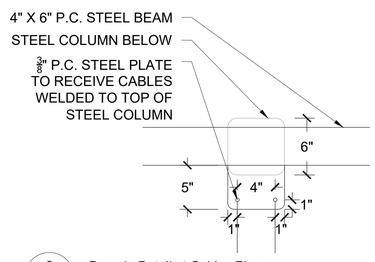
1 L-104 — 8' x 20' Pergola Structure Detail
Scale: 1/2" = 1' - 0"



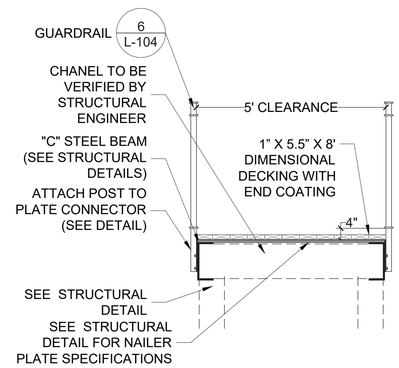
3 L-104 — Pergola Detail at Cables Section (Optional)
Scale: 1- 1/2" = 1' - 0"



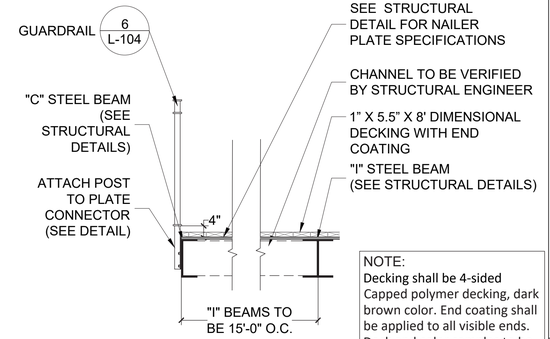
6 L-104 — Railing Detail
Scale: 1/2" = 1' - 0"



3 L-104 — Pergola Detail at Cables Plan
Scale: 1- 1/2" = 1' - 0"

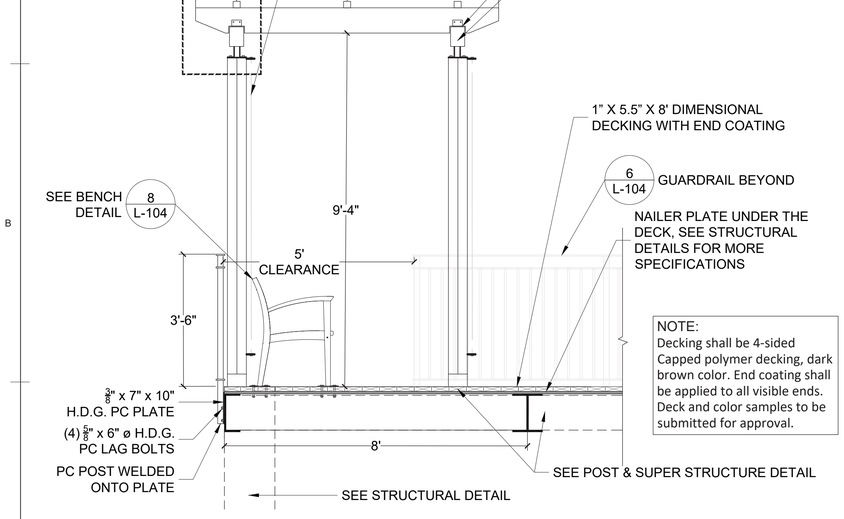


5 L-104 — Walkway Deck Detail
Scale: 1/2" = 1' - 0"



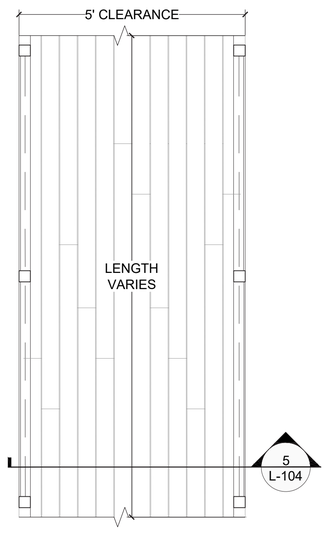
NOTE:
Decking shall be 4-sided Capped polymer decking, dark brown color. End coating shall be applied to all visible ends. Deck and color samples to be submitted for approval.

7 L-104 — Deck Detail
Scale: 1/2" = 1' - 0"

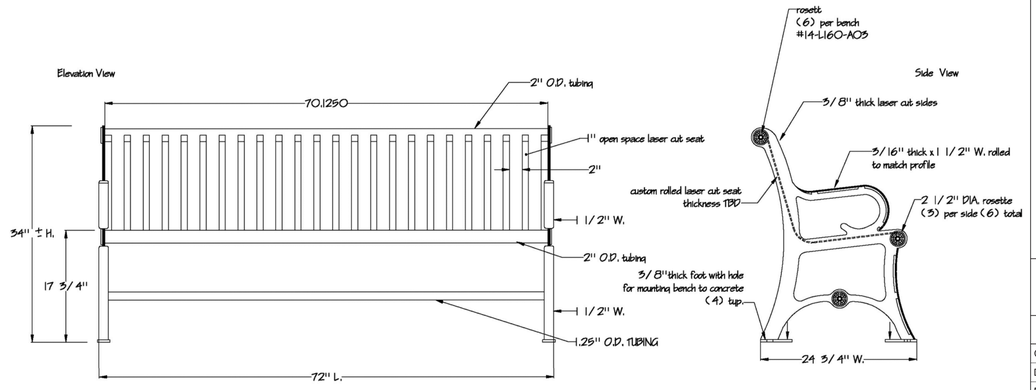


NOTE:
Decking shall be 4-sided Capped polymer decking, dark brown color. End coating shall be applied to all visible ends. Deck and color samples to be submitted for approval.

2 L-104 — Pergola Side Elevation
Scale: 1/2" = 1' - 0"



4 L-104 — Walkway Deck
Scale: 1/2" = 1' - 0"



8 L-104 — Bench Detail
Scale: 1" = 1' - 0"

NOTE:
DETAILS PROVIDES FOR OVERALL DIMENSIONS, FINISHES, AND MATERIAL PURPOSES ONLY. SEE STRUCTURAL DETAILS FOR ALL DIMENSIONS, MATERIALS, AND FASTENING.

LPDA LANDSCAPE ARCHITECTURE LAND PLANNING
50 YEARS

COMMONWEALTH OF VIRGINIA
WILLIAM R. MECHNICK
No. 000844
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TINBRIDGE HILL OVERLOOK

CITY OF LYNCHBURG

LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION

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DETAILS

SHT. NO.	REV. NO.
L-104	

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Meadow Seed Mix Key

- Virginia's Gentleman Mix (ERNMX 174)
- Native Steep Slope Mix (ERNMX 181)
- Jacklin's Scottish Links Mixture (JSLM Seed Mix)

Note:
**See total square footages for each seed mix above on landscape detail sheet L-106.

Seed mixes to be from Earnst Seed Co.
https://www.ernstseed.com/

Jacklins' Scottish Links to be from Oliger's Seed Co.
https://www.oligerseed.com

Existing trees to remain undisturbed

Native Steep Slope Mix (ERNMX 181)
(1) CF

Limits of Construction, (typ.)
(2) CC

2'-3' Mowed Shoulder (JSLM Seed Mix)

2'-3' Mowed Shoulder (JSLM Seed Mix)
(1) CF

Existing trees to remain undisturbed

Mixed evergreen buffer
(3) JV

Limits of Construction, (typ.)

Selected Trimming By Owner

Virginia's Gentleman Mix (ERNMX 174)
(2) CA
(1) AA
(4) JVT
(5) PS
(5) TO
(15) IV
(3) IG
Open Lawn
(5) IVR
(3) CA
(2) PS
(3) IVJ
(10) LM
(5) HP
(7) SN

Virginia's Gentleman Mix (ERNMX 174)

Limits of Construction, (typ.)

Proposed Overlook

Existing trees to remain undisturbed

30" Walnut tree to remain

2'-3' Mowed Shoulder (JSLM Seed Mix)

Limits of Construction, (typ.)

(2) CC

(1) CF

24" Walnut tree to remain

Native Steep Slope Mix (ERNMX 181)

HOLLINS ST

8" TC

81-82-2526

5' 0' 10' 20'
Scale: 1" = 10' - 0"

COMMONWEALTH OF VIRGINIA
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CITY OF LYNCHBURG

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LANDSCAPE PLAN

SHT. NO.	REV. NO.
L-105	

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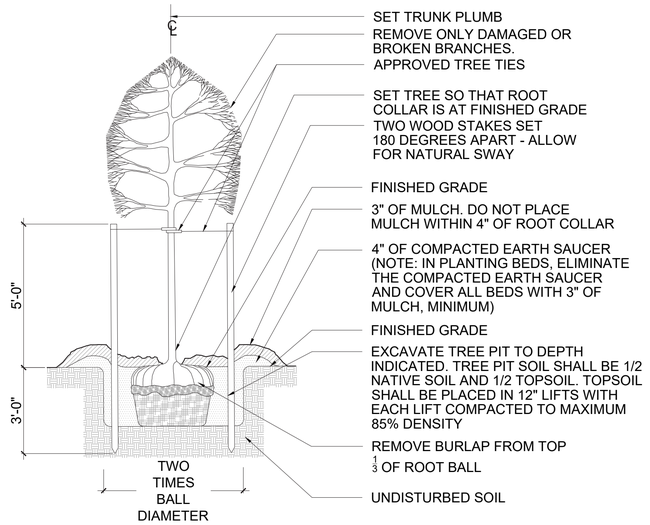
Note:
Seed mixes to be from Earnst Seed Co.
https://www.ernstseed.com/

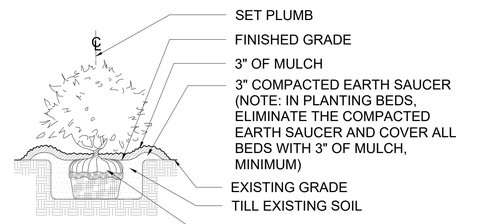
Jacklins' Scottish Links to be from
Oliger's Seed Co.
https://www.oligerseed.com

Tinbridge Overlook Plant List

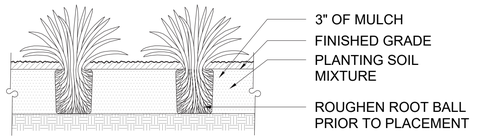
SYMBOL	SCIENTIFIC NAME	COMMON NAME	QTY.	UNIT	SIZE	SPACING	CONDITION	COMMENTS
KEY	**Ornamental/Small Trees**							
AA	Amelanchier arborea	Downy Serviceberry	1	EA	2"- 2.5" cal.	As Shown	B&B	Multi-stem
	Reforestation Ornamental Trees							
CC	Cercis canadensis	Eastern Redbud	4	EA	2"- 2.5" cal.	As Shown	B&B	Multi-stem and single stem
CF	Cornus florida	Flowering Dogwood	3	EA	2"- 2.5" cal.	As Shown	B&B	
	Evergreen Trees							
JV	Juniperus virginiana 'Burkii'	Burkii Eastern Red Cedar	3	EA	2'-2.5'	As Shown	B&B	
JVT	Juniperus virginiana 'Taylor'	Taylor Eastern Red Cedar	6	EA	2'-2.5'	As Shown	B&B	
TO	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	5	EA	2'-2.5'	As Shown	B&B	
	Deciduous Shrubs							
CA	Cornus ammomum	Silky Dogwood	5	EA	2'-2.5'	As Shown	#3 CONT.	
HP	Hypericum prolificum	Shrubby St. John's Wort	5	EA	6"-1'	3' O.C.	#1 CONT.	
IG	Ilex glabra	Inkberry Holly	3	EA	2'-2.5'	As Shown	#3 CONT.	
IVJ	Ilex verticillata	Jim Dandy Winterberry	3	EA	2'-2.5'	As Shown	#3 CONT.	
IVR	Ilex verticillata	Red Sprite Winterberry	3	EA	2'-2.5'	As Shown	#3 CONT.	
	Short Meadow/Perennials							
IV	Iris versicolor	Blue flag	15	EA		12" O.C.	#1 CONT.	
LM	Lirope muscari	Big Blue	10	EA		12" O.C.	#1 CONT.	
PS	Phlox subulata	Moss phlox	5	EA		18" O.C.	#1 CONT.	
SN	Sorghastrum nutans	Indian Grass	7	EA		36" O.C.	#1 CONT.	Grasses should be planted in the back of meadow
	Meadow Seed Mix					**SF Totals**		
ERNMX 181	Native Steep Slope Mix with Annual Ryegrass	E&S Mix				8072	SEEDED	Erosion Control & Revegetation
ERNMX 174	Virginia Gentleman's Mix	Meadow				1785	SEEDED	Pollinator Favorites; uplands and meadows
ERNMX 136	Three-Way Tall Fescue Mix	Open Lawn				795	SEEDED	Lawn and Turfgrass Sites
JSLM	Jacklin's Scottish Links Mixture	Mowed Shoulder				1763	SEEDED	Mowed Areas



1 L501 Tree Detail
Scale: 3/8" = 1' - 0"



2 L501 Shrub Detail
Scale: 1/2" = 1' - 0"



3 L501 Perennial Detail
Scale: 1/2" = 1' - 0"

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No. 000844
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TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION

COMM NO: 221156.00
DATE: 6/2/2022
DRAWN: DLG DESIGN: DLG
CHECK: WRM

SHEET TITLE
LANDSCAPE DETAILS

SHT. NO. L-106
REV. NO.

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A. GENERAL

1. THE DESIGN OF THE STRUCTURE COMPLIES WITH THE INTERNATIONAL BUILDING CODE 2018 AND THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE "USBC" (2018 EDITION).

2. GRAVITY DESIGN LOADS ARE AS FOLLOWS:

   a. SUPERIMPOSED DEAD LOADS
      1. 1" THICK COMPOSITE DECKING .....8 PSF

   b. LIVE LOADS
      1. OVERLOOK DECKING & WALKWAY.....100 PSF
      2. HANDRAILS & GUARDRAILS
         A. HANDRAIL/TOP RAIL.....50 PLF IN ANY DIRECTION & 200 LBPT LOAD IN ANY DIRECTION NOT ACTING CONCURRENTLY
         B. INTERMEDIATE RAILS.....50 LB HORIZONTAL NORMAL LOAD

3. THE DESIGN OF THE STRUCTURE TO RESIST SNOW LOADS IS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE'S SECTION 1608 AND ASCE 7 CHAPTER 7. DESIGN INFORMATION IS AS FOLLOWS:

   1. GROUND SNOW LOAD .....Pg =25 PSF
   2. FLAT ROOF SNOW LOAD .....Pf = 20 PSF
   3. SNOW EXPOSURE FACTOR (FIGURE 7.3.1).....Ce = 1.0
   4. SNOW LOAD IMPORTANCE FACTOR (TABLE 1.5-2).....Is = 1.0
   5. ROOF THERMAL FACTOR (FIGURE 7.3.2).....Ct = 1.0
   6. ROOF SLOPE FACTOR (FIGURE 7.4.1) .....Cs = 1.00

4. THE DESIGN OF THE STRUCTURE TO RESIST WIND PRESSURES IS IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE'S SECTION 1609.0, WHICH IS BASED ON ASCE 7, CHAPTER 26. DESIGN INFORMATION IS AS FOLLOWS:

   a. BASIC 3 SECOND GUST WIND SPEED (FIGURE 6-1) .....109 MILES PER HOUR
   b. WIND LOAD IMPORTANCE FACTOR (TABLE 6-1) .....Iw = 1.0
   c. WIND EXPOSURE CATEGORY FOR MAIN RESISTING SYSTEM .....B

5. THE DESIGN OF THE STRUCTURE TO RESIST SEISMIC FORCES IS IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE'S SECTION 1613 AND ASCE 7.

   a. OCCUPANCY CATEGORY II
   b. SEISMIC IMPORTANCE FACTOR (TABLE 11.5-1) .....Ie = 1.0
   c. SPECTRAL RESPONSE ACCELERATIONS (USGS SEISMIC HAZARDS PROGRAM)
      1. AT SHORT PERIODS ..... Ss = 0.155 g
      2. AT ONE SECOND PERIOD ..... S1 = 0.057 g
   d. SITE CLASS (TABLE 20.3-1) .....D (ASSUMED)
   e. SPECTRAL RESPONSE COEFFICIENTS
      1. AT SHORT PERIODS ..... Sds = 0.165 g
      2. AT ONE SECOND PERIOD ..... Sd1 = 0.091 g
   f. SEISMIC DESIGN CATEGORY (TABLES 11.6-1 AND 11.6-2) ..... B
   g. BASIC SEISMIC FORCE-RESISTING-SYSTEM (TABLE 12.2-1).....CANTILEVER COLUMNS
   h. RESPONSE MODIFICATION FACTOR (TABLE 12.2-1) .....R = 2.5
   i. SEISMIC RESPONSE COEFFICIENT .....Cs = 0.132
   j. DESIGN BASE SHEAR .....1.2 KIPS
   k. ANALYSIS PROCEDURE .....EQUIVALENT LATERAL-FORCE

6. IMPOSED CONSTRUCTION LOADS IN EXCESS OF STATED DESIGN LOADS MUST BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO THE IMPOSITION OF SUCH LOADS.

7. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS MUST DETERMINE THE SCOPE OF THE STRUCTURAL WORK FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE. THE STRUCTURAL DRAWINGS MUST NOT BE CONSIDERED SEPARATELY FOR PURPOSES OF BIDDING THE STRUCTURAL WORK. DUE CONSIDERATION MUST BE GIVEN TO OTHER STRUCTURAL WORK OR WORK RELATED TO THE STRUCTURE, INCLUDING NECESSARY COORDINATION DESCRIBED OR IMPLIED BY THE LANDSCAPE ARCHITECTURAL AND CIVIL DRAWINGS.

8. THE REPRODUCTION OF THE STRUCTURAL CONTRACT DOCUMENTS IN ANY FASHION AS STRUCTURAL SHOP DRAWING DOCUMENTS IS PROHIBITED.

9. SCALES NOTED ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DIMENSIONAL INFORMATION MUST NOT BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS.

10. DETAILS, SECTIONS AND NOTES SHOWN ON THESE DRAWINGS ARE INTENDED TO BE TYPICAL AND MUST APPLY TO SIMILAR CONDITIONS ELSEWHERE UNLESS OTHERWISE SHOWN OR NOTED.

11. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL RESULTING REVISIONS TO THE STRUCTURAL SYSTEM AS A RESULT OF ACCEPTANCE OF CONTRACTOR PROPOSED ALTERNATIVES OR SUBSTITUTIONS.

12. THE GENERAL CONTRACTOR (OR CONSTRUCTION MANAGER) MUST SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS FOR APPROVAL. THE STRUCTURAL ENGINEER WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT IF THE GENERAL CONTRACTOR FAILS TO OBTAIN APPROVAL OF THE SHOP DRAWINGS. SHOP DRAWINGS ARE REVIEWED AS A CONVENIENCE TO THE GENERAL CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT. THE GENERAL CONTRACTOR MUST STATE ON THE SHOP DRAWINGS THAT CONTRACT DOCUMENT REQUIREMENTS HAVE BEEN MET AND THAT ALL DIMENSIONS, CONDITIONS AND QUANTITIES HAVE BEEN REVIEWED AND VERIFIED AS SHOWN AND/OR CORRECTED ON THE SHOP DRAWINGS.

13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING AND SHORING, AS REQUIRED, TO ENSURE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR PORTION THEREOF DURING CONSTRUCTION.

14. ALL COLUMNS AND FOOTINGS MUST BE CENTERED ON GRIDLINES IN EACH DIRECTION, UNLESS NOTED OTHERWISE.

15. METHODS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBLILITY OF THE CONTRACTOR. THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

16. CONTRACTOR MUST FABRICATE AND ERECT STEEL IN ACCORDANCE WITH OSHA'S SAFETY REQUIREMENTS, 29 CFR 1926 SAFETY STANDARDS FOR STEEL ERECTION;

B. FOUNDATIONS AND EARTHWORK

1. THE FOUNDATION DESIGN FOR THE STRUCTURE IS FOR AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF. FOUNDATIONS EXPOSED TO FROST MUST BEAR A MINIMUM OF 24 INCHES BELOW FINISHED GRADE.

2. DO NOT OVER EXCAVATE THE FOOTPRINT OF FOUNDATIONS. IF OVER EXCAVATION IS REQUIRED BEYOND THE 3 INCH CONSTRUCTION TOLERANCE, FORM THE SIDES OF THE FOOTING.

3. CLEAN AND TAMP SHALLOW FOUNDATION EXCAVATIONS TO A UNIFORM SURFACE. IF PLACEMENT OF CONCRETE IS NOT WITHIN 24 HOURS OF FOUNDATION EXCAVATION, TEMPORARILY PROTECT SIDES AND BOTTOMS OF FOUNDATION EXCAVATIONS WITH A POLYETHYLENE MEMBRANE.

4. ALWAYS PROVIDE POSITIVE SURFACE WATER DRAINAGE AWAY FROM THE STRUCTURE.

C. CONCRETE

1. ALL CONCRETE WORK MUST BE IN ACCORDANCE WITH ACI 301, ACI 318 AND ACI 302.

2. PROVIDE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 5,000 PSI AT 28 DAYS. USE NORMAL WEIGHT AGGREGATES CONFORMING TO ASTM C33 AND TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150. CONCRETE MUST MEET THE FOLLOWING DURABILITY EXPOSURE CATEGORIES: F3, S0, W1, C2.

3. FLY ASH CONFORMING TO ASTM C618, TYPE C OR F MAY BE USED AS TO REPLACE A PORTION OF THE PORTLAND CEMENT IN A CONCRETE MIX. THE AMOUNT OF PORTLAND CEMENT CONTENT MUST NOT BE LESS THAN 70 PERCENT OF THE TOTAL AMOUNT OF CEMENTITIOUS MATERIAL IN THE MIX.

4. GROUND GRANULATED BLAST-FURNACE SLAG CONFORMING TO ASTM C989, MAY BE USED AS TO REPLACE A PORTION OF THE PORTLAND CEMENT IN A CONCRETE MIX. THE AMOUNT OF PORTLAND CEMENT CONTENT MUST NOT BE LESS THAN 70 PERCENT OF THE TOTAL AMOUNT OF CEMENTITIOUS MATERIAL IN THE MIX.

5. CONCRETE REINFORCEMENT BARS MUST CONFORM TO ASTM A615, GRADE 60. REINFORCEMENT BARS MUST NOT BE TACK WELDED, WELDED, HEATED OR CUT UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR APPROVED BY THE STRUCTURAL ENGINEER.

6. GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES WITH NON-SHRINK, NON-METALLIC GROUT WHICH CONFORMS TO CORPS OF ENGINEERS SPECIFICATION CRD-C 621-82 OR ASTM C1107.

7. DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES MUST CONFORM TO THE RECOMMENDATIONS OF ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI SP-66 "DETAILING MANUAL". PLACING OF REINFORCING BARS MUST CONFORM TO THE RECOMMENDATIONS OF ACI 315R "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" AND CRSI "MANUAL OF STANDARD PRACTICE".

8. MIX, TRANSPORT AND PLACE CONCRETE PER THE RECOMMENDATIONS OF ACI 301.

9. PROVIDE CONCRETE COVER PROTECTION OF REINFORCEMENT PER ACI 318 SECTION 20.6 WITH STANDARD BAR CHAIRS AND SPACERS REQUIRED TO MAINTAIN MINIMUM CONCRETE PROTECTION. COMMON MINIMUM CONCRETE COVERS APPLYING TO THIS PROJECT:

   a. CAST AGAINST AND PERMANENTLY EXPOSED EARTH ..... 3 INCHES
   b. CONCRETE EXPOSED TO EARTH OR WEATHER:
      1. #5 BARS AND SMALLER ..... 1 ½ INCHES
      2. #6 BARS AND LARGER..... 2 INCHES

10. TIE DOWELS IN PLACE BEFORE PLACING CONCRETE. DO NOT STAB OR "WET-SET" DOWELS.

11. CHAMFER EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

12. PROTECT AND CURE ALL CONCRETE SURFACES. BEGIN CURING WALLS IMMEDIATELY AFTER STRIPPING FORMS AND FLATWORK IMMEDIATELY AFTER FINISHING.

13. INSTALL AND SECURE EMBEDMENTS SUCH AS ANCHOR BOLTS AND EMBEDMENT PLATES WITHIN SPECIFIED TOLERANCES BEFORE CONCRETE PLACEMENT.

D. STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL MUST CONFORM TO THE FOLLOWING:

a. ANCHOR BOLTS	ASTM F1554, GRADE 36
b. ANGLES	ASTM A36
c. CHANNELS	ASTM A36
d. PLATES	ASTM A36
e. HSS RECTANGULAR	ASTM A500, GRADE B (Fy = 46 KSI)
f. SUBMIT MILL TEST REPORTS FOR REVIEW.	

2. BOLTS FOR STRUCTURAL STEEL CONNECTIONS MUST BE HIGH STRENGTH BOLTS PER THE REQUIREMENTS OF ASTM A325, TYPE N. UNLESS NOTED OTHERWISE, PROVIDE BOLTS DESIGNED AS BEARING TYPE BOLTS AND INSTALL PER THE "SNUG TIGHT" CONDITION. INSTALL A HARDENED WASHER UNDER THE ELEMENT TO BE TIGHTENED.

3. DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL PER THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS," THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" AND THE SAFETY REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND THE LOCAL JURISDICTION. PROVIDE TEMPORARY SEATS TO FACILITATE SAFE ERECTION.

4. THE FABRICATOR MUST PREPARE THE SHOP DRAWINGS BASED ON DESIGN LOADS PROVIDED OR CONNECTION DESIGN INFORMATION SHOWN IN THE TYPICAL DETAILS. THE FABRICATOR IS RESPONSIBLE FOR CHOOSING, DESIGNING AND DETAILING ALL CONNECTIONS PARTIALLY DETAILED IN THE CONTRACT DRAWINGS IN ACCORDANCE WITH PART 10 OF THE AISC "MANUAL OF STEEL CONSTRUCTION" FIFTEENTH EDITION.

5. STEEL CONNECTIONS MUST DEVELOP UNFACTORED END REACTIONS SHOWN ON DRAWINGS. WHEN REACTIONS ARE NOT SHOWN, DEVELOP END REACTION OF 60% OF ALLOWABLE UNIFORM LOADS INDICATED IN BEAM TABLES IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PROVIDE AT LEAST TWO ROWS OF BOLTS AND USE A MINIMUM UNFACTORED END REACTION OF 11.0 KIPS.

6. IF THE FABRICATOR USES ALTERNATE CONNECTION DESIGNS, A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONSTRUCTION MUST SEAL AND SIGN THE CONNECTION DESIGNS AND SUBMIT WITH THE SHOP DRAWINGS.

7. PERFORM WELDING IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARD D1.1. PROVIDE ELECTRODES FOR SHOP AND FIELD WELDS IN ACCORDANCE WITH AWS A5.1 OR AWS A5.5, CLASS E70XX, LOW HYDROGEN. ALL WELDS MUST USE FILLER METAL WITH A MINIMUM CVN VALUE OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT.

8. ALL SHOP AND FIELD WELDING MUST BE EXECUTED BY WELDERS AND WELDING OPERATORS WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TEST AS PRESCRIBED IN AWS D1.1 OF THE AMERICAN WELDING SOCIETY TO PERFORM THE TYPES OF WELDS REQUIRED ON THE PROJECT.

9. SHOP OR FIELD WELDS AT NON-BOLTED CONNECTIONS THAT ARE NOT SPECIFICALLY DETAILED MUST BE 3/16" CONTINUOUS FILLETS AT EACH CONTACT EDGE OR SURFACE.

10. RETURN ALL WELDS AT CORNERS TWICE THE NOMINAL SIZE OF THE WELD MINIMUM, UNLESS OTHERWISE NOTED.

11. ALL COPES, BLOCKS, CUT-OUTS, AND OTHER CUTTING OF STRUCTURAL MEMBERS MUST HAVE ALL RE-ENTRANT CORNERS SHAPED, NOTCHED FREE TO A RADIUS OF AT LEAST ½".

12. FABRICATION MUST NOT PROCEED PRIOR TO SHOP DRAWING APPROVAL.

13. SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.

14. THE CONTRACTOR MUST NOTIFY WILEY WILSON, INC. OF ANY MISFABRICATION STRUCTURAL STEEL PRIOR TO ERECTION OF SAME.

15. WHERE NO UPWARD CAMBER IS SHOWN ON THE CONTRACT DOCUMENTS, ANY MILL CAMBER MUST BE DETAILED UPWARD IN THE BEAMS.

16. EXPOSED STEEL MUST BE HOT DIPPED GALVANIZED. STEEL SHAPES, PLATES AND BARS MUST BE GALVANIZED PER ASTM A123. STEEL BOLTS, NUTS AND WASHERS MUST BE GALVANIZED PER ASTM A153, CLASS C. DAMAGED AND UNCOATED AREAS MUST BE REPAIRED PER ASTM A780. SEE PAINT SPEC FOR STEEL PAINT REQUIREMENTS OVER GALVANIZED STEEL.

17. REMOVE WELD SPATTER, SLIVERS AND SIMILAR SURFACE DISCONTINUITIES. REMOVE BLEMISHES AND SURFACE IRREGULARITIES RESULTING FROM TEMPORARY BRACES OR FIXTURES BY FILLING OR GRINDING, BEFORE CLEANING, TREATING AND SHOP PRIMING. GRIND TACK WELDS SMOOTH UNLESS INCORPORATED INTO FINAL WELDS. REMOVE BACKING AND RUNOFF TABS, AND GRIND WELDS SMOOTH. GRIND SHEARED, PUNCHED AND FLAME-CUT EDGES TO REMOVE BURRS AND PROVIDE SMOOTH SURFACES AND EASED EDGES. KEEP APPEARANCE AND QUALITY OF EXPOSED WELDS CONSISTENT. REMOVE BACKING AND RUNOFF TABS AND GRIND WELDS SMOOTH.

E. WOOD FRAMING

1. ALL WOOD FRAME JOIST CONSTRUCTION FOR THE OVERLOOK DECK MUST BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2018, SECTION 2308, UNLESS OTHERWISE NOTED. REFER TO LANDSCAPE ARCHITECTURE DRAWINGS FOR WOOD FRAMING REQUIREMENTS OF PERGOLA STRUCTURE.

2. ALL WOOD FRAMING MUST BE KILN DRIED NO. 1 (OR BETTER) DIMENSION SOUTHERN YELLOW PINE CONFORMING TO SOUTHERN PINE INSPECTION BUREAU GRADING RULES, AND MUST BE KILN DRIED TO 19% MAXIMUM MOISTURE CONTENT, UNLESS OTHERWISE NOTED.

3. ALL MISCELLANEOUS WOOD CONNECTIONS MUST BE FASTENDED PER INTERNATIONAL BUILDING CODE TABLE 2304.9.1 "FASTENING SCHEDULE."

4. ATTACH WOOD NAILER PLATES TO STEEL BEAMS WITH HILTI X-CR STAINLESS STEEL POWDER ACTUATED FASTENERS OR APPROVED EQUAL.

F. COMPOSITE WOOD DECKING

1. ALL COMPOSITE WOOD FRAME CONSTRUCTION MUST BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2018, SECTION 2304, UNLESS OTHERWISE NOTED.

2. COMPOSITE WOOD DECKING MUST BE INSTALLED AND FASTENED PER THE MANUFACTURER'S RECOMMENDATIONS. MEMBER PROPERTIES MUST BE AS FOLLOWS:

   a. FLEXURE: Fb = 250 PSI
   b. SHEAR: Fv = 200 PSI
   c. MODULUS OF ELASTICITY: E = 100,000 PSI

3. COMPOSITE DECKING MUST BE INSTALLED CONTINUOUS OVER 3 SPANS MINIMUM (UNLESS NOTED OTHERWISE NOTED) AND MUST BE FASTENED AT EACH JOIST.

4. ATTACH COMPOSITE DECKING TO JOIST USING MANUFACTURER'S RECOMMENDED HIDDEN FASTENERS.

SPECIAL INSPECTIONS

1. AN INDEPENDENT AGENCY MUST PERFORM SPECIAL INSPECTIONS PER THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE "USBC" (2018 EDITION) SECTION 111.2 AND THE INTERNATIONAL BUILDING CODE 2018. IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE SECTION 1704.0, THE RESPONSIBLE INSPECTOR MUST BE A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE CONSTRUCTION TAKES PLACE. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN SECTION 110. WHEN THE CONSTRUCTION CONTRACTOR IS REQUIRED BY THE GOVERNMENT TO PROVIDE SPECIAL INSPECTIONS AS PART OF HIS WORK, THE CONTRACTOR MUST RETAIN THIRD-PARTY ASSUANCE AGENCIES TO CONDUCT THE SPECIAL INSPECTIONS REQUIRED BY THE INTERNATIONAL BUILDING CODE. THE INSPECTING AGENCY MUST PROVIDE REPORTS OF THE SPECIAL INSPECTIONS DIRECTLY TO THE GOVERNMENT.

2. WRITTEN REPORTS MUST BE SUBMITTED TO THE BUILDING OFFICIAL AND REGISTERED DESIGN PROFESSIONAL STATING COMPLIANCE OR NON-COMPLIANCE WITH DESIGN DOCUMENTS AND SPECIFICATIONS. ALL REPORTS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE CONSTRUCTION TAKES PLACE.

3. CONTINUOUS: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.

4. PERIODIC: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

5. FAILURE TO RETAIN AN INDEPENDENT TESTING AGENCY TO PERFORM THE REQUIRED SERVICES SPECIFIED ABOVE, OR FAILURE TO SUBMIT SIGNED AND SEALED REPORTS, INDICATES NON-COMPLIANCE WITH THE CONTRACT DOCUMENTS.

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COMMONWEALTH OF VIRGINIA
JACQUELINE W. ROSSER
Lic. No. 49425
06/02/2022
PROFESSIONAL ENGINEER

TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION

COMM NO: 221156.00
DATE: 06/02/2022
DRAWN: CAW | DESIGN: JWR
CHECK: SMF

SHEET TITLE
STRUCTURAL GENERAL NOTES

SHT. NO. S-001
REV. NO.

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A. STRUCTURAL - CONCRETE CONSTRUCTION SECTION

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK - VERIFY THE FOLLOWING ARE IN COMPLIANCE IBC 1705.3, 1(ACI 318 REFERENCES NOTED IN IBC TABLE)

INSPECTION REQ (Y/N)		TASK	INSPECTION TYPE	DESCRIPTION
Y	1.	INSPECT REINFORCEMENT AND VERIFY PLACEMENT	OBSERVE	VERIFY PRIOR TO PLACING CONCRETE THAT REINFORCING IS OF SPECIFIED TYPE, GRADE AND SIZE; THAT IS FREE OF OIL, DIRT AND UNACCEPTABLE RUST; THAT IS LOCATED AND SPACED PROPERLY; THAT HOOKS, BENDS, TIES, STIRRUPS AND SUPPLEMENTAL REINFORCEMENT ARE PLACED CORRECTLY; THAT LAP LENGTHS, STAGGER AND OFFSETS ARE PROVIDED; AND THAT ALL MECHANICAL CONNECTIONS ARE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND/OR EVALUATION REPORT
N	2.	REINFORCING BAR WELDING	OBSERVE	-VERIFY WELDABILITY OF REINFORCING BARS OTHER THA ASTM A 706 -INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" IN ACCORDANCE WITH AWS D1.4
Y	3.	ALL OTHER WELDING	CONTINUOUS	VISUALLY INSPECT ALL WELDS IN ACCORDANCE WITH AWS D1.4
Y	4.	CAST IN PLACE ANCHORS AND POST INSTALLED DRILLED ANCHORS (DOWNWARD INCLINED)	OBSERVE	VERIFY PRIOR TO PLACING CONCRETE THAT CAST IN PLACE ANCHOR AND POST INSTALLED DRILLED ANCHORS HAVE PROPER EMBEDMENT, SPACING AND EDGE DISTANCE
N	5.	POST-INSTALLED ADHESIVE ANCHORS IN HORIZONTAL OR UPWARD INCLINED ORIENTATION	CONTINUOUS & DOCUMENT	-INSPECT AS REQUIRED PER APPROVED ICC-ES REPORT -VERIFY THAT INSTALLER IS CERTIFIED FOR INSTALLATION OF HORIZONTAL AND OVERHEAD APPLICATIONS -INSPECT PROOF LOADING AS REQUIRED BY THE CONTRACT DOCUMENTS
Y	6.	VERIFY USE OF REQUIRED MIX DESIGN	OBSERVE	VERIFY THAT ALL MIXES USED COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS
Y	7.	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	CONTINUOUS	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TEST VERIFY THESE TESTS ARE PERFORMED BY QUALIFIED TECHNICIANS
Y	8.	INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	CONTINUOUS	VERIFY PROPER APPLICATION TECHNIQUES ARE USED DURING CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED
Y	9.	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUE	OBSERVE	INSPECT CURING, COLD WEATHER PROTECTION, AND HOT WEATHER PROTECTION PROCEDURES
Y	10.	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	OBSERVE	

B. GEOTECHNICAL - SOILS INSPECTION SECTION

SOILS INSPECTION - VERIFY THE FOLLOWING ARE IN COMPLIANCE
IBC 1705.6

INSPECTION REQ (Y/N)		TASK	INSPECTION TYPE	DESCRIPTION
Y	1.	MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	OBSERVE	
Y	2.	EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	OBSERVE	
Y	3.	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	CONTINUOUS	
Y	4.	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	OBSERVE	DURING FILL PLACEMENT, THE SPECIAL INSPECTOR SHALL VERIFY THAT PROPER MATERIALS AND PROCEDURES ARE USED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT

C. STRUCTURAL - STEEL- BOLTING SECTION

STEEL INSPECTION PRIOR TO BOLTING-VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH IBC 1705.2.1, AISC 360-10: TABLE C-N5.6-1

INSPECTION REQ (Y/N)		TASK	INSPECTION TYPE	DESCRIPTION
Y	1.	MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	PERFORM	
Y	2.	FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	OBSERVE	
Y	3.	PROPER FASTENERS SELECTED FOR JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	OBSERVE	
Y	4.	PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	OBSERVE	
Y	5.	CONNECTING ELEMENTS, INCLUDING APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	OBSERVE	
Y	6.	PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	OBSERVE	

STEEL INSPECTION DURING BOLTING-VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH IBC 1705.2.1, AISC 360-10: TABLE C-N5.6-2

INSPECTION REQ (Y/N)		TASK	INSPECTION TYPE	DESCRIPTION
Y	7.	FASTENER ASSEMBLIES OF SUITABLE CONDITION PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	OBSERVE	
Y	8.	JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO PRETENSIONING OPERATION	OBSERVE	
Y	9.	FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	OBSERVE	
Y	10.	BOLTS ARE PRETENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	OBSERVE	

STEEL INSPECTION AFTER BOLTING-VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH IBC 2015 1705.2.1, AISC 360-10: TABLE C-N5.6-3

INSPECTION REQ (Y/N)		TASK	INSPECTION TYPE	DESCRIPTION
Y	11.	DOCUMENT ACCEPTANCE OR REJECTION OF ALL BOLTED CONNECTIONS	DOCUMENT	

D. STRUCTURAL STEEL - WELDED SECTION

STEEL INSPECTION PRIOR TO WELDING-VERFIY THE FOLLOWING ARE IN COMPLIANCE WITH IBC 1705.2.1, AISC 360-10:TABLE C-N5.4-1

INSPECTION REQ (Y/N)	TASK	INSPECTION TYPE	DESCRIPTION
Y	1. VERIFY THAT THE WELDING PROCEDURES SPECIFICATION (WPS) IS AVAILABLE	PERFORM	
Y	2. VERIFY MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES ARE...	PERFORM	
Y	3. VERIFY MATERIAL IDENTIFICATION	PERFORM	TYPE AND GRADE
Y	4. WELDER IDENTIFICATION SYSTEM	PERFORM	THE FABRICATOR OR ERECTOR, AS APPLICABLE, MUST MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW-STRESS TYPE
N	5. FIT-UP GROOVE WELDS (INCLUDING JOINT GEOMETERY)	OBSERVE	-JOINT PREPARATION -DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) -CLEANLINESS (CONDITION OF STEEL SURFACES) -TACKING (TACK WELD QUALITY AND LOCATION) -BACKING TYPE AND FIT (IF APPLICABLE)
Y	6. FIT-UP OF FILLET WELDS	OBSERVE	-DIMENSIONS (ALIGNMENT, GAPS AT ROOT) -CLEANLINESS (CONDITION STEEL SURFACES) -TACKING (TACK WELD QUALITY AND LOCATION)

STEEL INSPECTION DURING WELDED-VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH IBC 1705.2.1, AISC 360-10: TABLE C-N5.4-2

INSPECTION REQ (Y/N)	TASK	INSPECTION TYPE	DESCRIPTION
Y	7. USE OF QUALIFIED WELDERS	PERFORM	WELDING BY WELDERS, WELDING OPERATORS, AND TACK WELDERS WHO ARE QUALIFIED IN CONFORMANCE WITH REQUIREMENTS
Y	8. CONTROL AND HANDLING OF WELDING CONSUMABLES	OBSERVE	-PACKAGING -ELECTRODE ATMOSPHERIC EXPOSURE CONTROL
Y	9. NO WELDING OVER CRACKED TACK WELDS	OBSERVE	
Y	10. ENVIRONMENTAL CONDITIONS	OBSERVE	-WIND SPEED WITHIN LIMITS -PRECIPITATION AND TEMPERATURE
Y	11. WELDING PROCEDURES SPECIFICATIONS FOLLOWED	OBSERIVE	-SETTINGS ON WELDING EQUIPMENT -TRAVEL SPEED -SELECTED WELDING MATERIALS -SHIELDING GAS TYPE/FLOW RATE -PREHEAT APPLIED -INTERPASS TEMP MAINTAINED (MIN/MAX) -PROPER POSITION (F, V, H, OH) -INTERMIX OF FILLER MATERIAL AVOIDED
Y	12. WELDING TECHNIQUES	OBSERVE	-INTERPASS AND FINAL CLEANING -EACH PASS WITHIN PROFILE LIMITATIONS -EACH PASS MEETS QUALITY REQUIREMENTS

STEEL INSPECTION AFTER WELDING-VERFIY THE FOLLOWING ARE IN COMPLIANCE WITH IBC 2015 1705.2.1, AISC 360-10: TABLE C-N5.4-3

INSPECTION REQ (Y/N)	TASK	INSPECTION TYPE	DESCRIPTION
Y	13. WELDS CLEANED	OBSERVE	
Y	14. SIZE, LENGTH, AND LOCATION OF ALL WELDS	PERFORM	SIZE, LENGTH, AND LOCATION OF ALL WELDS CONFORM TO THE REQUIREMENTS OF THE DETAIL DRAWINGS
Y	15. WELDS MEET VISUAL ACCEPTANCE CRITERIAL	PERFORM & DOCUMENT	-CRACK PROHIBITION -WELD/BASE-METAL FUSION -CRATER CROSS SECTION -WELD PROFILES -WELD SIZE -UNDERCUT -POROSITY
Y	16. ARC STRIKES	PERFORM	
N	17. k-AREA	PERFORM	WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS
Y	18. BACKING REMOVED, WELD TABS REMOVED AND FINISHED, AND FILLET WELDS ADDED WHERE REQUIRED	PERFORM & DOCUMENT	
Y	19. REPAIR ACTIVITIES	PERFORM & DOCUMENT	
Y	20. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	PERFORM	

STRUCTURAL ABBREVIATIONS

ADJ	ADJACENT	EOD	EDGE OF DECK	PSI	POUNDS PER SQUARE INCH
APPROX	APPROXIMATELY	EXT	EXTERIOR	REINF	REINFORCED
ARCH	ARCHITECT/ARCHITECTURAL	FND	FOUNDATION	REQ'D	REQUIRED
BLDG	BUILDING	FS	FOOTING STEP	SCHED	SCHEDULE
BOTT	BOTTOM	FV	FIELD VERIFY	SOG	SLAB ON GRADE
BRG	BEARING	FTG	FOOTING	STL	STEEL
CJ	CONSTRUCTION JOINT	GALV	GALVANIZED	T/	TOP OF
CLR	CLEAR	HORIZ	HORIZONTAL	TYP	TYPICAL
COL	COLUMN	INT	INTERIOR	UNO	UNLESS NOTED OTHERWISE
CONC	CONCRETE	JT	JOINT	VERT	VERTICAL
CONN	CONNECTION	LONG	LONGITUDINAL	W/	WITH
CONT	CONTINUOUS	MIN	MINIMUM	WP	WORKING POINT
DIA	DIAMETER	OC	ON CENTER	WT	WEIGHT
DET	DETAIL	PAF	POWER-ACTUATED FASTENER	Ø	DIAMETER
DIR	DIRECTION	PL	PLATE		
EA	EACH	PSF	POUNDS PER SQURE FOOT		

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JACQUELINE W. ROSSER
Lic. No. 49425
06/02/2022
PROFESSIONAL ENGINEER

TINBRIDGE HILL OVERLOOK
CITY OF LYNCHBURG
LYNCHBURG, VA

MRK	DATE	REVISION DESCRIPTION

COMM NO: 221156.00
DATE: 06/02/2022
DRAWN: CAW | DESIGN: JWR
CHECK: SMF

SHEET TITLE
SPECIAL INSPECTIONS CONT & ABBREVIATIONS

SHT. NO. S-002 | REV. NO.

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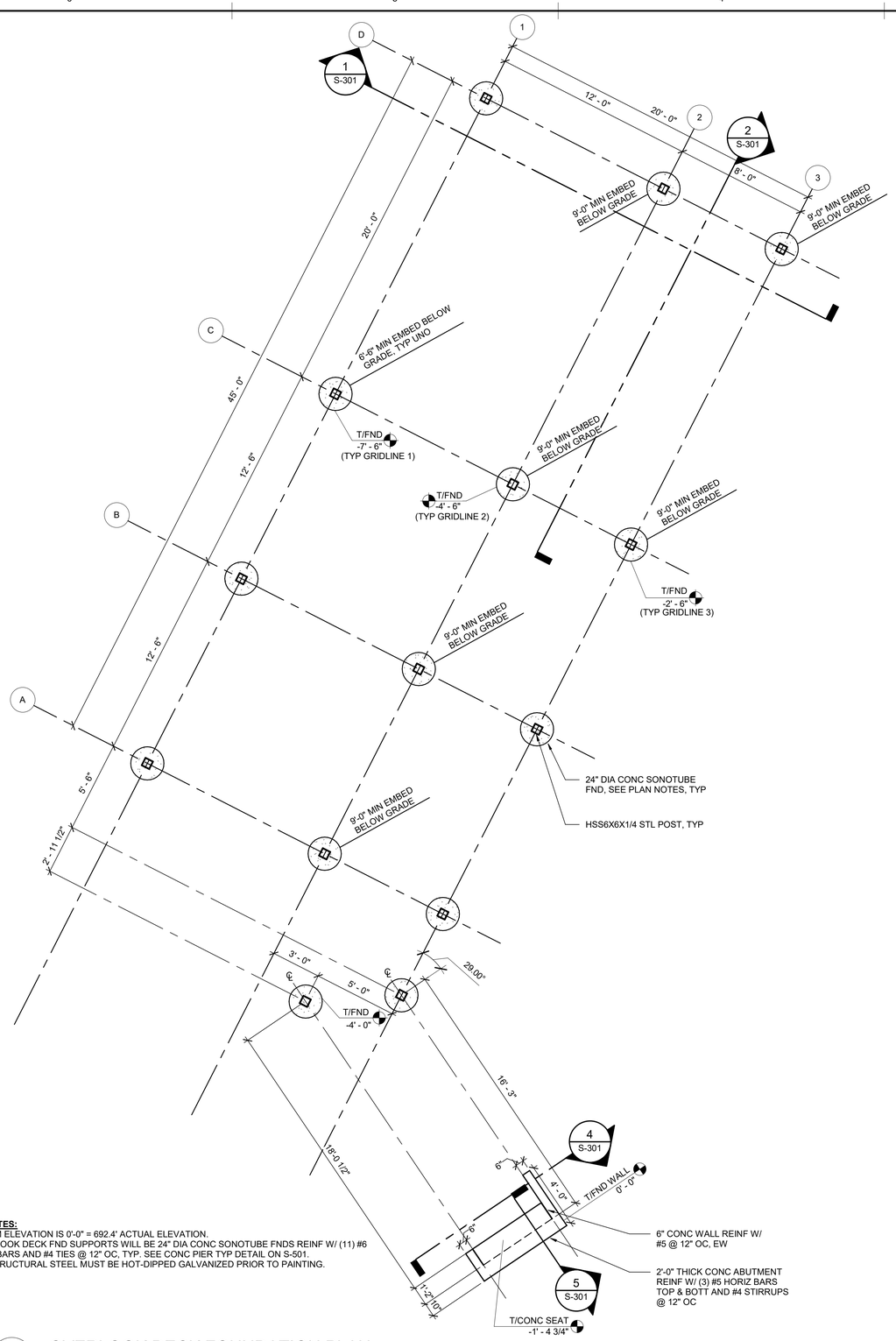


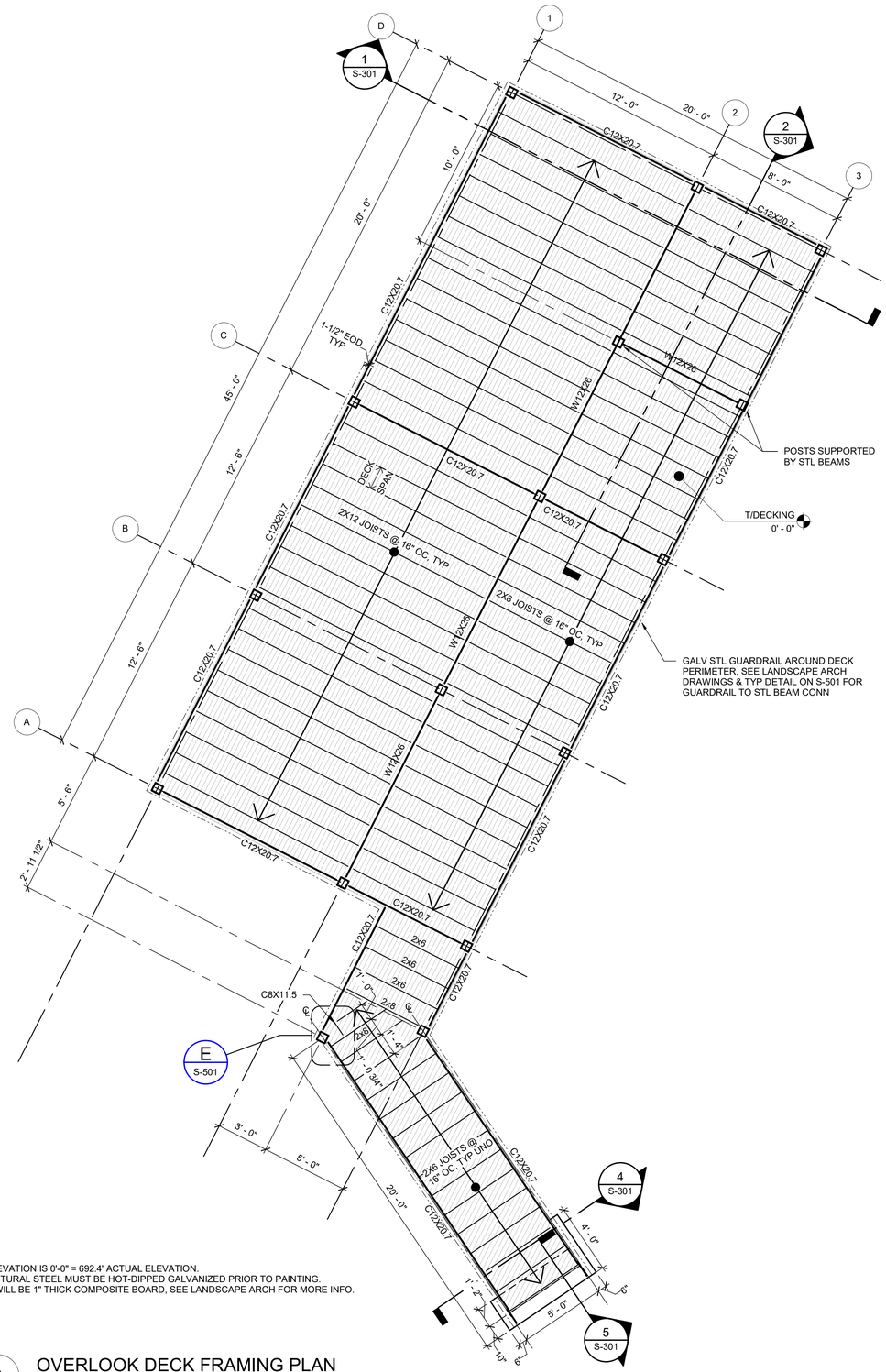
PLAN NOTES:
1. DATUM ELEVATION IS 0'-0" = 692.4' ACTUAL ELEVATION.
2. OVERLOOK DECK FND SUPPORTS WILL BE 24" DIA CONC SONOTUBE FNDS REINF W/ (11) #6 VERT BARS AND #4 TIES @ 12" OC, TYP. SEE CONC PIER TYP DETAIL ON S-501.
3. ALL STRUCTURAL STEEL MUST BE HOT-DIPPED GALVANIZED PRIOR TO PAINTING.

PLAN NORTH

1 OVERLOOK DECK FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

0' 2' 4' 8'



PLAN NOTES:
1. DATUM ELEVATION IS 0'-0" = 692.4' ACTUAL ELEVATION.
2. ALL STRUCTURAL STEEL MUST BE HOT-DIPPED GALVANIZED PRIOR TO PAINTING.
3. DECKING WILL BE 1" THICK COMPOSITE BOARD, SEE LANDSCAPE ARCH FOR MORE INFO.

PLAN NORTH

2 OVERLOOK DECK FRAMING PLAN

SCALE: 1/4" = 1'-0"

0' 2' 4' 8'

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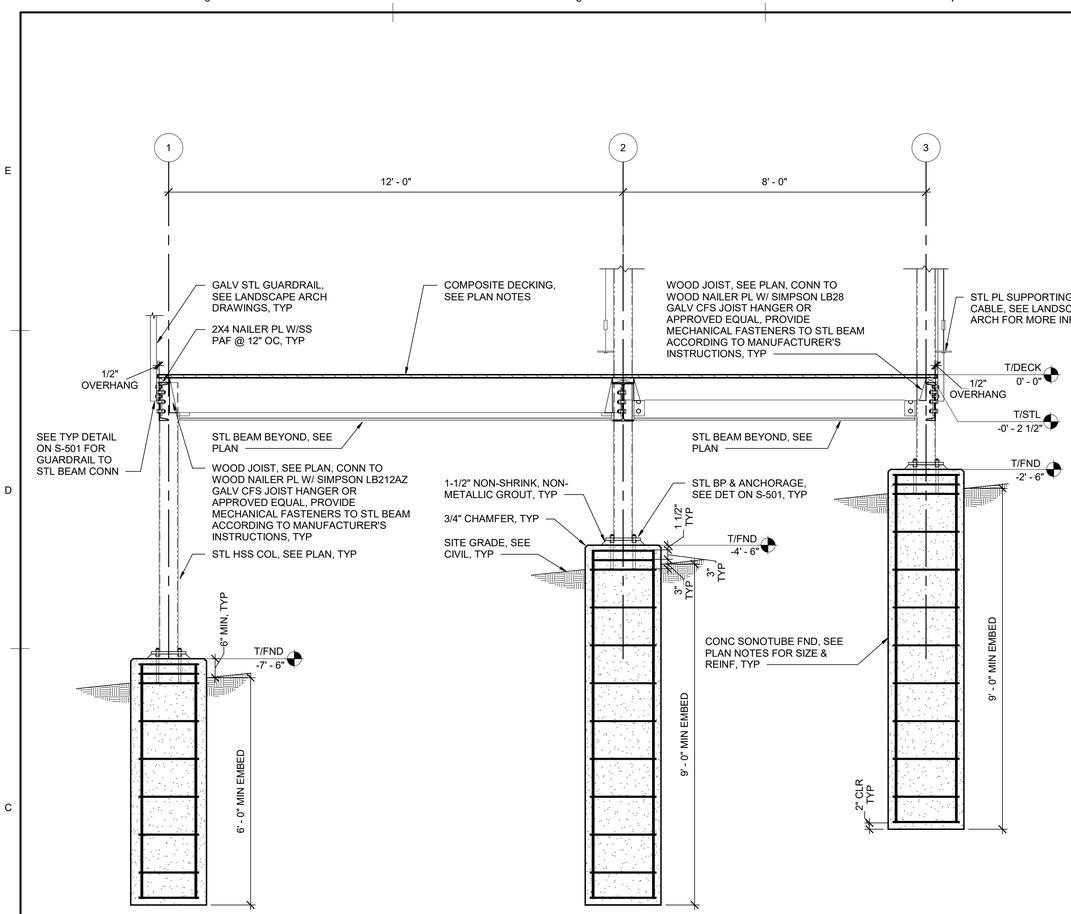
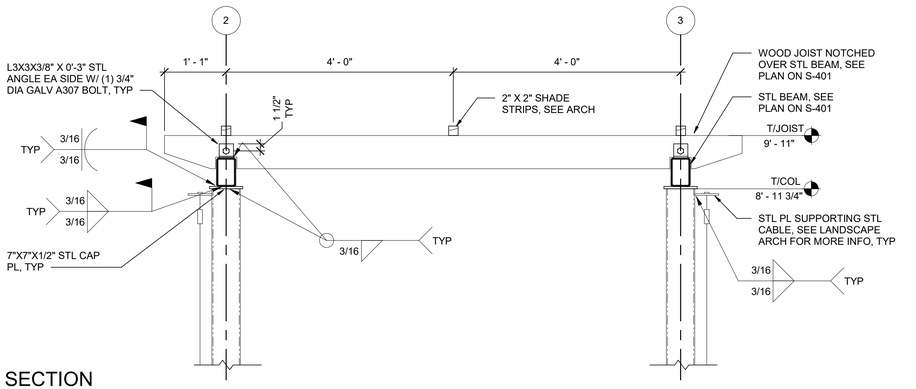
OVERLOOK DECK FOUNDATION PLAN & FRAMING PLAN

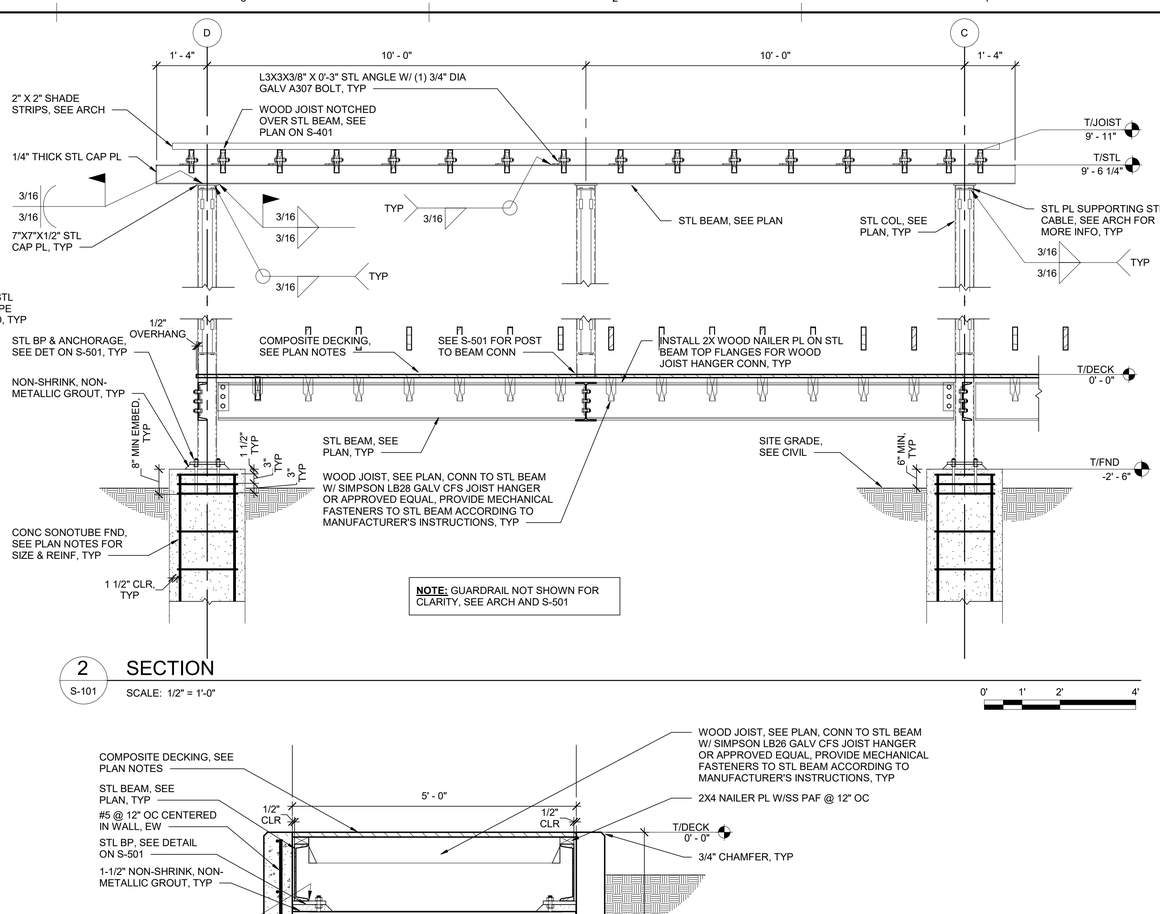
SHT. NO.	REV. NO.
S-101	



1 SECTION
S-101
SCALE: 1/2" = 1'-0"

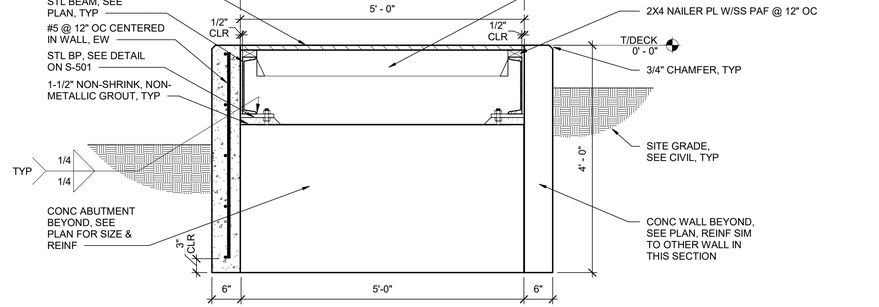


3 SECTION
S-401
SCALE: 3/4" = 1'-0"

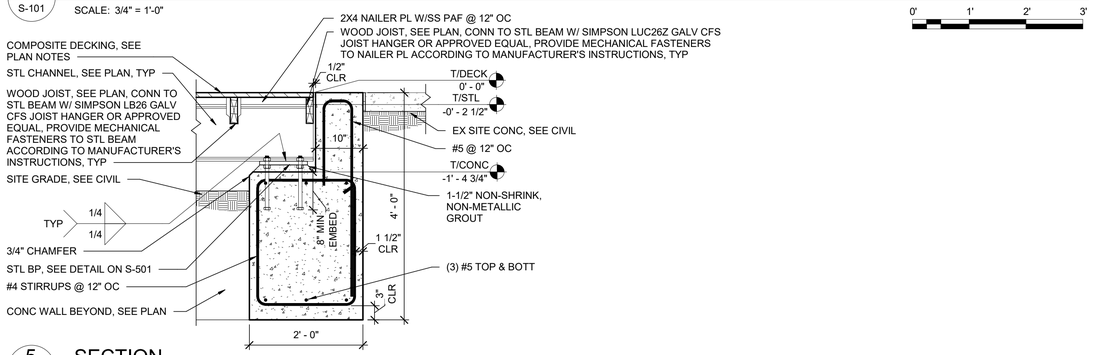


NOTE: GUARDRAIL NOT SHOWN FOR CLARITY, SEE ARCH AND S-501

2 SECTION
S-101
SCALE: 1/2" = 1'-0"



4 SECTION
S-101
SCALE: 3/4" = 1'-0"



5 SECTION
S-101
SCALE: 3/4" = 1'-0"

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SHEET TITLE
STRUCTURAL SECTIONS

SHT. NO. S-301
REV. NO.

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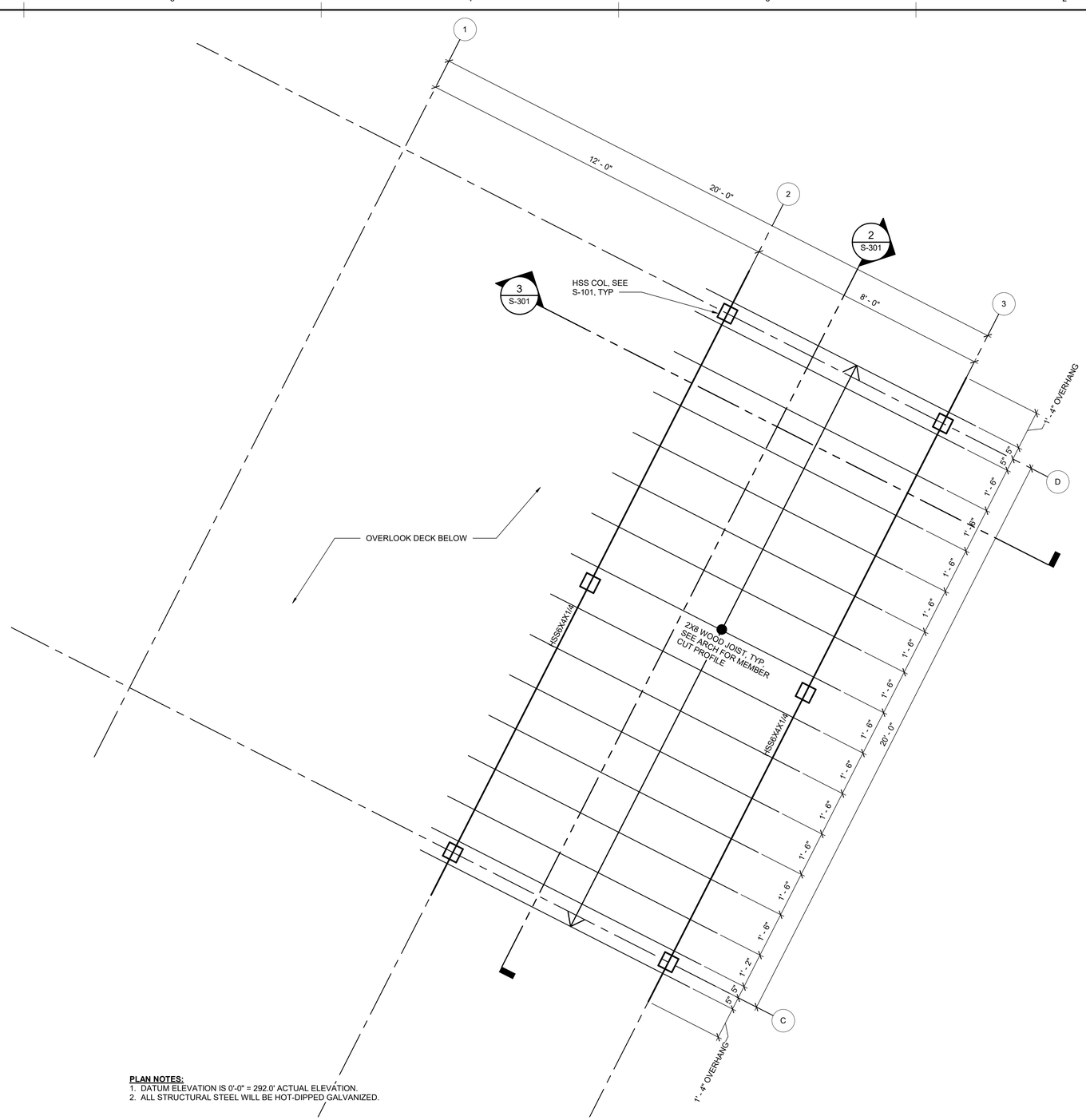

PLAN NOTES:
1. DATUM ELEVATION IS 0'-0" = 292.0' ACTUAL ELEVATION.
2. ALL STRUCTURAL STEEL WILL BE HOT-DIPPED GALVANIZED.

PLAN NORTH

1 PERGOLA FRAMING PLAN

SCALE: 1/2" = 1'-0"

0' 1' 2' 4'

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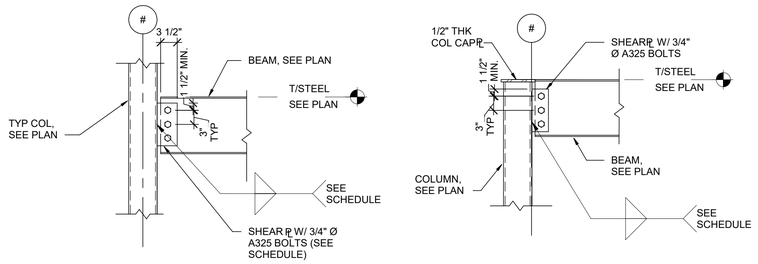
ENLARGED PLAN - PERGOLA FRAMING PLAN

SHT. NO.	REV. NO.
S-401	

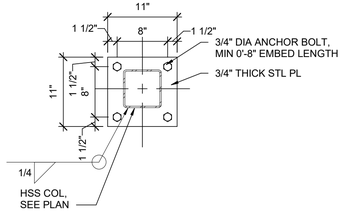


BEAM CONNECTION SCHEDULE			
NOMINAL DEPTH OF FRAMING BEAM	NO. OF BOLT ROWS	SHEAR PLATE THICKNESS	ATTACHMENT WELD (EA. SIDE)
C12, W12	3	3/8"	1/4"

NOTE: (1) ALL BOLTS TO BE GALV 3/4" DIA A325 BOLTS

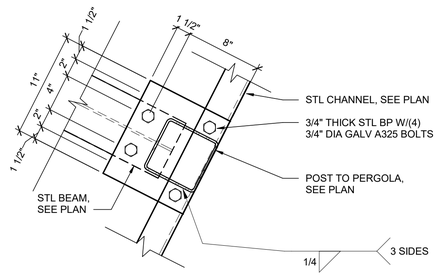
A DETAIL - TYPICAL BEAM TO COL AND BEAM TO BEAM CONNECTION

NOT TO SCALE



B DETAIL - TYP COL BP

NOT TO SCALE

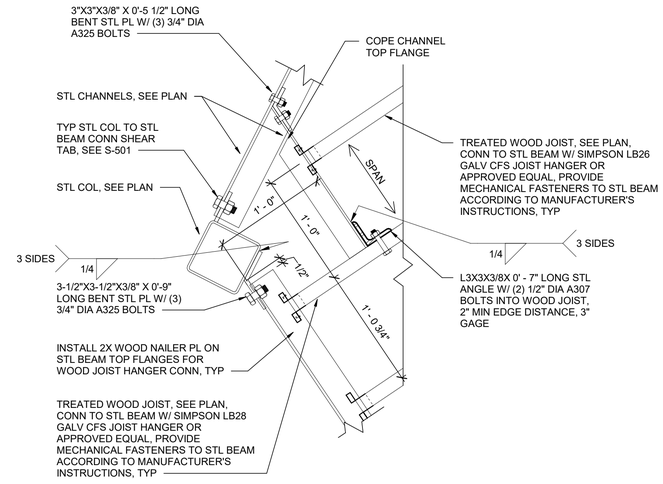


C PERGOLA POST TO BEAM CONN

NOT TO SCALE

D DETAIL - GUARDRAIL CONNECTION

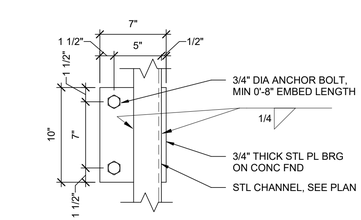
NOT TO SCALE



NOTE: COMPOSITE DECK NOT SHOWN FOR CLARITY, SEE PLAN ON S-101

E DETAIL - STL BENT PL IRREGULAR CONNECTIONS

NOT TO SCALE



F DETAIL - CHANNEL BASEPLATE

NOT TO SCALE

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TYPICAL STRUCTURAL DETAILS

SHT. NO.	REV. NO.
S-501	

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