SPR1401-0004

LYNCHBURG CITY STADIUM

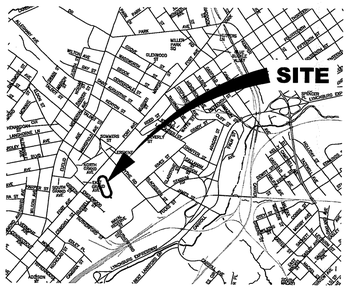
FOOTBALL FIELD IMPROVEMENTS

TURF REPLACEMENT

LYNCHBURG, VIRGINIA

JANUARY 24, 2014

REVISED: FEBRUARY 18, 2014



VICINITY MAP

NOT TO SCALE

LIST OF DRAWINGS

SHEET NUMBER	SHEET TITLE
2 G-001	COVER SHEET
2 C-101	EXISTING CONDITIONS DEMOLITION AND E & S PLAN
2 C-102	SITE IMPROVEMENTS PLAN
2 C-103	GRADING & STORMWATER PLAN
C-301	CROSS SECTIONS
2 C-302	EROSION & SEDIMENT CONTROL NARRATIVE & DETAILS
2 C-303	STORMWATER MANAGEMENT SUMMARY

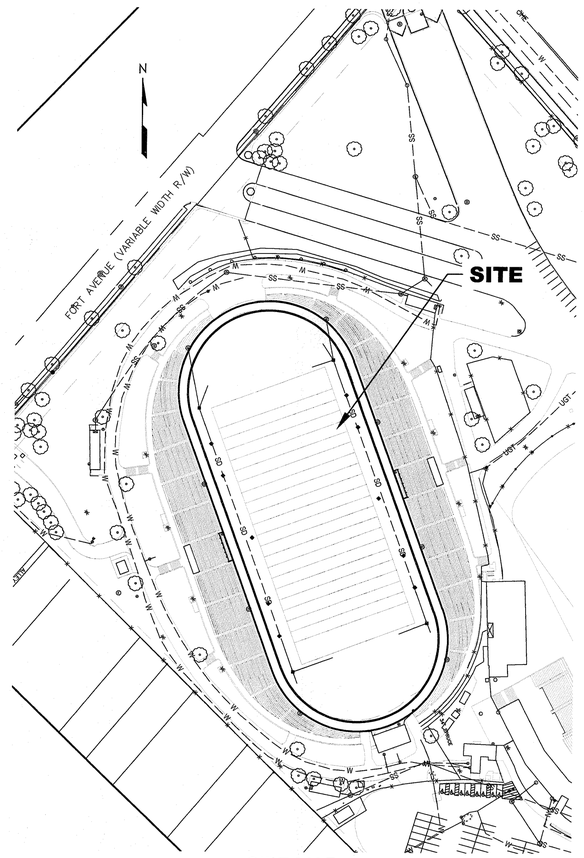
LEGEND

EXISTING

	BENCHMARK		WATER MANHOLE
	CONTROL POINT - IRON PIN SET		FIRE HYDRANT
IP(F)	IRON PIN FOUND		WATER METER
PIPE(F)	PIPE FOUND	WV	WATER VALVE
	DROP INLET	MW	MONITORING WELL
	CURB INLET		YARD HYDRANT
	STORM MANHOLE	SH	SPRINKLER HEAD
	STORM INLET		COMMUNICATIONS MANHOLE
	STORM CLEANOUT	TPED	TELEPHONE PEDESTAL
	SANITARY MANHOLE		TELEPHONE POLE
	SANITARY CLEANOUT	CPED	CABLE TV PEDESTAL
	ELECTRIC MANHOLE		GAS MANHOLE
	POWER POLE	GV	GAS VALVE
	LIGHT POLE		SIGN
	JUNCTION BOX		BOLLARD
	GUY WIRE		
	GUY POLE		TREE
	SIGNAL POLE		
			BUSH

LEGEND

DESIGNED	EXISTING	
		EDGE OF PAVEMENT
		GUARD RAIL
		FENCELINE
10	10	MAJOR CONTOURS
		MINOR CONTOURS
	CATV	UNDERGROUND CABLE
	FO	FIBER OPTIC
	T	OVERHEAD TELEPHONE
	T	UNDERGROUND TELEPHONE
	NG	UNDERGROUND NATURAL GAS
	OHE	OVERHEAD POWER
UGE	UGE	UNDERGROUND POWER
SS	SS	SANITARY LINE
SD	SD	STORM LINE
W	W	WATER LINE
		PROPERTY LINE



SITE MAP

SCALE: 1" = 200'

GENERAL NOTES:

1. EXISTING UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATION AND DEPTHS PRIOR TO LAYING PIPE.
2. THE CONTRACTOR SHALL CONTACT MISS UTILITY , THE CITY ENVIRONMENTAL REVIEWER AND THE CITY'S CONSTRUCTION COORDINATOR AT LEAST 48 HOURS PRIOR TO EXCAVATION.
3. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF THE CITY OF LYNCHBURG MANUAL OF SPECIFICATIONS AND STANDARD DETAILS, THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS AND ROAD AND BRIDGE STANDARDS, 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.
4. THE CONTRACTOR SHALL BE FULL LIABLE FOR ANY DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY CONSTRUCTION OPERATION AND SHALL RESTORE DAMAGED PROPERTY TO EXISTING OR BETTER CONDITION AT NO ADDITIONAL COST TO OWNER.
5. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED AND PROTECTED WITH EROSION CONTROL PRACTICES.
6. VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED AND MAINTAINED FOR ALL DISTURBED AREAS IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS AND THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED BEFORE EXCAVATION BEGINS.
7. THE CONTRACTOR SHALL REPLACE ALL DISTURBED SURFACES IN KIND, INCLUDING PAVEMENT, STONE, DITCHES, MAILBOXES, SHRUBS, ETC.
8. ALL PROPERTY PINS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A CERTIFIED LAND SURVEYOR.
9. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CONFINED SPACE ENTRY REGULATIONS.
10. MAINTAIN OVERHEAD AND UNDERGROUND ELECTRICAL, TELEPHONE, SANITARY, AND GAS SERVICES AND ALL OTHER UNDERGROUND UTILITIES DURING ENTIRE CONSTRUCTION PERIOD. OUTAGES WILL NOT BE ALLOWED.
11. TOTAL DISTURBED AREA WILL BE 2.95 ACRES. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY TO OBTAIN A STORMWATER VSMP PERMIT FOR CONSTRUCTION ACTIVITIES. UPON RECEIPT OF THE VSMP PERMIT REGISTRATION STATEMENT, THE APPLICANT IS TO SUBMIT A COPY TO THE ENVIRONMENTAL REVIEWER.
12. A LAND DISTURBANCE PERMIT WILL BE REQUIRED FOR THIS PROJECT.

RECEIVED
FEB 25 2014
COMMUNITY DEVELOPMENT

OWNER INFORMATION:

OWNER: CITY OF LYNCHBURG

CONTACT: KAY FRAZIER
PARKS & RECREATION
301GROVE STREET
LYNCHBURG, VA 24501

PHONE: (434) 455-5858
EMAIL: kay.frazier@lynchburgva.gov

ENGINEER INFORMATION:

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

CONTACT: E. THOMAS HAMMOCK, JR, PE
PHONE: (434) 947-1632
EMAIL: thammock@wileywilson.com

"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: 39385

PRINTED NAME AND TITLE: E. THOMAS HAMMOCK, JR DATE: 2/6/14

"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: Parks Manager

PRINTED NAME AND TITLE: Andrew H Reed DATE: 2/19/14

CITY ENGINEER: _____ for JEN DATE: 2/25/14

UTILITIES ENGINEER: N/A DATE:

TRC: _____ DATE: 2/26/14

E&S: _____ DATE: 2/25/14

IMPERVIOUS AREA STATISTICS

EXISTING IMPERVIOUS AREA = 2.40 ACRES
PROPOSED IMPERVIOUS AREA = 2.95 ACRES
TOTAL POST IMERVIOUS AREA = 4.95 ACRES

PROJECT NAME & LOCATION:

TURF REPLACEMENT
CITY STADIUM FOOTBALL FIELD, LYNCHBURG, VIRGINIA

NOTE:
IT IS ANTICIPATED THAT THE PLANNED IMPROVEMENT WILL PRODUCE 1800 C.Y. OF EXCESS MATERIAL. A PLAN ADDENDUM IS REQUIRED, PRIOR TO THE ISSUANCE OF ANY LAND DISTURBANCE PERMIT, IDENTIFYING THE LOCATION, ADEQUATE STABILIZATION MEASURES AND AN APPROVED PERMIT FOR ANY OFF_SITE BORROW/FILL/WASTE SITE(S) THAT WILL BE USED IN CONJUNCTION WITH THIS PROJECT. THE ULTIMATE DESTINATION OF ALL DEBRIS FROM DEMOLITION MUST BE IDENTIFIED AT THE PRE_CONSTRUCTION CONFERENCE.

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phone 434.947.1601 | fax 434.947.1601 | web wileywilson.com

COMMONWEALTH OF VIRGINIA
E. THOMAS HAMMOCK, JR.
Lic. No. 39385
2/6/14
PROFESSIONAL ENGINEER

LYNCHBURG CITY STADIUM
FOOTBALL FIELD IMPROVEMENTS
TURF REPLACEMENT
LYNCHBURG, VIRGINIA

MRK	DATE	REVISION DESCRIPTION
2	2/18/14	ADDED OUTFALL LINE, RPZ, AND MODIFIED STORM SYSTEM OUTLET
1	2/6/14	REVISED PER TRC COMMENTS DATED 2/3/14

COMM NO: 214006.00
DATE: FEBRUARY 6, 2014
DRAWN: RDL DESIGN: ETH
CHECK: ETH

SHEET TITLE
COVER SHEET

SHT. NO. G-001 REV. NO. 2

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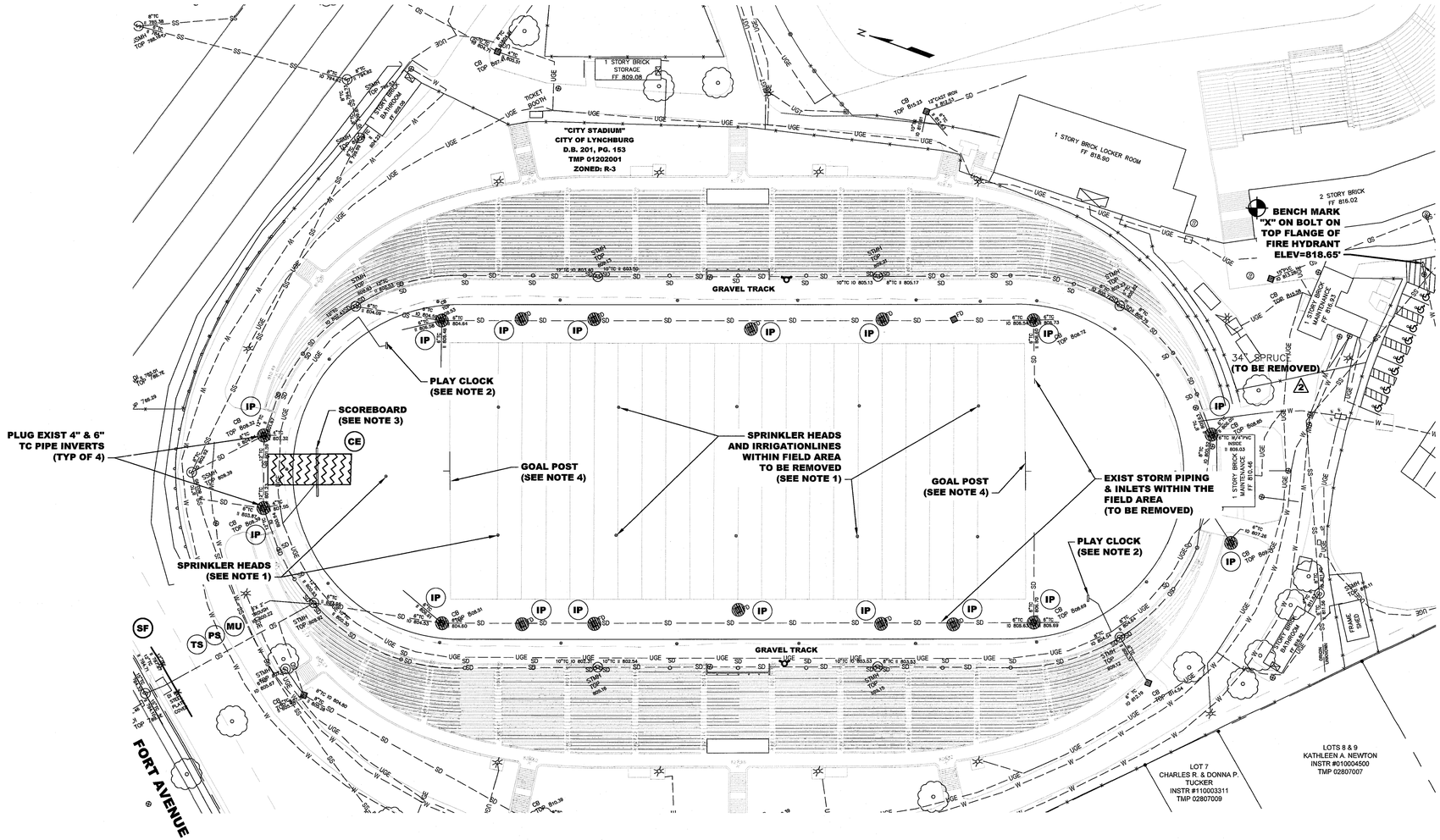

DEMOLITION NOTES

1. DISCONNECT IRRIGATION MAIN FEED FROM WATER MAIN, CAP END. THE CITY OF LYNCHBURG WILL REMOVE THE SPRINKLER HEADS, BUT THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING THE SPRINKLER LINES.
2. EXISTING TIME CLOCKS TO REMAIN IN THEIR CURRENT LOCATION.
3. EXISTING SCOREBOARD TO BE REMOVED. NEW SCOREBOARD TO BE INSTALLED AT A LOCATION DETERMINED BY THE OWNER.
4. REMOVE AND REPLACE EXISTING GOAL POSTS.
5. THE CITY OF LYNCHBURG WILL REMOVE AND PALLETIZE THE EXISTING ATHLETIC FIELD TURF TO BE USED AS SOD PRIOR TO THE BEGINNING OF CONSTRUCTION.
6. PROTECT ALL UTILITIES, STRUCTURES, AND TREES DURING DEMOLITION AND CONSTRUCTION THAT ARE NOT IDENTIFIED TO BE REMOVED.
7. ALL DEBRIS FROM CLEARING AND DEMOLITION SHALL BE REMOVED FROM CITY STADIUM'S PROPERTY, AT THE CONTRACTOR'S EXPENSE.
8. THE DEMOLITION PLAN IDENTIFIES ITEMS TO BE REMOVED AND PROTECTED. INCIDENTAL REMOVALS ARE NOT SHOWN. THE CONTRACTOR IS REQUIRED TO REVIEW ALL PLANS AND SPECIFICATIONS AND COORDINATE REMOVAL ASPECTS OF ALL WORK NECESSARY TO COMPLETE THE PROJECT.
9. ONLY CLEAN EARTH AND ROCK MATERIAL SHALL BE USED FOR CONSTRUCTION.
10. PRIOR TO DEMOLITION OR DISCONNECT OF ELECTRICITY, CONTRACTOR SHALL VERIFY EQUIPMENT OTHER THAN THAT SERVICING ITEMS TO BE REMOVED OR RELOCATED.
11. CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND UTILITIES, STAIRS, AND DRIVEWAYS. DAMAGE OCCURRING AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED / REPLACED AT THE CONTRACTOR'S EXPENSE.
12. CAP UTILITY LINES TO REMAIN WITHIN PROJECT LIMITS.
13. THE PLANS SHOW KNOWN SUBSURFACE STRUCTURES AND ABOVE-GROUND STRUCTURES BELIEVED TO BE WITHIN THE PROJECT'S LIMITS. EXACT LOCATIONS MAY VARY FROM THE LOCATIONS INDICATED.
14. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING SUBSURFACE STRUCTURES, UTILITIES AND PIPES. CALL MISS UTILITY BEFORE DIGGING.

0 20' 40' 80'
SCALE: 1" = 40'

APPROVED
CITY ENGINEER: N/A DATE:
UTILITIES ENGINEER: N/A DATE:

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LYNCHBURG CITY STADIUM FOOTBALL FIELD IMPROVEMENTS TURF REPLACEMENT

LYNCHBURG, VIRGINIA

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DATE: FEBRUARY 6, 2014
DRAWN: RDL DESIGN: ETH
CHECK: ETH

SHEET TITLE
EXISTING CONDITIONS DEMOLITION AND E & S PLAN

SHT. NO. C-101 REV. NO. 2

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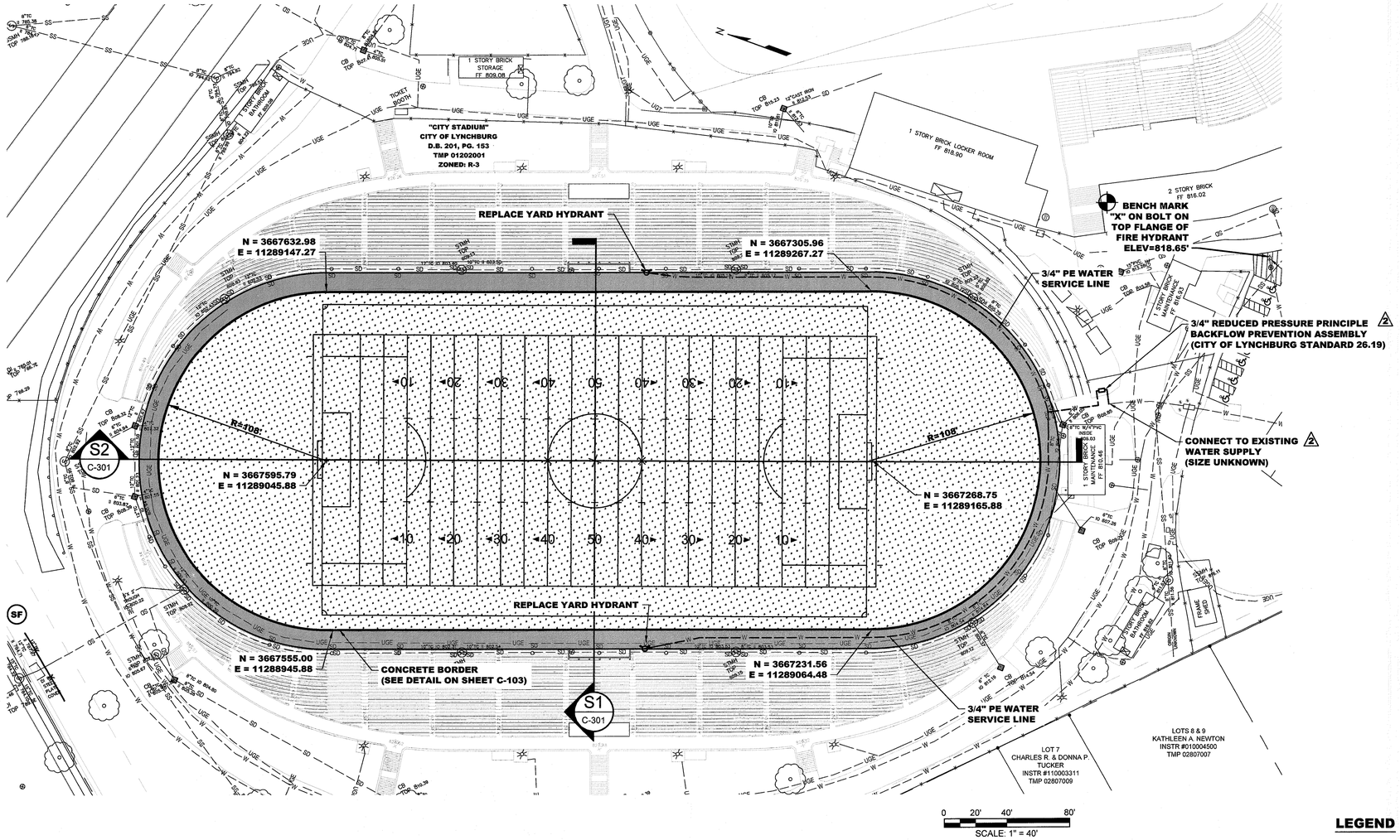

LEGEND

SYNTHETIC FIELD SURFACING

ASPHALT OVERLAY, 1 1/2" SM-9.5A

LAYOUT AND MATERIALS NOTES

1. VERIFY ALL SITE CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS PRIOR TO COMMENCEMENT OF WORK. NOTIFY OWNER OF ANY DISCREPANCIES OR IRREGULAR CONDITIONS.
1. SOCCER FIELD OVERALL DIMENSIONS ARE 348' X 198'.
2. FOOTBALL FIELD OVERALL DIMENSIONS ARE 360' X 160'.
3. FIELD CENTERLINE BOTH LONGITUDINALLY AND SIDE TO SIDE SHALL BE APPROVED BY OWNER PRIOR TO COMMENCEMENT OF WORK AND PRIOR TO INSTALLATION OF SYNTHETIC TURF.
4. CONTRACTOR TO SUBMIT SHOP DRAWING SHOWING ALL FIELD MARKINGS, DIMENSIONS, LOGOS, ETC. FOR APPROVAL.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FOOTBALL AND SOCCER FIELD LAYOUT PAINTING.
6. THE CONTRACTOR SHALL MAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP RECORD DRAWING PLANS FOR ALL UTILITIES INSTALLED OR ENCOUNTERED.
7. THE CONTRACTOR SHALL PROVIDE SMOOTH TRANSITIONS BETWEEN NEW WORK AND EXISTING CONDITIONS.
8. ALL ANGLES ARE 90° UNLESS OTHERWISE NOTED.
9. ALL DIMENSIONS INVOLVING CURBS ARE TAKEN FROM THE FACE OF CURB, AT FINISHED GRADE. CURB AT TRACK PERIMETER TO BE SET FLUSH WITH SYNTHETIC TURF MATERIAL AND ADJACENT TO PAVEMENT.

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SHEET TITLE

SITE IMPROVEMENTS PLAN

APPROVED CITY ENGINEER: N/A DATE:

SHT. NO. C-102 REV. NO. 2

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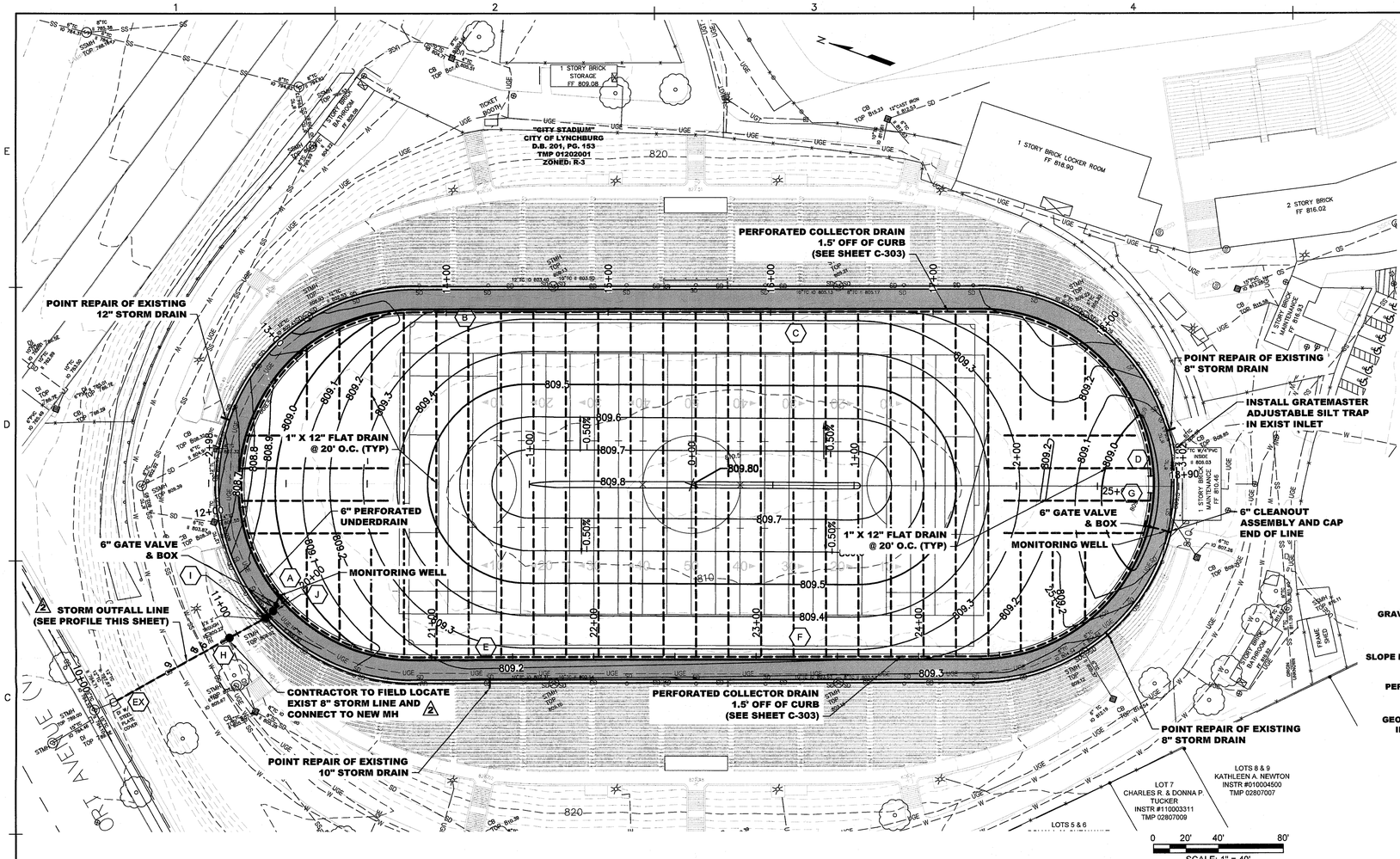
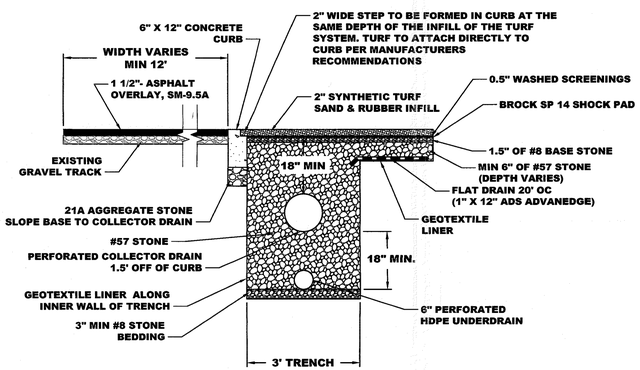
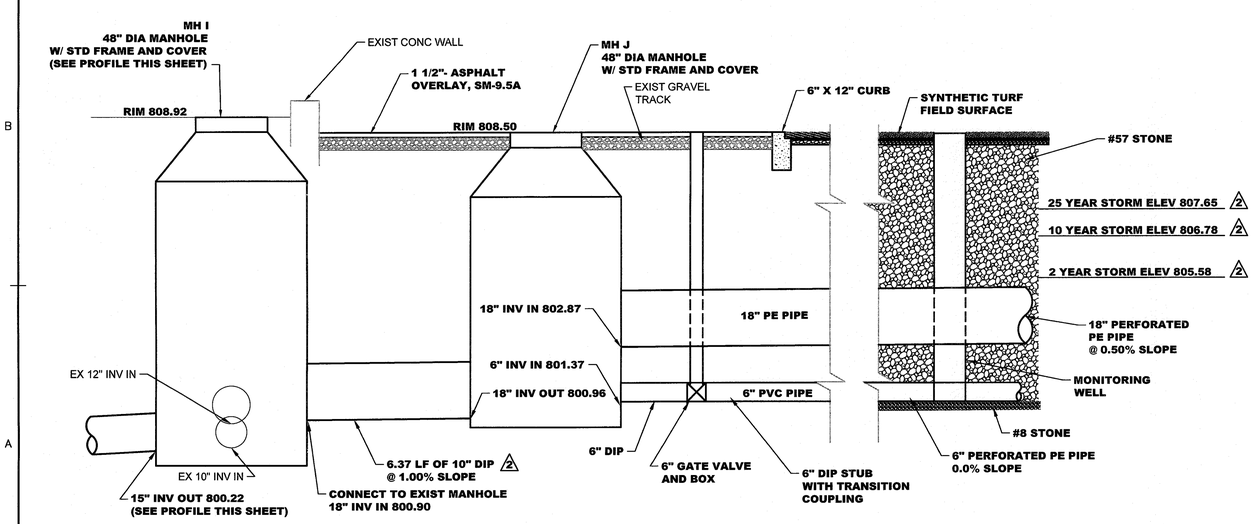


NOTES

1. CONTOURS WITHIN TRACK AND FIELD AREA REPRESENT FINAL GRADES AFTER SYNTHETIC MATERIAL INSTALLATION. SEE TYPICAL SECTIONS TO DETERMINE SUBGRADE ELEVATIONS.
2. BLEND PROPOSED GRADES SMOOTHLY WITH ADJACENT EXISTING ELEVATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF SURFACE DRAINAGE DURING PROJECT CONSTRUCTION.
4. CONTRACTOR SHALL VERIFY SUBGRADE FIELD CONDITIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO COMMENCING TRACK AND FIELD CONSTRUCTION.
5. FINISH GRADES ARE SYMMETRICAL ABOUT THE FIELD CENTERLINE UNLESS OTHERWISE NOTED.
6. SUBGRADE SHALL NOT VARY FROM FINISH SURFACE ELEVATION BY MORE THAN ONE-TENTH FOOT.
7. PROTECT EXISTING UTILITIES, DRAINAGE STRUCTURES, VEGATION, WALKWAYS, AND DRIVEWAYS DURING GRADING.
8. CENTERLINE OF FIELD GRADE SHALL NOT BE A PRONOUNCED "PEAK" PRIOR TO TURF INSTALLATION. CONTRACTOR SHALL "ROUND OFF" FINISHED GRADE AT CENTERLINE IMMEDIATELY PRIOR TO TURF INSTALLATION.
9. ENDS OF STRIP DRAINS SHALL BE CAPPED.
10. STRIP DRAINS TO BE INSTALLED DIRECTLY ON TOP OF GEOTEXTILE FABRIC, LAID FLAT ON SIDE.
11. PERIMETER DRAINS SHALL BE PERFORATED HDPE PIPE AS SHOWN.
12. POINT REPAIRS TO THE EXISTING STORM LINE SHALL CONSIST OF EXCAVATING DOWN TO THE EXISTING STORM LINE, SAWCUT AND REMOVE APPROXIMATELY SIX (6) LINEAR FEET OF EXISTING LINE, REPLACE WITH LIKE SIZED PVC PIPE AND CONNECT WITH FERNCO COUPLINGS. SURFACE FEATURES INCLUDING CONCRETE, HAND RAILS, AND BLEACHERS REQUIRED TO BE REMOVED SHALL REPLACED IN KIND.

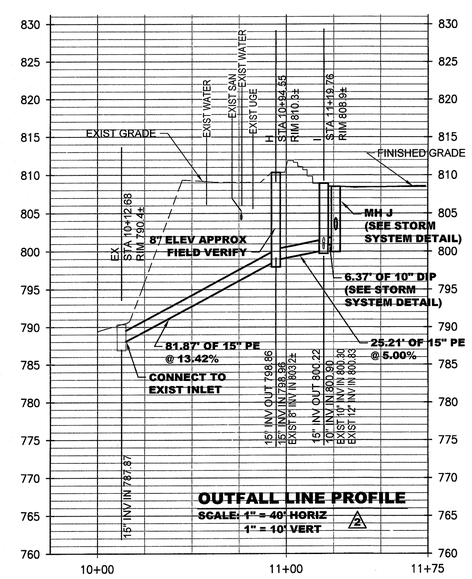


TYPICAL SECTION
SCALE: 1/2" = 1'-0"



STORM SYSTEM DETAIL
SCALE: 1/2" = 1'-0"

0 1' 2' 4'
SCALE: 1/2" = 1'-0"



OUTFALL LINE PROFILE
SCALE: 1" = 40' HORIZ
1" = 10' VERT

VERT: 1" = 10'
0 10' 20'
0 40' 80'
HORIZ: 1" = 40'

STRUCTURE DEFLECTION CHART

FROM	TO	DEFLECTION
EX	H	6°53'51" LT
H	I	0°00'41" RT
H	EXIST 8"	99°55'44" RT
I	J	12°56'39" LT
I	EXIST 12"	102°18'27" LT
I	EXIST 10"	76°11'33" RT
J	A	0°00'02" RT

APPROVED
CITY ENGINEER: N/A DATE:
UTILITIES ENGINEER: N/A DATE:

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SHEET TITLE
GRADING & STORMWATER PLAN

SHT. NO. C-103 REV. NO. 2

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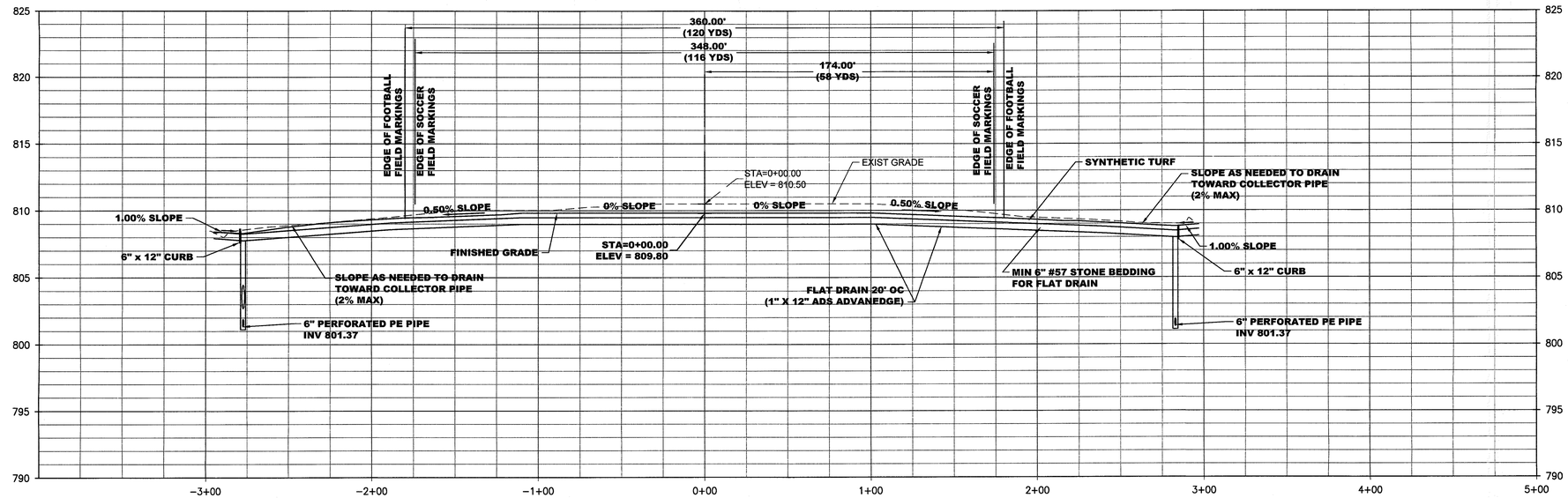
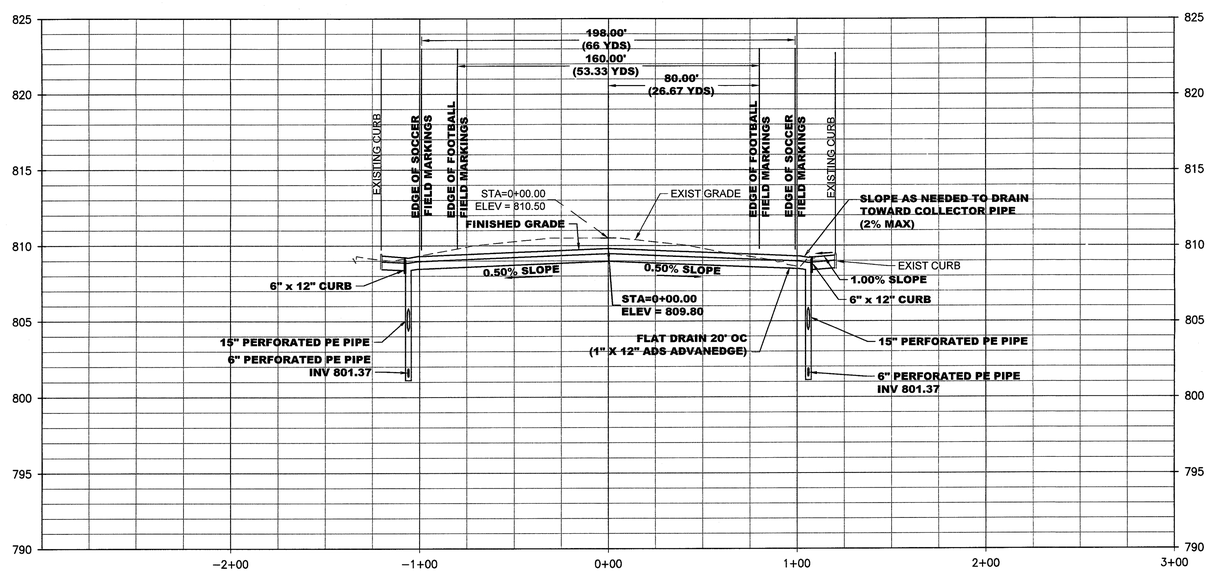


S2 CROSS SECTION
C-102 SCALE: 1" = 40'



S1 CROSS SECTION
C-102 SCALE: 1" = 40'

VERT: 1" = 5'
0 5' 10'
0 40' 80'
HORIZ: 1" = 40'

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SHEET TITLE

CROSS SECTIONS

SHT. NO. C-301
REV. NO. 1

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EROSION & SEDIMENT CONTROL NARRATIVE

I. PROJECT DESCRIPTION
THIS PURPOSE OF THIS PROJECT IS TO CONVERT AN EXISTING GRASS FOOTBALL FIELD TO A SYNTHETIC TURF FIELD. THE TOTAL AMOUNT OF LAND DISTURBANCE REQUIRED IS APPROXIMATELY 3 ACRES

II. EXISTING SITE CONDITIONS
THIS SITE CONSISTS OF MOSTLY GRASSED AREAS WITH SMALL AREAS OF CONCRETE, ASPHALT, AND GRAVEL.

III. ADJACENT PROPERTIES
THE PROJECT SITE IS LOCATED IN THE LYNCHBURG CITY STADIUM COMPLEX AT THE INTERSECTION OF FORT AVENUE AND WYTHE ROAD.

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 TYPE UDORTHENTS. THE UDORTHENTS-URBAN LAND COMPLEX SOIL SERIES CONSISTS OF VERY SHALLOW TO DEEP SOILS IN URBAN LANDS. THESE SOILS ARE SO INTERMINGLED THAT THEY ARE CLASSIFIED AS ONE. THESE SOILS HAVE BEEN GRADED, CUT AND FILLED FOR URBAN AREAS AND CONSTRUCTION. THESE SOILS MAINLY CONSIST OF CLAYEY OR LOAMY MATERIAL THAT IS SHALLOW OVER LIMESTONE OR SHALE BEDROCK. URBAN LAND MAKES UP OVER 99 PERCENT OF THE PROJECT AREA. THIS SOIL GROUP CONSISTS OF COMMERCIAL, INDUSTRIAL AND RESIDENTIAL DEVELOPMENTS COVERING MUCH OF THE AREA. THIS GROUP ALSO INCLUDES AREAS DISTURBED DURING CONSTRUCTION, BASEMENTS, STREETS, PIPELINES, PARKING LOTS AND OTHER STRUCTURES. THE PROPERTIES AND CHARACTERISTICS OF THESE SOILS HAVE BEEN CHANGED BY URBAN USE. SLOPES ARE GENERALLY 2-15 PERCENT.

VI. CRITICAL AREAS
THERE ARE NO CRITICAL AREAS ADDRESSED BY THIS EROSION AND SEDIMENT CONTROL PLAN. CARE WILL BE TAKEN TO PROVIDE PROTECTIVE MEASURES AS NECESSARY AND TO ENSURE THAT ALL SEDIMENT WILL BE TRAPPED ON SITE.

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. SAFETY FENCE (SAF), SPEC. 3.01: A SAFETY FENCE SHALL BE PROVIDED AS SHOWN ON THE PLANS TO PROHIBIT ACCESS BY THE PUBLIC.
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. STORM DRAIN INLET PROTECTION (IP), SPEC. 3.07: STORM DRAIN INLET PROTECTION SHALL BE PROVIDED FOR INLETS AS SHOWN ON THE PLANS.
4. DUST CONTROL (DC), SPEC. 3.39: PROVIDE DUST CONTROL IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON-SITE AND OFF-SITE DAMAGE IS LIKELY TO OCCUR IF PREVENTIVE MEASURES ARE NOT TAKEN.

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. SODDING (SO), SPEC. 3.33:
5. MULCHING (MU), SPEC. 3.35: ALL PERMANENT AND TEMPORARY SEEDING SHALL BE STRAW MULCHED IMMEDIATELY UPON COMPLETION OF SEED APPLICATION. STRAW ON STEEP SLOPES SHALL BE ANCHORED UNLESS SEEDING WAS PROVIDED BY MEANS OF A HYDROSEEDING, IN WHICH CASE, MULCHING IS NOT REQUIRED.

C. MINIMUM STANDARDS
MS-1. STABILIZATION OF DENUDED AREAS:
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT OR UNDISTURBED FOR LONGER THAN 30 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:
DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3. PERMANENT VEGETATIVE COVER:
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, IN THE OPINION OF THE E&S INSPECTOR, IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND INHIBIT EROSION.

MS-4. TIMING AND STABILIZATION OF SILT TRAPPING MEASURES:
SEDIMENT BASINS AND TRAPS, STORM INLET PROTECTION, SILT FENCING, 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. STABILIZATION OF EARTHEN STRUCTURES:
STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6. SEDIMENT BASINS AND TRAPS:
SEDIMENT TRAPS AND BASINS SHALL BE CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED.
A. THE MINIMUM CAPACITY OF A SEDIMENT TRAP SHALL BE 134-CUBIC YARDS PER ACRE OF DRAINAGE AREA, AND SHALL CONTROL A DRAINAGE AREA OF LESS THAN 3-ACRES.
B. THE MINIMUM CAPACITY OF A SEDIMENT BASIN SHALL BE 134-CUBIC YARDS PER ACRE OF DRAINAGE AREA, AND SHALL CONTROL A DRAINAGE AREA OF 3-ACRES OR GREATER.

MS-7. CUT AND FILL SLOPES:
CUT AND FILL SLOPES SHALL BE 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:
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:
WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10. STORM SEWER INLET PROTECTION:
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:
BEFORE NEWLY CONSTRUCTED STORM WATER 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:
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:
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 MATERIALS SHALL BE PROVIDED.

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

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

MS-16. UNDERGROUND UTILITIES:
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. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES, EXCEPT FOR ANY DIVERSION DITCHES.
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 OFFSITE PROPERTY.
D. TRENCH BACKFILL MATERIAL SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
F. ALL APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH AT ALL TIMES.

MS-17. CONSTRUCTION ACCESS ROUTES:
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, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT 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:
ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALLS BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL E&S 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:
PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATES OF STORM WATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION.

A. MAINTENANCE: ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED, AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AT THE END OF EACH DAY AND AFTER EVERY RAINFALL EVENT.
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. 3.01) SAFETY FENCE SHALL BE CHECKED REGULARLY FOR DAMAGE. CARE SHALL BE TAKEN TO SECURE ALL ACCESS POINTS AT THE END OF EACH WORKING DAY.
4. (SPEC. 3.02) PROVIDE FOR EQUIPMENT WASHING AS NEEDED TO PREVENT THE TRANSPORT OF SOIL ONTO EXISTING ASPHALT ROADWAYS. ANY SEDIMENT ON THE PAVEMENT SHALL BE REMOVED IMMEDIATELY.
5. (SPEC. 3.03) BOTH TEMPORARY AND PERMANENT ROADS AND PARKING AREAS MAY REQUIRE PERIODIC TOP DRESSING WITH NEW GRAVEL.
6. (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.
7. (SPEC. 3.08) AGGREGATE FOR CULVERT INLET PROTECTION, IF OPTIONAL STONE COMBINATION IS USED IN LIEU OF SILT FENCE, SHALL BE REPLACED OR CLEANED WHEN INSPECTION REVEALS THAT CLOGGED VOIDS ARE CAUSING PONDING PROBLEMS WHICH INTERFERE WITH ON-SITE CONSTRUCTION.
8. (SPEC. 3.28) SUBSURFACE DRAINS SHALL BE KEPT CLEAN AND FREE OF DEBRIS. SURFACE INLETS SHALL BE KEPT OPEN AND FREE OF SEDIMENT AND OTHER DEBRIS. WHERE HEAVY VEHICLES CROSS DRAINS, THE LINE SHOULD BE CHECKED TO ENSURE THAT IT IS NOT CRUSHED.
9. (SPEC. 3.39) WATER SHALL BE USED ON DENUDED AREAS THAT CONSTRUCTION VEHICLES TRAVERSE TO MINIMIZE DUST.

VIII. STORMWATER MANAGEMENT
MANAGEMENT OF RUNOFF DURING CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONSTRUCTION PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION.

A. HYDROLOGICAL ANALYSIS
STORMWATER RUNOFF RATES ARE COMPUTED FOR THE 2 AND 10-YEAR STORM EVENTS USING THE RATIONAL METHOD. THESE RUNOFF RATES ARE USED TO DESIGN STORMWATER CONVEYANCE CHANNELS AND PIPES.

B. DRAINAGE AREA CHARACTERISTICS
RUNOFF COEFFICIENTS (C)
DRAINAGE SUBAREAS FOR THIS PROJECT CONSIST OF A MIXTURE OF WOODED AND PAVED AREAS. A C-FACTOR OF 0.3 IS USED FOR WOODED AREAS, AND A C-FACTOR OF 0.9 IS USED FOR PAVED AREAS. WEIGHTED C-FACTORS AND INCREMENTAL RUNOFF RATES ARE COMPUTED FOR EACH DRAINAGE SUBAREA, AND ACCUMULATED ALONG THE DITCH SEGMENT TO DETERMINE REQUIRED DITCH LINING MATERIALS AND MINIMUM CHANNEL DEPTHS.

C. TIME OF CONCENTRATION (Tc)
TIME OF CONCENTRATION IS DETERMINED USING SCS TR-55 METHODOLOGY. A MINIMUM Tc OF 5-MINUTES IS USED FOR ALL SMALL SUBAREAS. THE RAINFALL INTENSITY FOR RUNOFF CALCULATIONS USING THE RATIONAL METHOD IS DETERMINED USING THE I-D-F CURVE FOR LYNCHBURG, VIRGINIA. AS PER THE VDOT METHOD, RAINFALL INTENSITY FOR DITCH SEGMENTS AFTER A MINIMUM Tc OF 5-MINUTES IS ACHIEVED, BEYOND THE INITIAL DITCH SEGMENT, IS THE PREVIOUS DITCH SEGMENT INTENSITY MINUS 0.1-INCHES PER HOUR, UNLESS THE CONTRIBUTING DRAINAGE SUBAREA HAS A GREATER Tc.

D. HYDRAULIC ANALYSIS
ALL PIPES AND CHANNELS ARE DESIGNED TO ACCOMMODATE A 2-YEAR STORM FOR EROSION RESISTANCE, AND A 10-YEAR STORM FOR CAPACITY.

E. WATER QUALITY ANALYSIS
MANAGEMENT OF RUNOFF DURING CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONSTRUCTION PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION.

IX. SOIL STOCKPILES AND BORROW AREAS
FILL MATERIAL SHALL 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. A SUPPLEMENTAL PLAN SHALL BE SUBMITTED TO THE CITY'S ENVIRONMENTAL REVIEWER FOR APPROVAL.

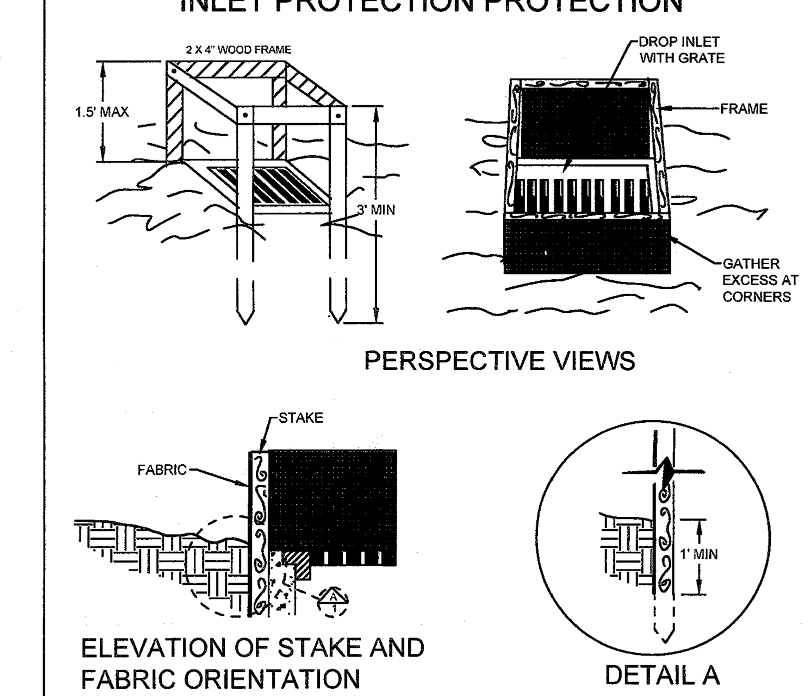
X. SEQUENCE OF CONSTRUCTION
1. CONSTRUCT THE TEMPORARY STONE CONSTRUCTION ENTRANCES.
2. INSTALL EROSION AND SEDIMENT CONTROL PRACTICES AS IS PRACTICABLE.
3. CLEAR THE PLANNED DISTURBED AREA AND REMOVE DEBRIS TO A SUITABLE LOCATION.
4. INSTALL UTILITIES, INLET AND OUTLET PROTECTION AS IS PRACTICABLE.
5. BRING GRADES TO DESIRED ELEVATION.
6. APPLY SURFACE TREATMENT AS DESIGNED.
7. EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL RELEASED BY THE GOVERNING AGENCY.
8. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
9. STABILIZE AFFECTED AREAS.

XI. CONTACT PARTY FOR E&S IMPLEMENTATION
PROPERTY OWNER

EROSION AND SEDIMENT CONTROL LEGEND

SPEC.	DESCRIPTION	SYMBOL
3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
3.05	SILT FENCE	SF (X— X— X)
3.07	STORM DRAIN INLET PROTECTION	IP
3.31	TEMPORARY SEEDING	TS
3.32	PERMANENT SEEDING	PS
3.35	MULCHING	MU
3.39	DUST CONTROL	DC

SILT FENCE DROP INLET SILT FENCE DROP INLET PROTECTION PROTECTION



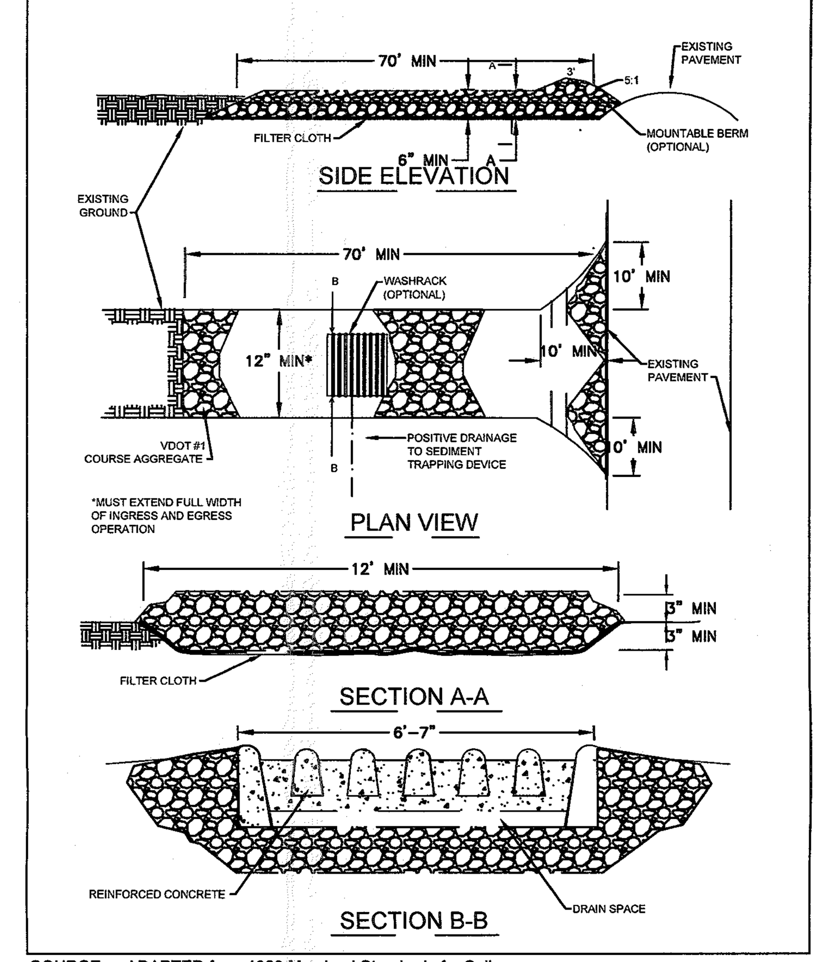
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

SOURCE: N.C. Erosion and Sediment Control Planning and Design Manual, 1988

STORM DRAIN INLET PROTECTION (IP)
NOT TO SCALE — PLATE 3.07-1

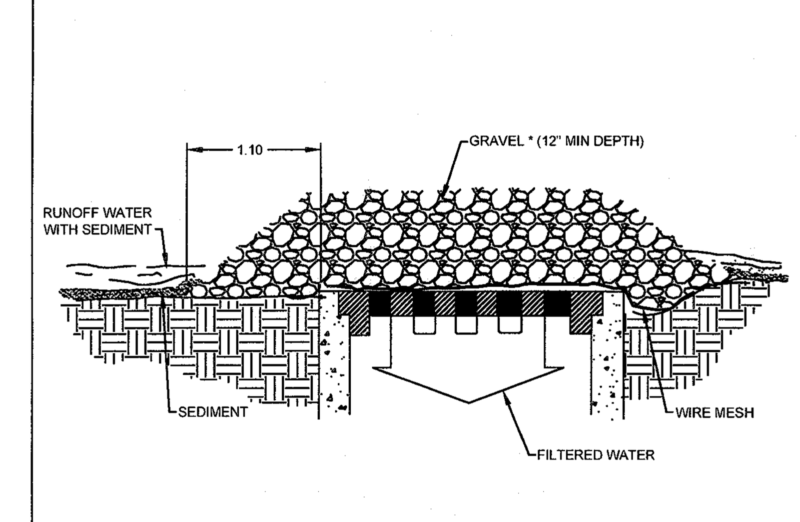
STONE CONSTRUCTION ENTRANCE



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

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

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER



SPECIFIC APPLICATION

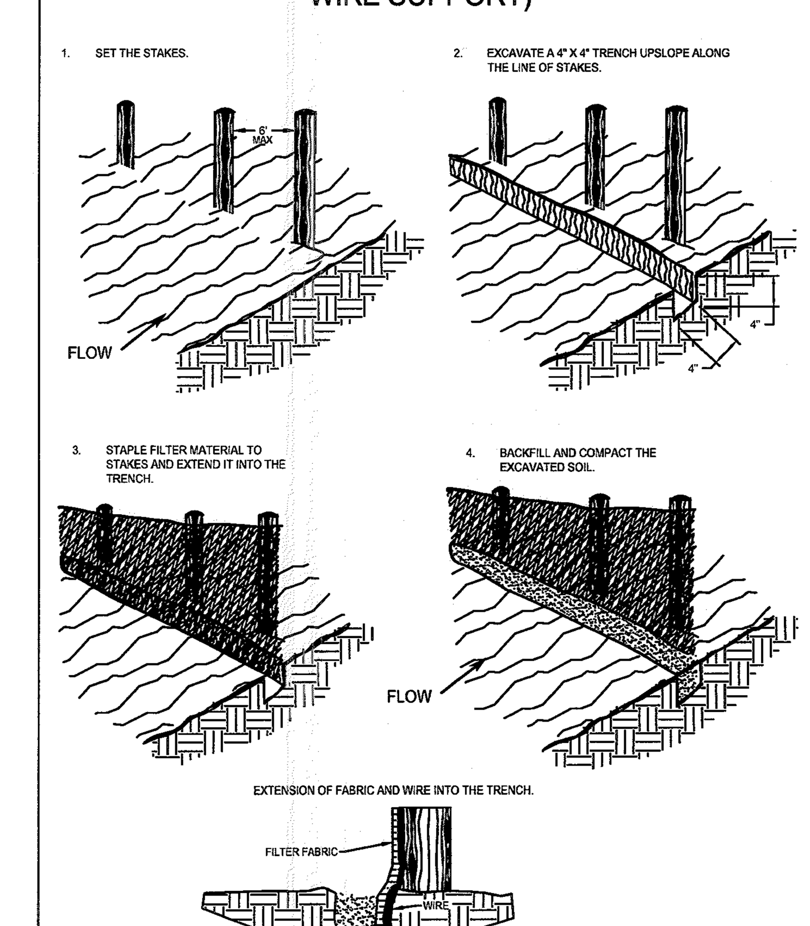
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

SOURCE: VA. DSWC

STORM DRAIN INLET PROTECTION (IP)
NOT TO SCALE — PLATE 3.07-2

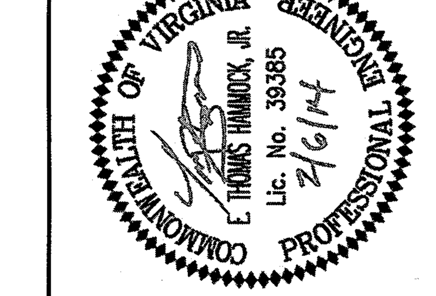
CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)



SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood & Wyant

SILT FENCE (SF)
NOT TO SCALE — PLATE 3.05-1

Wiley|Wilson®
Constant Progress
127 Nationwide Drive, Lynchburg, Virginia 24502-4272
phone 434.947.1901 | fax 434.947.1601 | web wileywilson.com



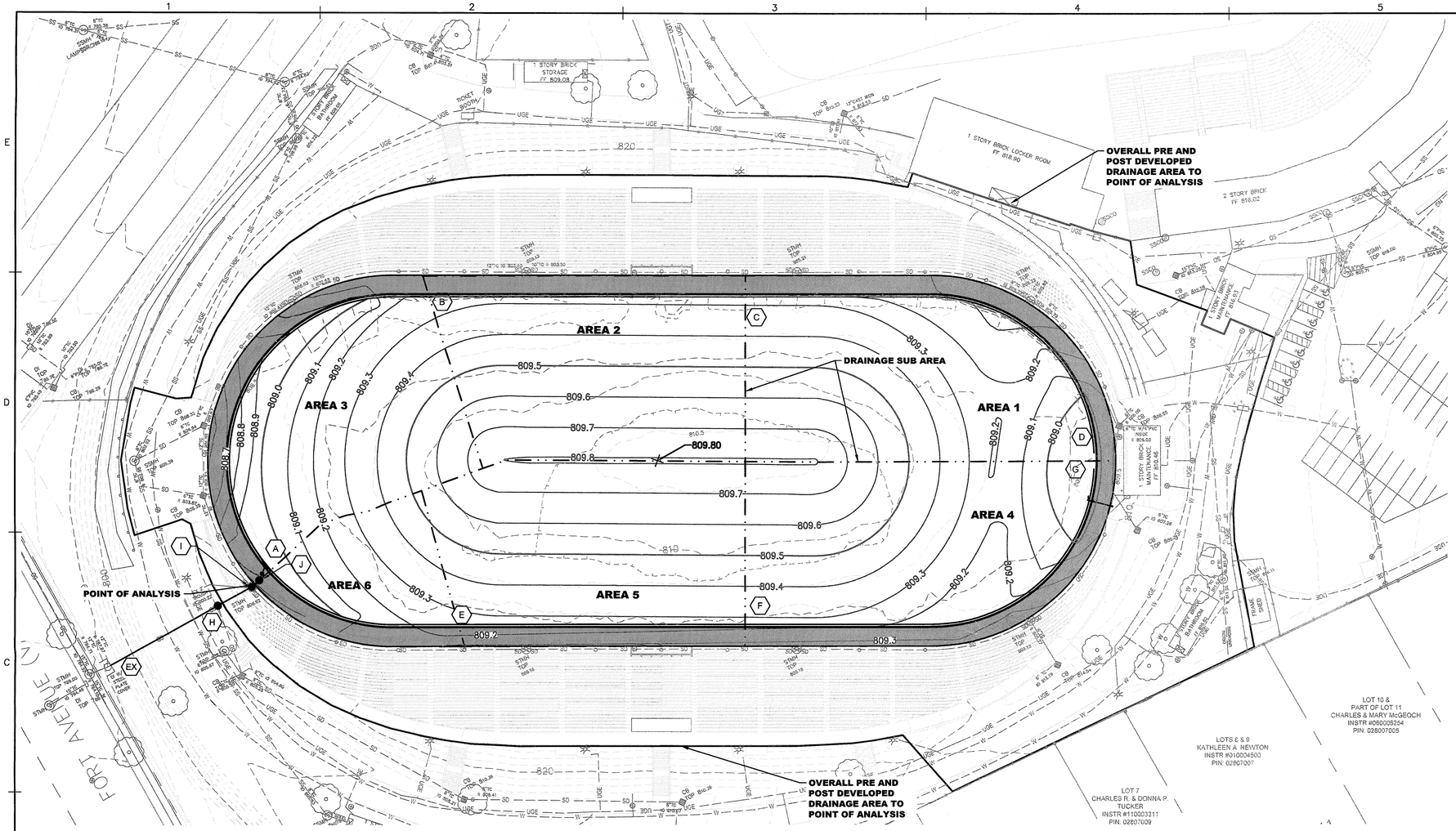
LYNCHBURG CITY STADIUM
FOOTBALL FIELD IMPROVEMENTS
TURF REPLACEMENT

LYNCHBURG, VIRGINIA

MRK	DATE	REVISION DESCRIPTION
2	2/18/14	ADDED OUTFALL LINE, RPZ, AND MODIFIED STORM SYSTEM OUTLET
1	2/6/14	REVISED PER TRC COMMENTS DATED 2/3/14

COMM NO:	214006.00
DATE:	FEBRUARY 6, 2014
DRAWN:	RDL
DESIGN:	ETH
CHECK:	ETH
SHEET TITLE	EROSION & SEDIMENT CONTROL NARRATIVE & DETAILS
SHT. NO.	C-302
REV. NO.	2

X:\2014\214006 VMDO LYBG STADIUM TURF INSTALL\CADICIVIL\214006C-302.DWG 2/19/2014 4:23 PM



STORMWATER MANAGEMENT NARRATIVE

A. DESCRIPTION OF STORMWATER QUANTITY/QUALITY MEASURES

STORMWATER RUNOFF FLOWS INTO AN EXISTING STORM DRAIN SYSTEM IN THE STAND AREA AS WELL AS A NEW UNDERDRAIN SYSTEM IN THE FIELD. A PERFORATED COLLECTOR PIPE ALONG THE PERIMETER OF THE FIELD CARRIES THE FLOW TO AN EXISTING STORM MANHOLE AT THE NORTHWEST CORNER OF THE STADIUM.(POINT OF ANALYSIS)

B. HYDROLOGIC ANALYSIS

STORMWATER RUNOFF RATES ARE COMPUTED FOR THE 2, 10, 25 AND 100-YEAR STORM EVENTS USING THE RATIONAL METHOD. THESE RUNOFF RATES ARE USED TO DESIGN PIPES AND THE ADDITIONAL STORAGE VOLUME NECESSARY TO ATTENUATE THE POST DEVELOPED RUNOFF RATES TO BELOW PREDEVELOPED RATES.

C. DRAINAGE AREA CHARACTERISTICS

RUNOFF COEFFICIENTS (C): DRAINAGE SUBAREAS FOR THIS PROJECT CONSIST OF A MIXTURE OF GRASS, PAVED, CONCRETE AND SYNTHETIC TURF AREAS. A C-FACTORFOR 0.25 IS USED FOR GRASS AREAS; A C-FACTOR OF 0.90 IS USED FOR PAVED, CONCRETE AND SYNTHETIC TURF AREAS..

WEIGHTED C-FACTORS (OR CN FACTORS) AND INCREMENTAL RUNOFF RATES ARE COMPUTED FOR EACH DRAINAGE SUBAREA, AND ACCUMULATED ALONG THE STORM SYSTEM SEGMENT TO DETERMINE REQUIRED SYSTEM SIZES.

D. TIME OF CONCENTRATION (Tc)

TIME OF CONCENTRATION IS DETERMINED USING SCS TR-55 METHODOLOGY. A MINIMUM Tc OF 5-MINUTES IS USED FOR ALL SMALL SUBAREAS. THE RAINFALL INTENSITY AND 24-HOUR RAINFALL DEPTHS FOR RUNOFF CALCULATIONS USING THE RATIONAL METHOD AND TR-55 IS DETERMINED USING THE VDOT'S 05-03 AND HDA 05-04. TIME OF CONCENTRATION FOR PIPE SEGMENTS AFTER A MINIMUM Tc OF 5-MINUTES IS ACHIEVED, BEYOND THE INITIAL PIPE SEGMENT, IS THE PREVIOUS TIME OF CONCENTRATION PLUS TIME IN PIPE (APPROXIMATED AS 0.1 MINUTES).

E. HYDRAULIC ANALYSIS

ALL PIPES ARE DESIGNED TO ACCOMMODATE A 2-YEAR STORM FOR EROSION RESISTANCE, AND A 10-YEAR STORM FOR CAPACITY.

F. TOTAL SITE AREA = 5.27 Ac.

TOTAL IMPERVIOUS COVER = 4.95 Ac.

% IMPERVIOUS COVER = 4.95/5.27 = 94%

DESIGN FLOW SUMMARY				
feature IDs	Units	EX	EX	EX
Design event frequency	years	2	10	25
Rainfall intensity	in/hr	4.13	5.61	6.52
SCS 24-hr Precipitation	in			
PRE DEVELOPMENT				
Time of concentration	Minutes	5.0	5.0	5.0
Composite runoff factor		0.59	0.59	0.59
TR-55 Curve Number				
Drainage area	acres	5.27	5.27	5.27
Design flow	cfs	12.89	17.52	20.35
POST DEVELOPMENT				
Time of concentration	Minutes	5.0	5.0	5.0
Composite runoff factor		0.86	0.86	0.86
TR-55 Curve Number				
Drainage area	acres	5.27	5.27	5.27
Design flow	cfs	18.72	25.44	29.54

LYNCHBURG CITY STADIUM — DATE: 2/18/2014

MANNINGS 0.011

FROM POINT	TO POINT	AREAS (INLETS)	INCREM. AREA	TOTAL AREA (AC)	INLET TIME (MIN)	PIPE TIME (MIN)	TIME OF CONC. (MIN)	INTENSITY (IN/HR)	CUMM COFF.	DISCHARGE (CFS)	SLOPE (FT/FT)	THEO. DIA. (IN)	SIZE (IN)	PIPE TYPE	V FULL (FT/SEC)	LENGTH (FT)	SEGMENT TIME (MIN)	UPPER ELEV. (FT)	LOWER ELEV. (FT)
D	C	1		0.59	5.0	0.0	5.0	5.61	0.90	2.98	0.0050	12.0	12	PE	3.8	278.61	1.2	806.62	805.23
C	B	1,2	0.52	1.11	5.0	1.2	6.2	5.30	0.90	5.30	0.0050	14.9	15	PE	4.4	205.28	0.8	805.23	804.20
B	A	1-3	0.52	1.63	5.0	2.0	7.0	5.12	0.90	7.50	0.0050	17.0	18	PE	5.0	265.76	0.9	804.20	802.87
G	F	4		0.59	5.0	0.0	5.0	5.61	0.90	2.98	0.0050	12.0	12	PE	3.8	278.79	1.2	805.94	804.55
F	E	4,5	0.52	1.11	5.0	1.2	6.2	5.30	0.90	5.30	0.0050	14.9	15	PE	4.4	186.55	0.7	804.55	803.62
E	A	4,5,6	0.21	1.32	5.0	1.9	6.9	5.14	0.90	6.10	0.0050	15.7	18	PE	5.0	130.82	0.4	803.62	802.97
A	J	1-6		2.95	5.0	3.2	8.2	4.86	0.90	12.91	0.0100	18.3	18	PE	7.0	10	0.0	802.97	802.87
J	I	1-6		2.95	5.0	3.2	8.2	4.86	0.90	12.91	0.0100	18.3	10	DIP	4.7	6.37	0.0	800.96	800.90
I	H	1-6		2.95	5.0	3.2	8.2	4.86	0.90	12.91	0.0500	13.5	15	PE	13.9	25.21	0.0	800.22	798.96
H	EX	1-6, 8"	0.40	3.35	5.0	3.2	8.2	4.86	0.85	13.85	0.1342	11.5	15	PE	22.8	81.87	0.1	798.86	787.87

OUTFALL LINE

Wiley|Wilson
Constant Progress
127 Nationwide Drive, Lynchburg, Virginia 24502-4272
phone 434.947.1801 | fax 434.947.1801 | web wileywilson.com

COMMONWEALTH OF VIRGINIA
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2/6/14
PROFESSIONAL ENGINEER

LYNCHBURG CITY STADIUM FOOTBALL FIELD IMPROVEMENTS TURF REPLACEMENT

LYNCHBURG, VIRGINIA

MRK	DATE	REVISION DESCRIPTION
2	2/18/14	ADDED OUTFALL LINE, RP2, AND MODIFIED STORM SYSTEM OUTLET
1	2/6/14	REVISED PER TRC COMMENTS DATED 2/3/14

COMM NO: 214006.00
DATE: FEBRUARY 6, 2014
DRAWN: RDL DESIGN: ETH
CHECK: ETH
SHEET TITLE
STORMWATER MANAGEMENT SUMMARY
SHT. NO. C-303 REV. NO. 2

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