MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL OF CHARLOTTESVILLE

SDP2022-48 | AMENDMENT TO SDP2020-52
TAX MAP 75, PARCEL 66
TAX MAP 76, PARCEL 17

ALBEMARLE COUNTY, VIRGINIA

LEGEND

EXISTING	NEW	DESCRIPTION
		BOUNDARIES
		BENCHMARK
		SITE PROPERTY LINE
		ADJACENT PROPERTY LINE
		BUILDING SETBACK
		PARKING SETBACK
		SITE TEXT
10	10	PARKING COUNT
		TOPOGRAPHY
		INDEX CONTOUR
		INTERVAL CONTOUR
311.5 x	x^top	SPOT ELEVATION
311.5 TC x	x^TC	TOP OF CURB ELEVATION
311.5 TW x	x^TW	TOP OF WALL ELEVATION
311.5 BW x	x^BW	BOTTOM OF WALL ELEVATION
		STREAM
		STREAM BUFFER
		100 YEAR FLOODPLAIN
		BUILDING
		BUILDING
		RETAINING WALL
		STAIRS
		EDGE OF PAVEMENT
		ROAD CENTERLINE
		FRONT OF CURB
		BACK OF CURB
		CG-12 TRUNCATED DOME
		SIDEWALK
		BIKE PARKING
		HANDICAP ACCESSIBLE AISLE
		HANDICAP PARKING
		MATERIAL
		CONCRETE
		RIPRAP
		ASPHALT
		EC-2 MATTING
		EC-3 MATTING
		WETLAND
		TREELINE
X	X	FENCE
		UTILITY
		UTILITY POLE
		GUY WIRE
OHU	OHU	OVERHEAD UTILITY
UGU	UGU	UNDERGROUND UTILITY
		STORM
		STORM MANHOLE
		DROP INLET
		STORM SEWER
RD	RD	ROOF DRAIN
		SANITARY
		SANITARY MANHOLE
		SANITARY SEWER MAIN
S	S	SANITARY SEWER LATERAL
		WATER
W	W	WATER LINE
		WATER METER
		WATER METER VAULT
		FIRE HYDRANT
		FIRE DEPARTMENT CONNECTION
		GAS
GAS	GAS	GAS LINE
		EASEMENTS
		CONSTRUCTION
		GRADING
		ACCESS
		SIGHT DISTANCE
		UTILITY
		STORMWATER FACILITY MAINTENANCE
		STORMWATER ACCESS
		DRAINAGE
		SANITARY
		WATERLINE
		GASLINE

NOTE:
1. THE SIZE OF THE SYMBOLS MAY VARY FROM WHAT IS SHOWN.

OWNER/DEVELOPER

Regents School of Charlottesville Inc.
3045 Ivy Road
Charlottesville, Virginia 22903

PLAN PREPARATION

Shimp Engineering, P.C.
912 East High Street
Charlottesville, VA 22902
(434) 227-5140

ZONING

EC - Entrance Corridor
R1 - Residential
Overlays: Airport Impact Area, Flood Hazard, Steep Slopes - Managed, Steep Slopes - Preserved
SP201800011 approved on September 18, 2019 permitting a private school use on the site and a central sewerage system, for up to 13 total connections
WPO2020-28 approved on December 16, 2021
SDP2020-52 approved on April 18, 2022

MAGISTERIAL DISTRICT

Samuel Miller

SOURCE OF TITLE

DB 5237 P 251
DB 660 P 780 (plat)

SETBACKS

Front: 5'
Side: 10'
Rear: 20'

BUILDING HEIGHT

Maximum height not to exceed 35'

SOURCE OF BOUNDARY AND TOPOGRAPHY

Boundary is based on field survey by:
Dewberry Engineers Inc.
4805 Lake Brook Drive
Glen Allen, Virginia 23060
Provided on 05/11/2018, field verified by Justin Shimp, P.E. 10/22/2019
Topographic survey with two foot (2') contours provided by Quantum Spatial
Topography of four foot (4') contours provided by Albemarle County GIS.

BENCHMARK

Datum for topography is NAVD 88

FLOODZONE

These parcels lie within the 100-year floodplain, FEMA flood zone "A" as defined on FIRM map 51003C0268D, dated February 4, 2005.

RESERVOIR WATERSHED

This site is within the Moore's Creek Watershed and the creek shown is a tributary of Moore's Creek.
Wetlands have not been identified on these parcels.
This site is not within a watershed of a public water supply.

WATER & SANITARY SERVICES

This project lies within the ACSA jurisdictional area for both water and sewer. Access to existing water and sewer service is available.

ALBEMARLE COUNTY SERVICE AUTHORITY GENERAL WATER & SEWER NOTES

1. Work shall be subject to inspection by Albemarle County Service Authority inspectors. The Contractor will be responsible for notifying the proper service authority officials at the start of the work.
2. The Albemarle County Service Authority shall have access to use the airspace above the locations of construction for the flight of unmanned aerial vehicles for the purpose of imagery collection.
3. The location of existing utilities across the line of the proposed work are not necessarily shown on the plans and where shown, are only approximately correct. The contractors shall on his own initiative locate all underground lines and structures as necessary.
4. All materials and construction shall comply with the current edition of the general water and sewer construction specifications as adopted by the Albemarle County Service Authority.
5. Datum for all elevations shown in National Geodetic Survey.
6. The contractor shall be responsible for notifying "MISS UTILITY" (1-800-552-7001).
7. All water and sewer pipes shall have a minimum of 3.5 feet of cover measured from the top of pipe, over the centerline of pipe. This includes all fire hydrant lines, service laterals and water lines, etc.
8. All water and sewer appurtenances are to be located outside of roadside ditches.
9. Valves on deadend lines shall be rodded to provided adequate restraint for the valve during a future extension of the line.
10. Trees are not permitted in the ACSA easement.
11. The contractor shall be responsible to comply with the no-lead regulation regarding brass fittings effective January 4, 2014 (Senate Bill 3874 which amends the Safe Drinking Water Act).
12. The sewer lateral beyond the connection at the sewer main shall be private. The sewer lateral stub-out shall undergo the ACSA low-pressure air test to satisfy County testing requirements. Visual inspection of the sewer lateral stub=out shall be witnessed by the County Building Inspections Department. This inspection shall occur under an "Other Plumbing" permit which must be obtained by the contractor.
13. The sewer lateral beyond the connection at a manhole shall be private. Visual inspection and pressure testing of the sewer lateral shall be witnessed by the County Building Inspections Department. This inspection shall occur under an "Other Plumbing" permit which must be obtanied by the contractor.
14. The fire sprinkler main downstream of the gate valve is private. Visual inspection and testing of the fire sprinkler main downstream of the gate valve shall be witnessed by the County Building Inspections Department. This inspection shall occur under an "Other Plumbing" permit which must be obtained by the contractor.
15. All flushing of fire sprinklre mains shall not occur until approval is given by the ACSA.
16. Prior to backflow prevention device testing and the establishment of water service, all backflow prevention device installations shall meet the ACSA backflow requirements as detailed in Section 8 of the most recent revision of the ACSA Rules and Regulations.
17. A deed of easement and easement plat for the utility easements, approved by the ACSA, shall be recorded prior to any water and/or sewer service being established.

FIRE PREVENTION NOTES

1. A knox box is required on this property. The location of this knox box will be coordinated with the fire marshal's office.
2. ISO Needed Fire Flow for this site is 1,500 gpm.
3. Smoking shall be prohibited in areas where smoking makes conditions such as to make a smoking a hazard and these areas shall be designated with no smoking signs per Virginia Statewide Fire Prevention Code.
4. Areas where smoking can occur, shall have appropriate receptacles for discarded smoking materials per Virginia Statewide Fire Prevention Code.
5. Per the Virginia Statewide Fire Prevention Code, vehicular access for firefighting shall be provided at all construction and demolition sites, including access to within 100 feet of temporary or permanent fire department connections, and have no overhead wiring or other overhead obstructions lower than 13 ft. 6 inches; this access may be via permanent or temporary road, but shall be capable of supporting fire apparatus in all weather conditions.
6. Contractor shall ensure the street numbers are always plainly visible form the frontage street during construction per the Virginia Statewide Fire Code.
7. An approved water supply for firefighting operations shall be in place and available as soon as combustible materials arrive on site.
8. Waste and combustible debris shall be removed from the building at the end of each day and disposed of in accordance with the Virginia Statewide Fire Code.
9. Fire extinguishers shall be provided, with not less than one approved fire extinguisher at each stairwell, on all floor levels where combustible materials have accumulated, in every storage and construction shed and in areas of special; hazards, such as where flammable and combustible liquids are stored or used, in accordance with the Virginia Statewide Fire Code.
10. Operations involving the use of cutting and welding shall comply with the Virginia Statewide Fire Prevention Code and shall require a permit from the Albemarle County Fire Marshal's Office.

EXISTING USE

Vacant Land

PROPOSED USE

Private School (Grades K-12)

LAND USE SCHEDULE

EXISTING	Area	%
Building	0 SF	0%
Pavement	0 SF	0%
Sidewalk	0 SF	0%
Undeveloped	832,432 SF	100.0%
Total=	832,432 SF	(19.11 ac.)

PROPOSED	Area	%
Building	35,920 SF	4.3%
Pavement	40,025 SF	4.8%
Sidewalk	30,811 SF	3.7%
Undeveloped	725,676 SF	87.2%
Total=	832,432 SF	(19.11 ac.)

PARKING SCHEDULE

Private School Use: 90 spaces required per zoning determination
60 faculty spaces, 23 student drop off spaces, 4 handicap spaces, 3 guest spaces

Total 94 - 9'x18' spaces provided (includes 4 - van accessible spaces)
Overflow parking to be provided as part of a shared parking agreement with Trinity Presbyterian Church. Pedestrian path provided for access to church parking lot.

LIGHTING

Lighting shall be in accordance with SP201800011.

SIGNS

All signs and pavement shall conform with the latest edition of the MUTCD Guidelines.
A sign permit must be issued in accordance with the Albemarle County Sign Regulations prior to placement of any signs on-site. Contractor shall provide handicap signs as shown on plan.

GENERAL NOTES

1. The information and data shown or indicated with respect to the existing underground utilities at or contiguous to the site are based on information and data furnished to the owner and engineer by the owners of such underground facilities or others. The owner or engineer shall not be responsible for the accuracy or completeness of such information or data. The contractor shall have full responsibility for confirming the accuracy of the data, for locating all underground utilities, for coordination of the work with owners of such underground utilities during construction, for the safety and protection thereof and repairing any damage thereto resulting from the work. All of these conditions shall be met at no additional cost to the owner. The contractor shall contact "Miss Utilities" of Virginia at 1-800-552-7001 prior to the start of work.
2. When working adjacent to existing structures, poles, etc., the contractor shall use whatever methods that are necessary to protect structures from damage. Replacement of damaged structures shall be at the contractor's expense.
3. The contractor shall be responsible for protecting all existing site structures from damage and coordinating work so that the owner can make necessary arrangements to modify/protect existing structures from damages.
4. The contractor shall be responsible for notifying all utility owners, adjacent land owners whose property may be impacted and the Virginia Department of Transportation prior to completing any off-site work.
5. Contractor shall notify and coordinate all work involving existing utilities with utility owners, at least 72 hours prior to the start of construction.
6. Contractor shall immediately report any discrepancies between existing conditions and contract documents to the owner and engineer.
7. Contractor shall submit for the approval of the owner submittals of all specified materials listed in the plans, to include shop drawings, manufacturer's specifications and laboratory reports. the owner's approval of submittals will be general and will not relieve the the contractor from the responsibility of adherence to the contract and for any error that may exist.
8. All bare areas shall be scarified, limed, fertilized, seeded and mulched.
9. All trees, saplings, brush, etc. shall be removed from within the right of way and the drainage easements.
10. Visibility of all mechanical equipment from the Entrance Corridor shall be eliminated.
11. Retaining walls require separate building permits.
12. All water service lines, sanitary laterals, and sprinkler lines must be visually inspected by the Albemarle County Building Department from the main to the structure.
13. Accessible routes and features must be provided throughout the site in accordance with VCC and ICC A117.1-2009.
14. All roof drains shall discharge in a manner not to cause a public nuisance and not over sidewalks.

RIVANNA WATER & SEWER AUTHORITY GENERAL NOTES

1. All materials and methods of construction shall comply with the latest version of the General Water and Sewer Design and Construction Standards - Version 1.0, adopted in December 2015, except as modified below or modified in special notes.
2. RWSA shall approve all construction materials and methods of construction. A preconstruction conference shall be held with RWSA prior to the start of any work.
3. The contractor shall be responsible for notifying Miss Utility (1-800-552-7001).
4. RWSA Engineer (Victoria Fort at (434) 977-2970 ext. 205) shall be notified three business days prior to the start of construction.
5. All work is subject to inspection by RWSA staff. No tie-ins to the existing system shall be made without coordination with and the presence of RWSA staff. No work shall be conducted on RWSA facilities on weekends or holidays without special written permission from RWSA.
6. For sanitary sewer line construction: RWSA may require bypass pumping for tie-ins to the existing system. All doghouse manholes must be pressure-tested before a connection is made to the system.
7. The location of existing utilities as shown on the plans is from data available at the time of design and is not necessarily complete or accurate. The Contractor shall be responsible for the verification of the location, size and depth of all existing utilities, both surface and subsurface. The Contractor shall immediately notify the Engineer of any discrepancies between the plans and field conditions. The Contractor shall use due diligence to protect all utilities and structures from damage at all times, whether shown on the plans or not. Damage to any existing utilities shall be repaired by the Contractor to the original condition at no additional cost to the Owner.
8. Erosion and sediment control facilities shall not be permitted in the RWSA easement without special written permission from RWSA. No grading shall be permitted in the RWSA easement unless permitted otherwise by RWSA in writing.
9. No blasting shall be permitted within 100 feet of RWSA facilities without written permission and RWSA approval of the blasting plan. Ground monitoring during blasting and a pre-blast survey may be required. For blasting within 100 feet of any operative RWSA sewerlines, bypass pumping and/or pre- and post-CCTV may be required. RWSA may also require certification from a licensed professional engineer stating that the proposed blasting will not damage any RWSA facilities. Damage to any utilities due to blasting shall be repaired by the Contractor to the original condition at no additional cost to the Owner.
10. The contractor shall observe minimum separation requirements for utility crossings. When a crossing is made under an existing facility, adequate structural support shall be provided for the existing pipe. The area of the crossing shall be backfilled with compacted 57 stone to the springline of the existing pipe.
11. New water main installations shall be pressure tested, chlorinated, flushed and have water samples approved prior to making any permanent connection to the public water system. Approved methods of filling and flushing new water mains will be required to prevent any contamination of the public water system.
12. All easements for new RWSA facilities shall be recorded prior to placing the new facilities into service.
13. No permanent structural facilities will be permitted in the RWSA easement. This includes building overhangs, retaining walls, footers for any structure, drainage structures, etc.
14. Trees are not permitted in the RWSA easement.

GENERAL CONSTRUCTION NOTES

1. Prior to any construction within any existing right-of-way, including connection to any existing road, a permit shall be obtained from the Virginia Department of Transit (VDOT). This plan as drawn may not accurately reflect the requirements of the permit.Where any discrepancies occur the requirements of the permit shall govern.
2. All materials and construction methods shall conform to the current specifications and standards of VDOT unless otherwise noted.
3. Erosion and siltation control measures shall be provided in accordance with the approved erosion control plan and shall be installed prior to any clearing, grading or other construction.
4. All slopes and disturbed areas are to be fertilized, seeded and mulched.
5. The maximum allowable slope is 2:1 (horizontal:vertical). Where reasonably obtainable, lesser slopes of 3:1 or better are to be acheived.
6. Paved, rip-rap or stabilization mat lined ditch may be required when in the opinion of the County Engineer or designee it is deemed necessary in order to stabilize a drainage channel.
7. All traffic control signs shall conform with the Virginia Manual for Uniform Traffic Control Devices.
8. Unless othrewise noted all concrete pipe shall be reinforced concrete pipe - Class III.
9. All excavation for underground pipe installation must comply with OSHA Standards for the Construction Industry (29 CFR Part 1926).

MAJOR SITE PLAN AMENDMENT NARRATIVE

This plan is a major site plan amendment to SDP2020-00052 Regents School of Charlottesville, approved on April 18, 2022. Construction of the site is currently ongoing.

The scope of this major site plan amendment incorporates a larger athletic field and the addition of the Upper School Campus, as conceptually shown on approved SDP2020-00052, located adjacent to the athletic field. The approved Lower School Campus, located adjacent to the parking area, has only been revised to shift 30' north, to accommodate the larger field area. This major site plan amendment proposes a new central water supply for one water meter to serve the school use and the expansion of the approved central sewerage system.

VICINITY MAP SCALE : 1"=1000'

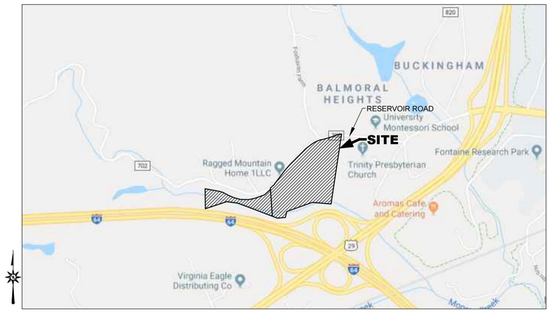


IMAGE PROVIDED BY GOOGLE MAPS

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APPROVALS

Current Development Planner — Date

Current Development Engineer — Date

Architectural Review Board — Date

Fire Official — Date

Building Official — Date

Albemarle County Service Authority — Date

Virginia Department of Transportation — Date

SHIMP ENGINEERING PC
LAND PLANNING - PROJECT MANAGEMENT
912 E. HIGH ST. 434.227.5140
CHARLOTTESVILLE VA, 22902 JUSTIN@SHIMP-ENGINEERING.COM

COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
Lic No. 45183
3/23/23
PROFESSIONAL ENGINEER

MAJOR SITE PLAN AMENDMENT
REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA
SUBMISSION:
2022.06.28
REVISION:
2022.09.07 [Central Systems Request - ACSA]
2022.09.27 [ACSA]
2023.01.04 [SPA Submit 2]
2023.03.23 [SPA Submit 3]

FILE NO.
18.020

COVER

C1

RESOLUTION TO APPROVE
SP 2018-11 THE REGENTS SCHOOL OF
CHARLOTTESVILLE – RESERVOIR ROAD

WHEREAS, the Regents School of Charlottesville submitted an application for a special use permit to construct and operate a private school on Tax Parcels 07600-00-00-01700 and 07500-00-00-06600, located on Reservoir Road, with an initial maximum enrollment of 280 students, and potential future maximum enrollment of 468 students, and the application is identified as SP201800011 The Regents School of Charlottesville – Reservoir Road ("SP 2018-11"); and

WHEREAS, on September 3, 2019, after a duly noticed public hearing, the Albemarle County Planning Commission recommended approval of SP 2018-11 with staff-recommended conditions, as well as minor technical revisions and clarifications to Condition #2 (now Condition #3) regarding potential future increase(s) to student enrollment in excess of 280 students up to a maximum of 468 students and/or a school start time later than 7:45 a.m.; and

WHEREAS, on September 18, 2019, the Albemarle County Board of Supervisors held a duly noticed public hearing on SP 2018-11.

NOW, THEREFORE, BE IT RESOLVED that, upon consideration of the foregoing, the staff report prepared for SP 2018-11 and all of its attachments, the information presented at the public hearing, any written comments received, and the factors relevant to a special use permit in Albemarle County Code §§ 18-1.4, 18-1.5, 18-13.1, 18-13.2.2.5, 18-30.7.1, 18-33.39, and 18-33.40, the Albemarle County Board of Supervisors hereby approves SP 2018-11, subject to the conditions attached hereto.

* * *

I, Claudette K. Borgersen, do hereby certify that the foregoing writing is a true, correct copy of a Resolution duly adopted by the Board of Supervisors of Albemarle County, Virginia, by a vote of six to zero, as recorded below, at a meeting held on September 18, 2019.

Clerk, Board of County Supervisors

	Aye	Nay
Mr. Dill	Y	____
Mr. Gallaway	Y	____
Ms. Mallek	Y	____
Ms. McKeel	Y	____
Ms. Palmer	Y	____
Mr. Randolph	Y	____

RESOLUTION TO APPROVE SPECIAL EXCEPTION FOR
SP 18-11 THE REGENTS SCHOOL OF CHARLOTTESVILLE – RESERVOIR ROAD

WHEREAS, the Applicant filed a request in conjunction with SP 2018-11 for a special exception to modify the maximum allowable height of the light poles as required in County Code § 18-13.3 to be increased from 35 feet to 70 feet for a proposed lighted ball field at the proposed school.

NOW, THEREFORE, BE IT RESOLVED that, upon consideration of the foregoing, the staff report prepared in conjunction with the application and the attachments thereto, including staff's supporting analysis, and all of the factors relevant to the special exceptions in Albemarle County Code §§ 18-4.17.5, 18-33.43, and 18-33.49, the Albemarle County Board of Supervisors hereby approves the special exception as set forth above, subject to the conditions attached hereto.

* * *

I, Claudette K. Borgersen, do hereby certify that the foregoing writing is a true, correct copy of a Resolution duly adopted by the Board of Supervisors of Albemarle County, Virginia, by a vote of six to zero, as recorded below, at a meeting held on September 18, 2019.

Clerk, Board of County Supervisors

	Aye	Nay
Mr. Dill	Y	____
Mr. Gallaway	Y	____
Ms. Mallek	Y	____
Ms. McKeel	Y	____
Ms. Palmer	Y	____
Mr. Randolph	Y	____

SP-2018-11 The Regents School of Charlottesville – Reservoir Road
Special Use Permit Conditions

1. Development of the subject property shall be in general accord with the concept plan entitled "Special Use Permit Concept Plan and Engineering Study for Regents School of Charlottesville" prepared by Justin Shimp, P.E. of Shimp Engineering, dated July 16, 2018 and revised August 23, 2019, which includes sheets C1 – C6 (the "Concept Plan"), attached hereto, as determined by the Director of Planning and Zoning Administrator. To be in general accord with the Concept Plan, development and use shall reflect the following major elements within the development essential to the design of the development, as shown on the Concept Plan:
   a. the location of the "School Facilities Area," "School Recreation Area," and other major school improvements within the 13.12-acre area designated "School Campus Site" on Sheet C3;
   b. the location of the "Lighted Ball Field" within the "School Recreation Area" on Sheet C3;
   c. the location and configuration of 5.99-acre area designated "Undeveloped Residue" on Sheet C3;
   d. the land use chart on Sheets C4 and C5 specifying "Prohibited Uses" and "Permitted Uses" for each different "Land Use" area;

   Minor modifications to the plan which do not conflict with the elements above may be made to ensure compliance with the Zoning Ordinance.

2. Except as otherwise provided herein, initial student enrollment shall be limited to 280 students, and the start time of the school shall be no later than 7:45 A.M.

3. Notwithstanding Condition 2, student enrollment may exceed 280 students up to a maximum of 468 students and/or the start time may be shifted to a time later than 7:45 A.M. (together, "operational changes"), if at the time of any such proposed operational changes the applicant submits a formal request that includes a Traffic Impact Assessment (TIA) which demonstrates the following to the satisfaction of the Director of Community Development and his/her designees:
   a. The proposed operational changes would not result in any movements with a delay greater than 50 seconds; and
   b. The proposed operational changes would not result in any movements with a delay greater than 35 sonds, unless it will have a delay greater than 35 seconds in the future no-build, provided that if the future no-build shows a delay greater than 35 seconds the future build cannot increase by more than 10 seconds; and
   c. The proposed operational changes would not result in any movements increasing by more than 15 seconds between the future build and no build conditions; and
   d. Operations at the US 29 Bypass interchange at Fontaine Avenue Extended may not result in it being placed on the VDOT Top 100 Potential for Safety Improvement (PSI) locations for intersections or segments.

   For the purposes of this Condition:

   e. The Traffic Impact Assessment (TIA) dated October 12, 2018 and associated supplemental TIA's submitted with SP201800011 may be used for baseline traffic data until August 2021. If any request for any such proposed operational change(s) is made any time after August 2021, a new TIA and traffic counts will be required to establish a new baseline.
   f. The scope of any such new TIA and traffic counts prepared in conjunction with a formal request for any such proposed operational change(s) must be determined in consultation with the Director of Community Development's designee(s), and must include the following intersections: the southbound exit ramp of US 29 Bypass at the Fontaine Avenue Extended interchange; the northbound exit ramp of US 29 Bypass at the Fontaine Avenue Extended interchange; and the intersection of Fontaine Avenue Extended and Reservoir Road.
   g. The identification of "future build conditions" and "future no-build conditions" in any such new TIA and traffic counts will be based on the following:
      i. "Future no-build conditions" will include the traffic generated by the private school use at a student enrollment of 280 and other nearby developments, as determined through the TIA scoping process; and
      ii. "Future build conditions" will only include the traffic generated by the proposed increase in number of students over the number of vehicle trips associated with the private school use at a student enrollment of 280 and the traffic generated by any other operational changes;
   h. Proposed operational changes which do not conform with and adhere to the conditions listed above would require the submittal of an application for a special use permit amendment and approval by the Board of Supervisors.

4. The applicant must plan, fund, and complete the transportation improvements to Reservoir Road shown on the special use permit application materials titled "Reservoir Road Survey for Regents School," prepared by Justin M. Shimp, P.E. of Shimp Engineering, dated July 1, 2019, prior to the issuance of a Certificate of Occupancy. The proposed improvements are subject to review and approval by VDOT, the County Engineer, and other applicable Site Review Committee members, and are subject to required County approvals of Road Plans, a Water Protection Ordinance Plan, and all other applicable permitting requirements.

5. If the use, structure or activity authorized by this special use permit does not commence within a period of five years after the date of approval, the special use permit shall be deemed abandoned and the authority granted hereunder shall terminate. For the purposes of this condition, the term "commence" means starting the lawful physical construction of any structure shown on the Conceptual Plan referenced in Condition 1 above, and this construction shall commence by September 18, 2024.

SDP 2018-11 The Regents School of Charlottesville – Reservoir Road
Special Exception Conditions

1. The maximum permissible height of the poles supporting outdoor luminaries at The Regents School of Charlottesville's athletic field is 70 feet.
2. Outdoor lighting of The Regents School of Charlottesville's athletic field shall not continue past 10:00 p.m.

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COMMONWEALTH OF VIRGINIA
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Lic. No. 45183
3/23/23
PROFESSIONAL ENGINEER

MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA

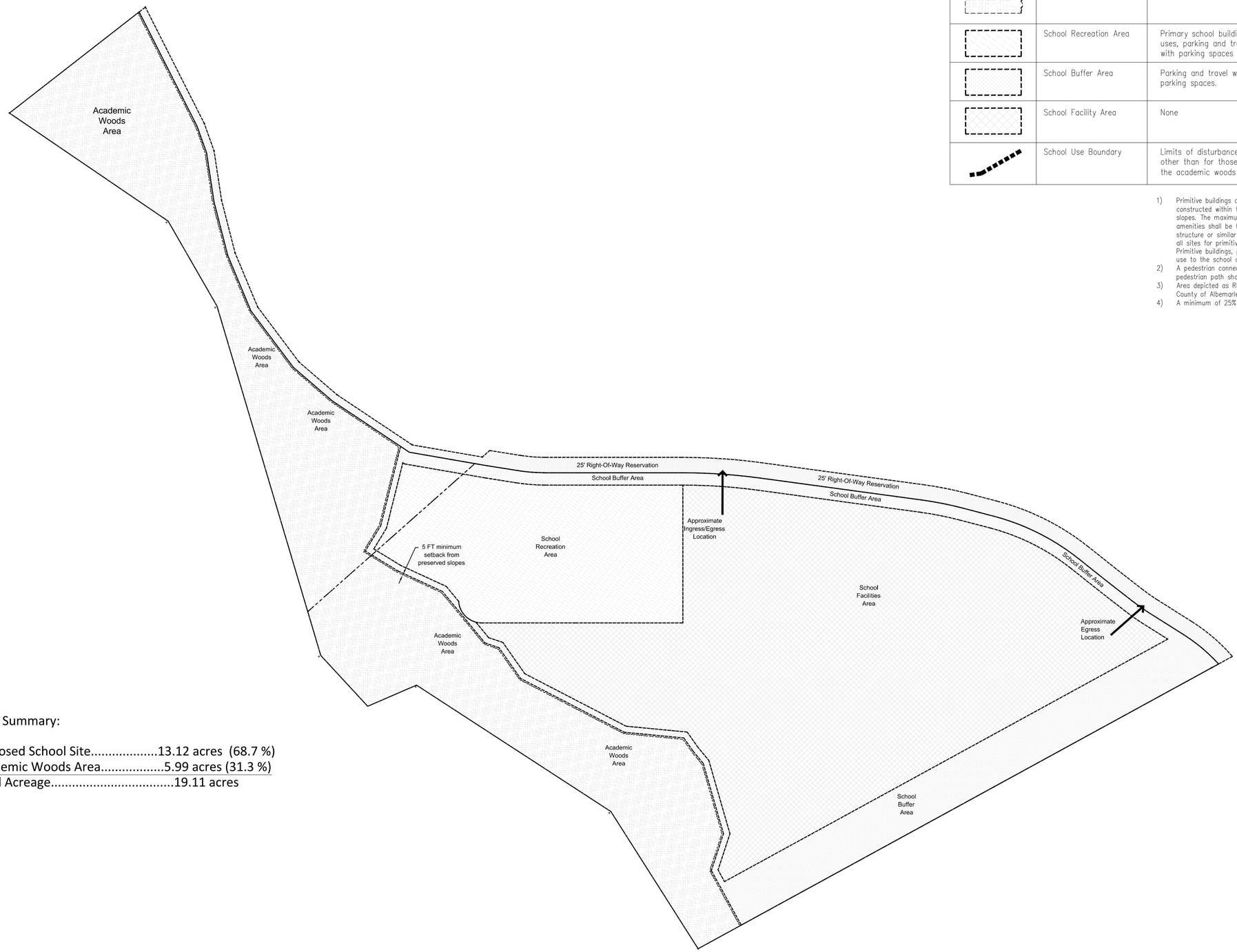
SUBMISSION:
2022.06.28

REVISION:
2022.09.07 [Central Systems Request - ACSA]
2022.09.27 [ACSA]
2023.01.04 [SPA Submit 2]
2023.03.23 [SPA Submit 3]

FILE NO.
18.020

SP APPLICATION PLAN & CONDITIONS

C2



LEGEND	LAND USE	PROHIBITED USES	PERMITTED USES
	Right-of-Way Reservation	School Buildings and associated uses, Parking and travel ways	Ingress/Egress, grading, landscaping, utilities, along with any other uses typically permitted within VDOT ROW
	Academic Woods Area	School Buildings and associated uses, Parking and travel ways	Stream restoration, primitive trails, landscaping, gardens, utilities (which cannot be reasonably located outside of tree preservation area), and primitive buildings (see note 1 below)
	School Recreation Area	Primary school buildings and associated uses, parking and travel ways associated with parking spaces	Ballfields, outdoor recreation, and associated facilities such as bleachers, dugouts, storage sheds, concession stands, lighting, etc.
	School Buffer Area	Parking and travel ways associated with parking spaces.	Signage, grading, retaining walls, landscaping, utilities, ingress/egress to the site, etc.
	School Facility Area	None	Any primary and secondary uses associated with the proposed school use along with any underlying by-right zoning uses
	School Use Boundary	Limits of disturbance for school use other than for those uses permitted in the academic woods area (see above)	Limits of disturbance for school use other than for those uses permitted in the academic woods area (see above)

1) Primitive buildings and structures, such as picnic pavilions, storage sheds, and amphitheaters, may be constructed within the portion of the academic woods area that is outside of stream buffers and preserved slopes. The maximum number of sites for primitive buildings or primitive structures or similar outdoor amenities shall be five (5). The maximum disturbance area of any individual primitive building or primitive structure or similar outdoor amenity shall be 500 square feet. The maximum aggregate disturbance area for all sites for primitive buildings or primitive structures or outdoor amenities shall be 2,500 square feet. Primitive buildings, primitive structures, and similar outdoor amenities are intended to serve as an accessory use to the school and are not intended for use on a daily basis.
2) A pedestrian connection shall be provided from the site to TMP 76-17. The design and location of the pedestrian path shall be finalized during the site plan process.
3) Area depicted as Right-of-Way reservation area shall be reserved for future dedication upon demand by the County of Albemarle or the Virginia Department of Transportation.
4) A minimum of 25% of the school campus site, as shown on sheet C5, shall be delineated as open space.

Area Summary:

Proposed School Site.....13.12 acres (68.7 %)
Academic Woods Area.....5.99 acres (31.3 %)
Total Acreage.....19.11 acres

80 0 80 160 240
Graphic Scale: 1"=80'

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MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA
SUBMISSION:
2022.06.28
REVISION:
2022.09.07 [Central Systems Request - ACSA]
2022.09.27 [ACSA]
2023.01.04 [SPA Submit 2]
2023.03.23 [SPA Submit 3]

FILE NO.
18.020

SP APPLICATION PLAN & CONDITIONS

C3



LINE	BEARING	DISTANCE
L1	S 08°36'52" W	38.34'
L2	S 13°56'38" W	86.22'
L3	S 84°33'24" W	112.13'
L4	N 69°13'48" W	74.27'
L5	N 82°34'45" W	159.00'
L6	S 71°36'50" W	93.96'
L7	S 72°21'41" E	47.27'
L8	S 61°19'41" E	81.07'
L9	S 67°04'41" E	88.45'
L10	S 75°20'41" E	95.00'
L11	S 89°35'41" E	111.73'
L12	N 78°05'19" E	81.47'
L13	N 04°14'15" W	15.97'
L14	N 46°16'47" E	51.35'
L15	N 51°56'56" E	50.34'
L16	N 75°51'56" E	54.88'
L17	N 75°17'17" E	55.65'
L18	N 69°34'27" E	66.39'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	39.46'	252.00'	8°58'15"	N 41°47'39" E	39.41'
C2	129.36'	958.00'	7°44'12"	N 41°10'38" E	129.26'
C3	72.53'	602.00'	6°54'11"	N 48°29'50" E	72.49'
C4	166.97'	400.00'	23°55'01"	N 63°54'26" E	165.76'
C5	29.92'	300.00'	5°42'50"	N 72°25'52" E	29.91'
C6	87.40'	300.00'	16°41'31"	N 77°55'13" E	87.09'

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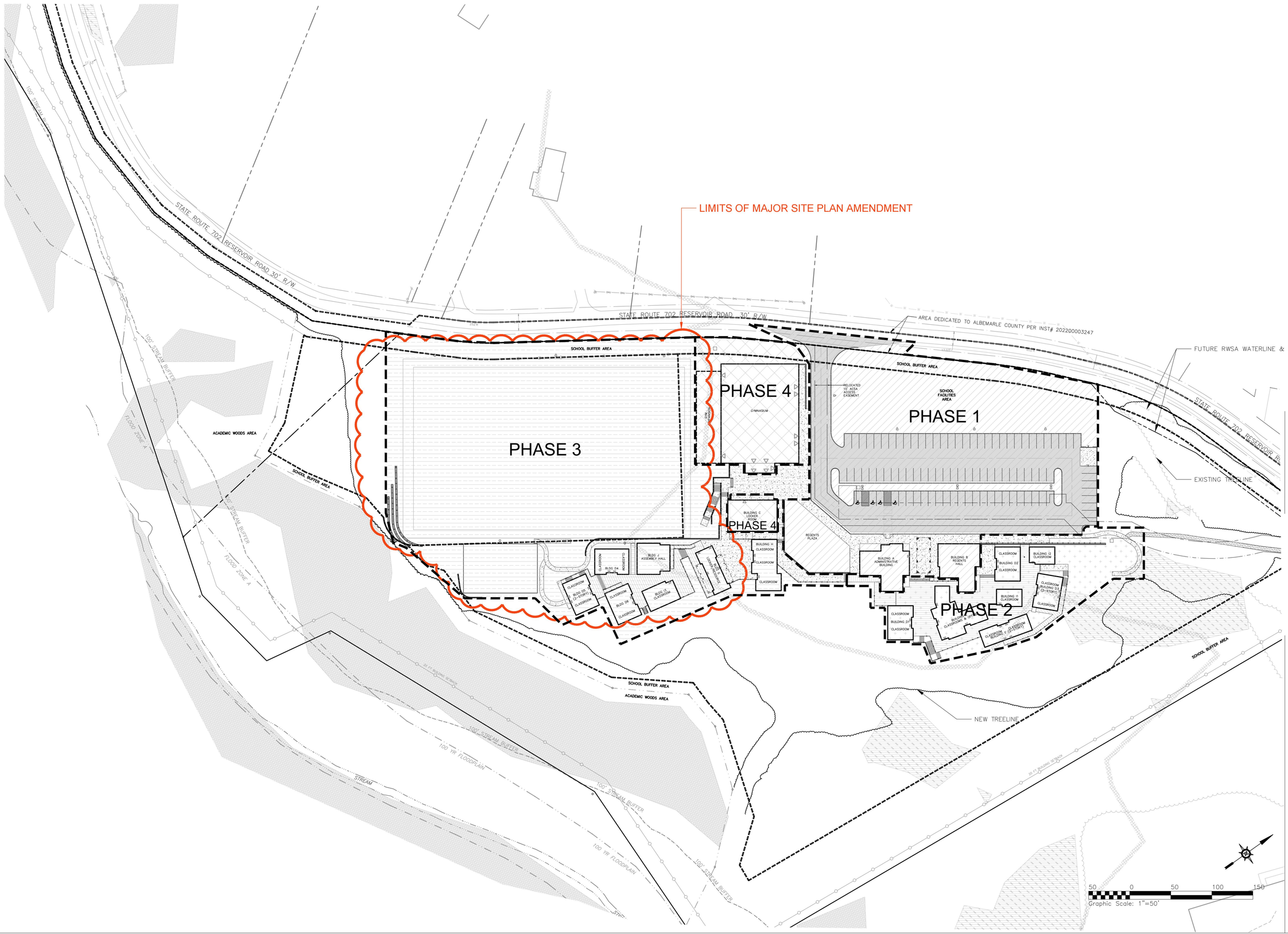
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FILE NO.
18.020

EXISTING CONDITIONS

C4



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FILE NO.
18.020

SITE PLAN OVERVIEW & PHASING PLAN

C5



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REGENTS SCHOOL

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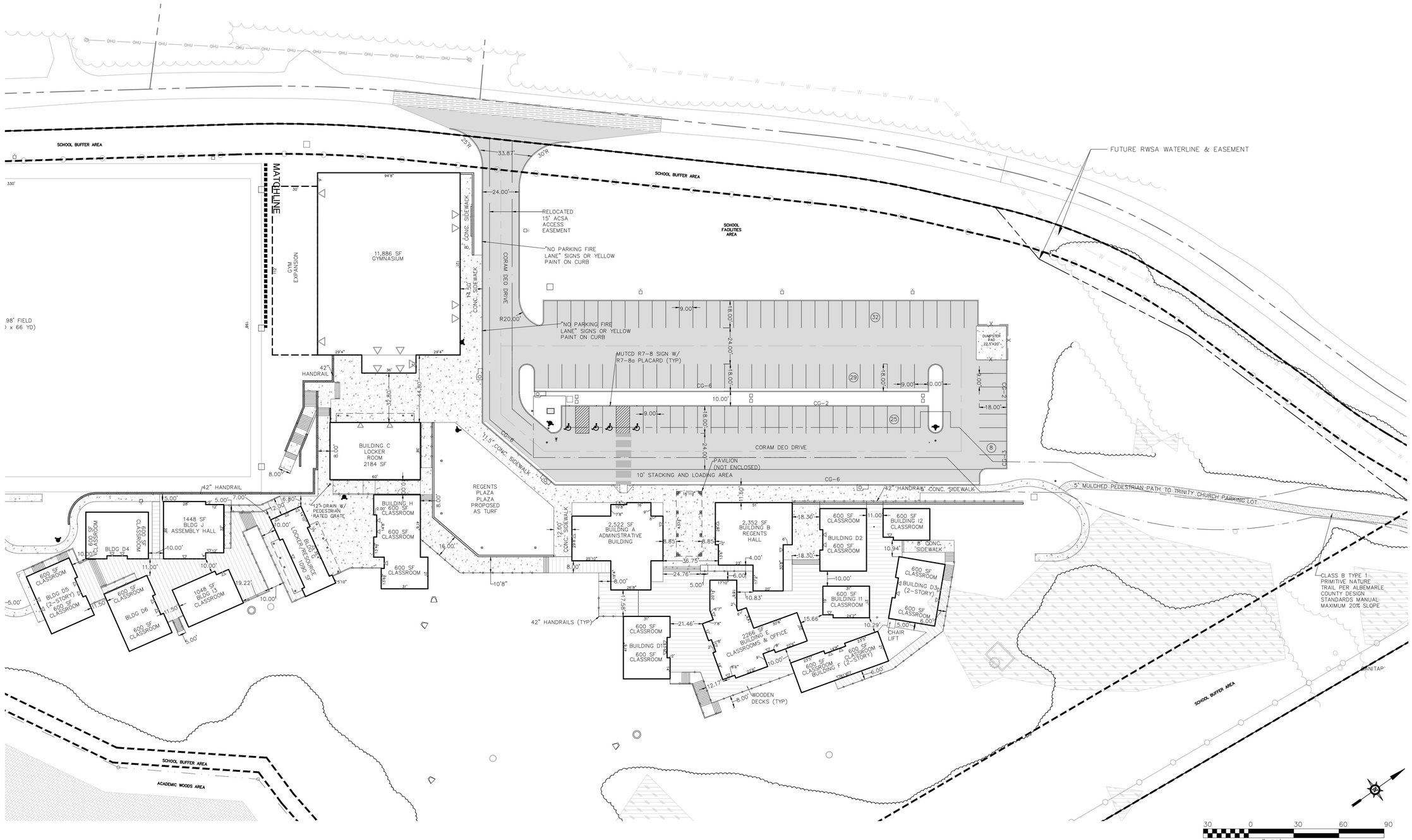
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FILE NO.
18.020

SITE PLAN

C6



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FILE NO.
18.020

SITE PLAN

C7



NOTE: Sanitary laterals and water service lines to have a min. 18" vertical separation.

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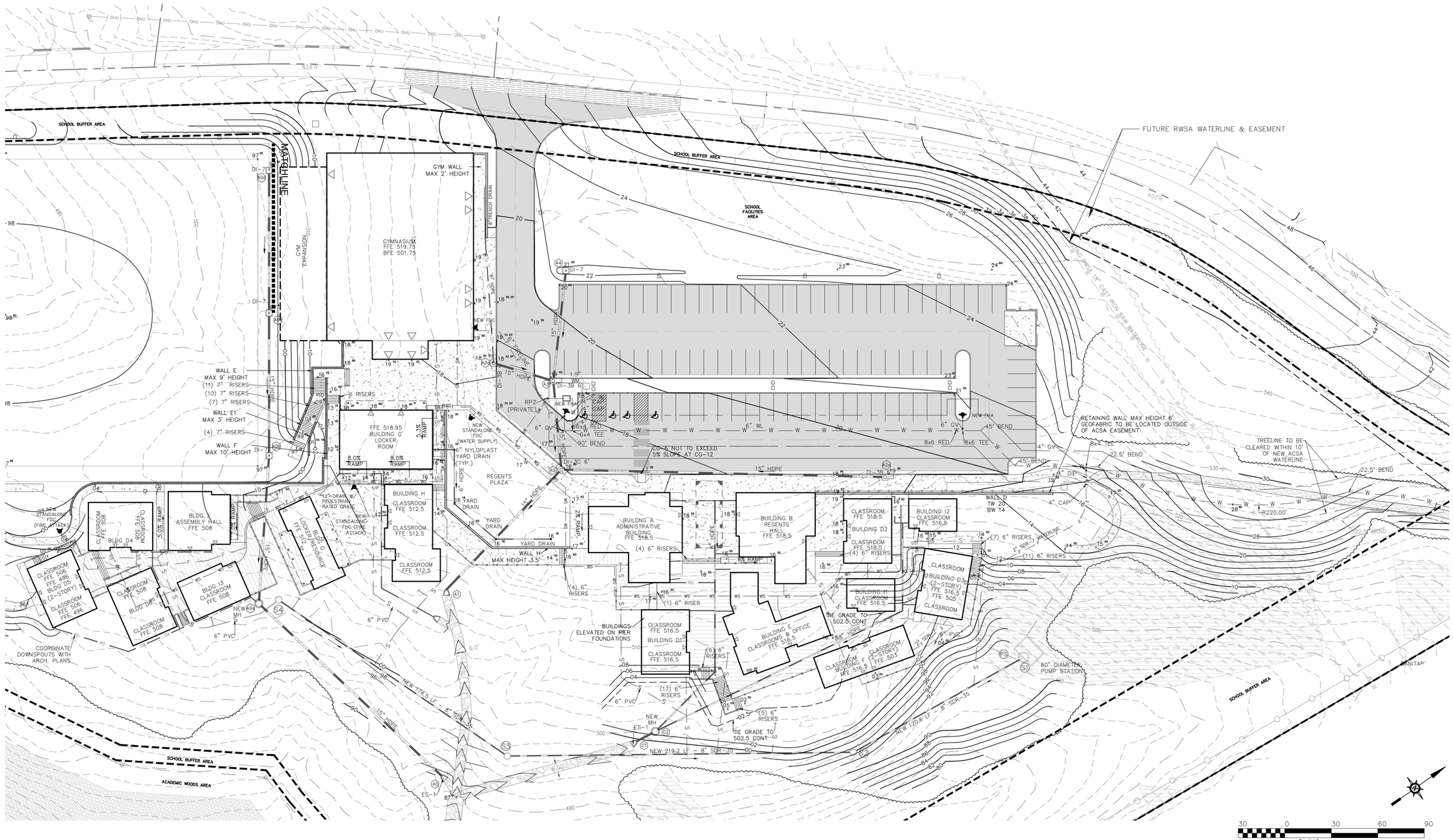
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FILE NO.
18.020

GRADING & UTILITY PLAN

C8



Graphic Scale: 1"=30'

NOTE: Sanitary laterals and water service lines to have a min. 18" vertical separation.

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MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

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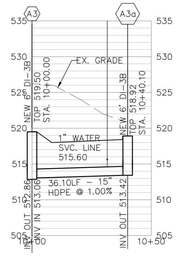
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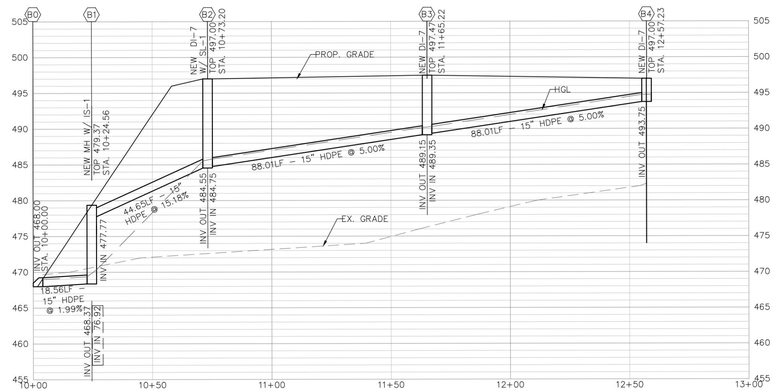
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GRADING & UTILITY PLAN

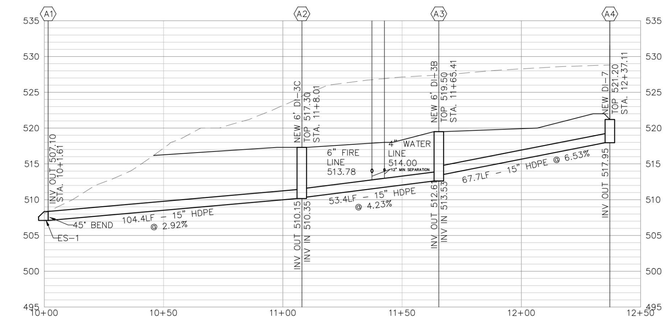
C9



1 C10 STORM PROFILE A3-A3a
HORZ: 1"=30'
VERT: 1"=10'

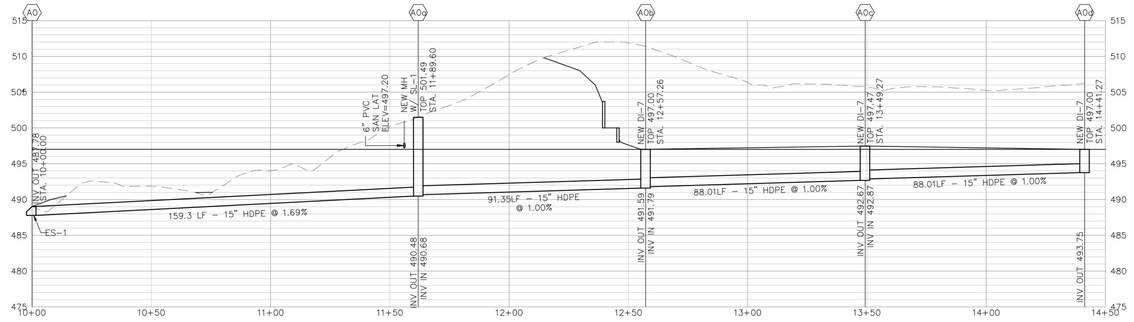


2 C10 STORM SEWER PROFILE B0-B4
HORZ: 1"=30'
VERT: 1"=10'

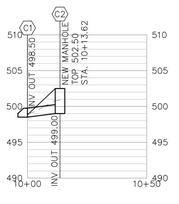


3 C10 STORM SEWER PROFILE A1-A5
HORZ: 1"=30'
VERT: 1"=10'

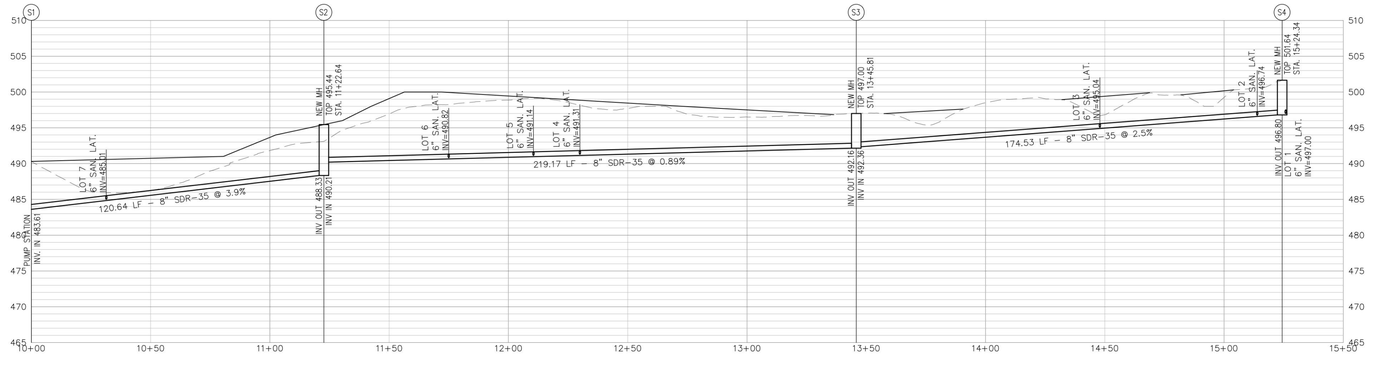
4 C10 STORM SEWER PROFILE A2-A2a
HORZ: 1"=30'
VERT: 1"=10'



5 C10 STORM SEWER PROFILE A1-A1d
HORZ: 1"=30'
VERT: 1"=10'



6 C10 STORM PROFILE C1-C2
HORZ: 1"=30'
VERT: 1"=10'



7 C10 SANITARY SEWER PROFILE S1-S4
HORZ: 1"=30'
VERT: 1"=10'

NOTE: Min. of 5' vertical separation between sanitary pipe and drainge ditch crossings (typ.)

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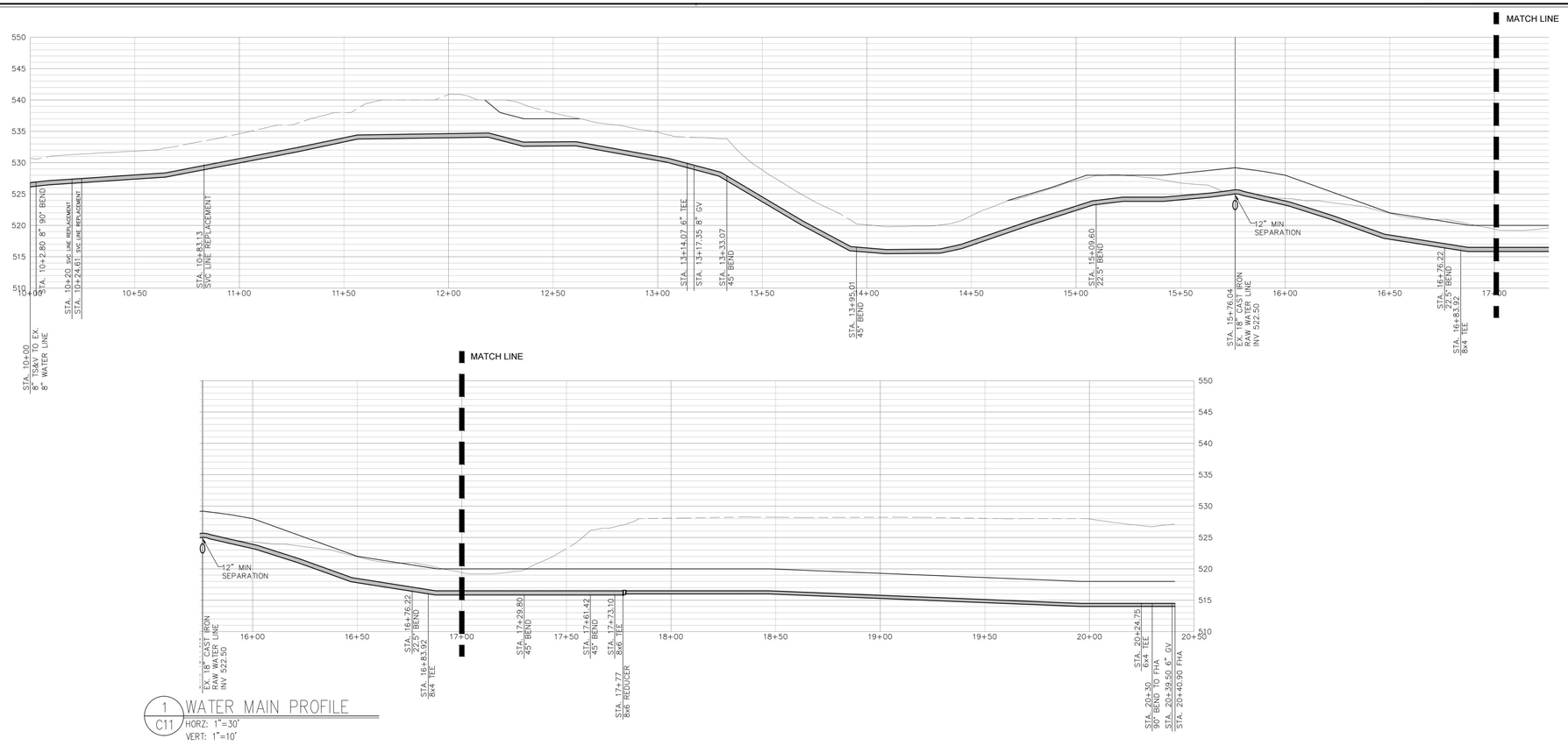
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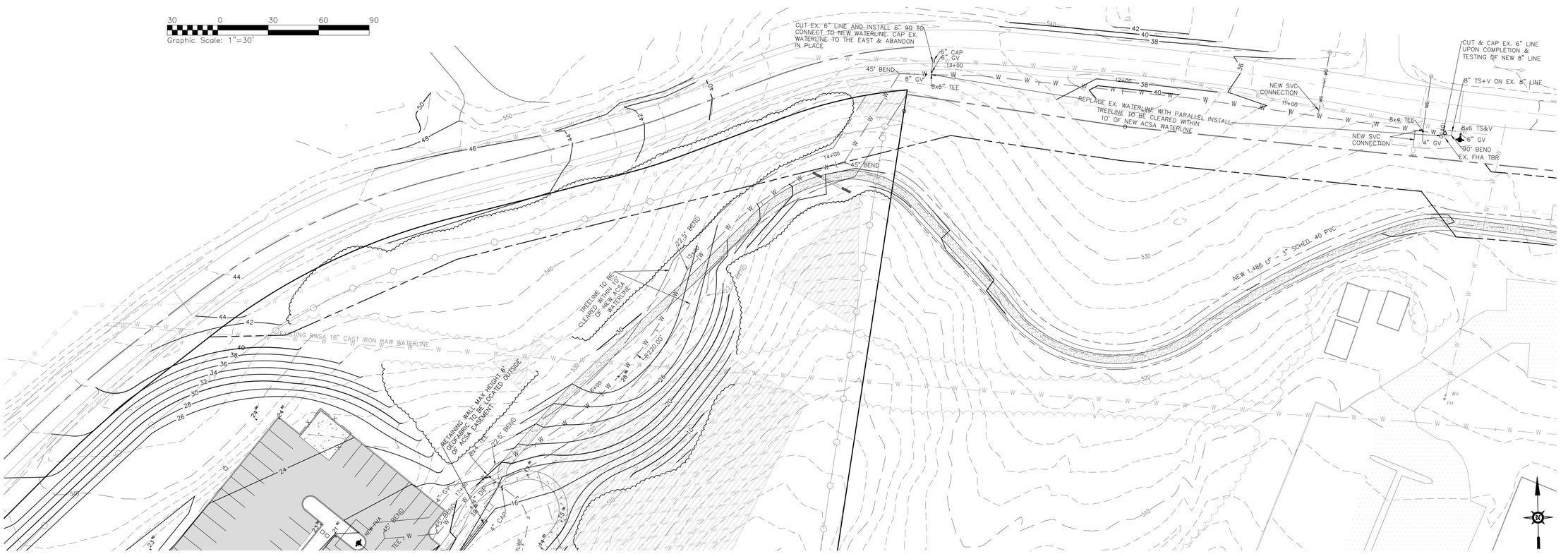
UTILITY PROFILES

C10



1 / C11 WATER MAIN PROFILE
HORZ: 1"=30'
VERT: 1"=10'

30 0 30 60 90
Graphic Scale: 1"=30'



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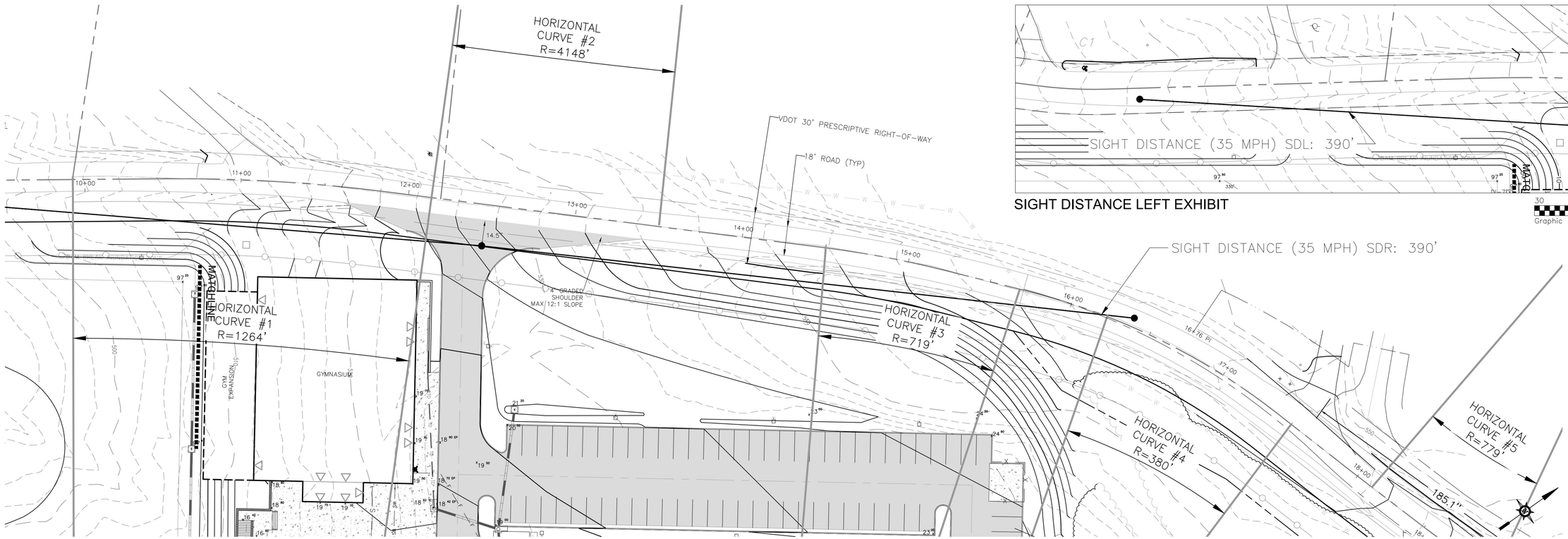
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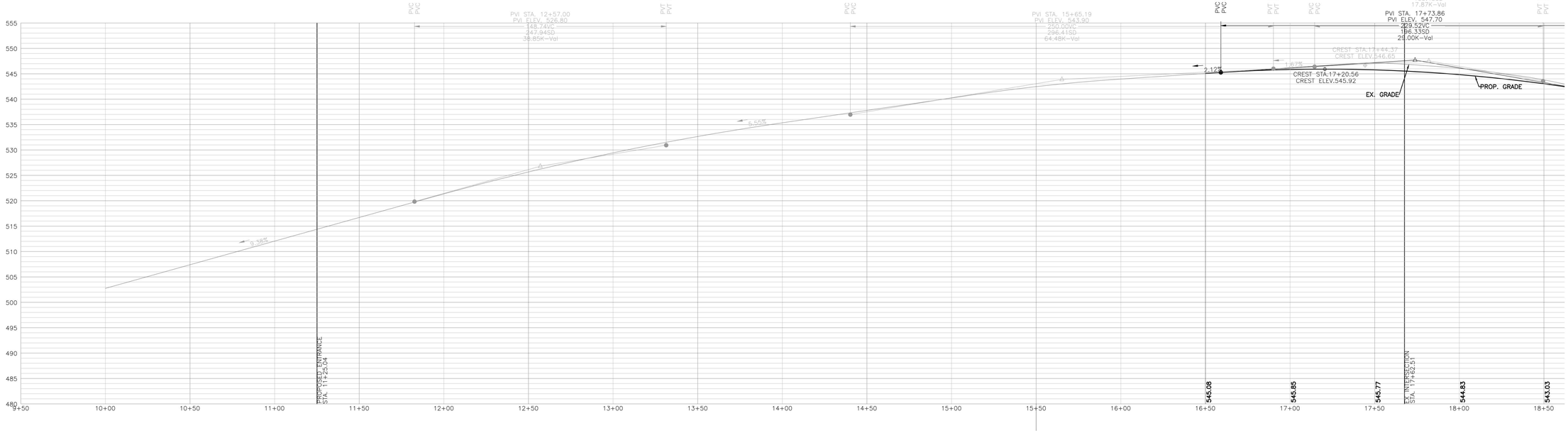
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18.020

WATER MAIN REPLACEMENT & PROFILE

C11



SIGHT DISTANCE LEFT EXHIBIT



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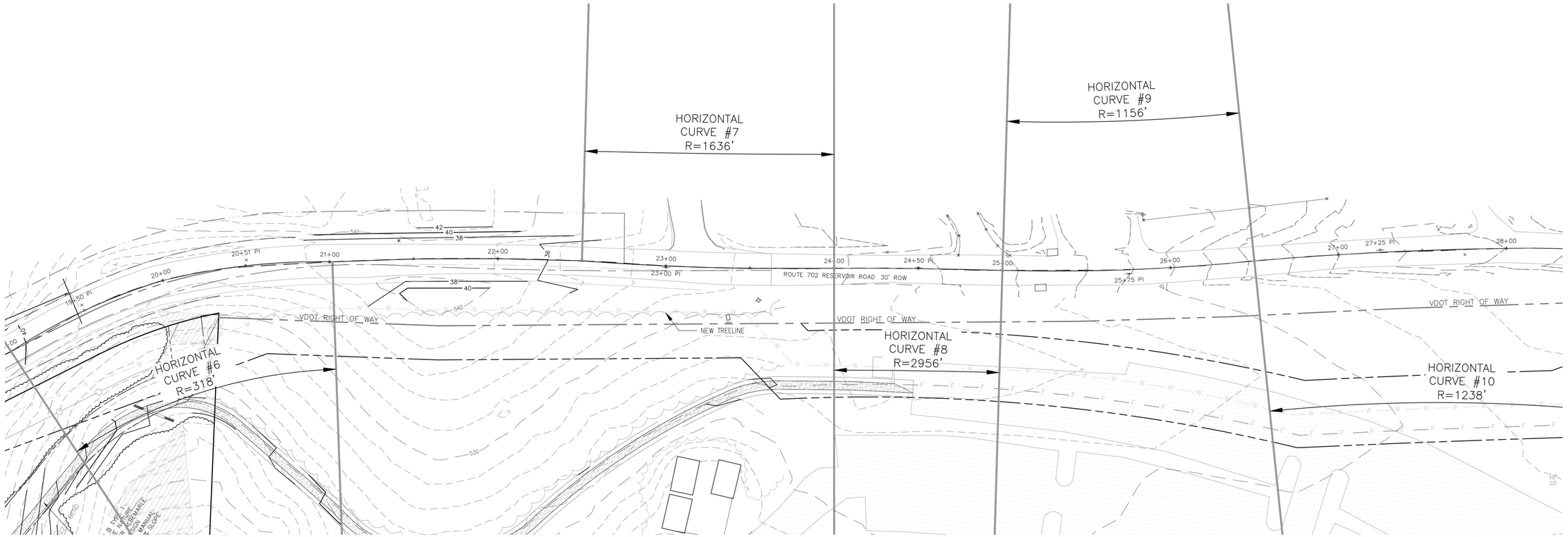
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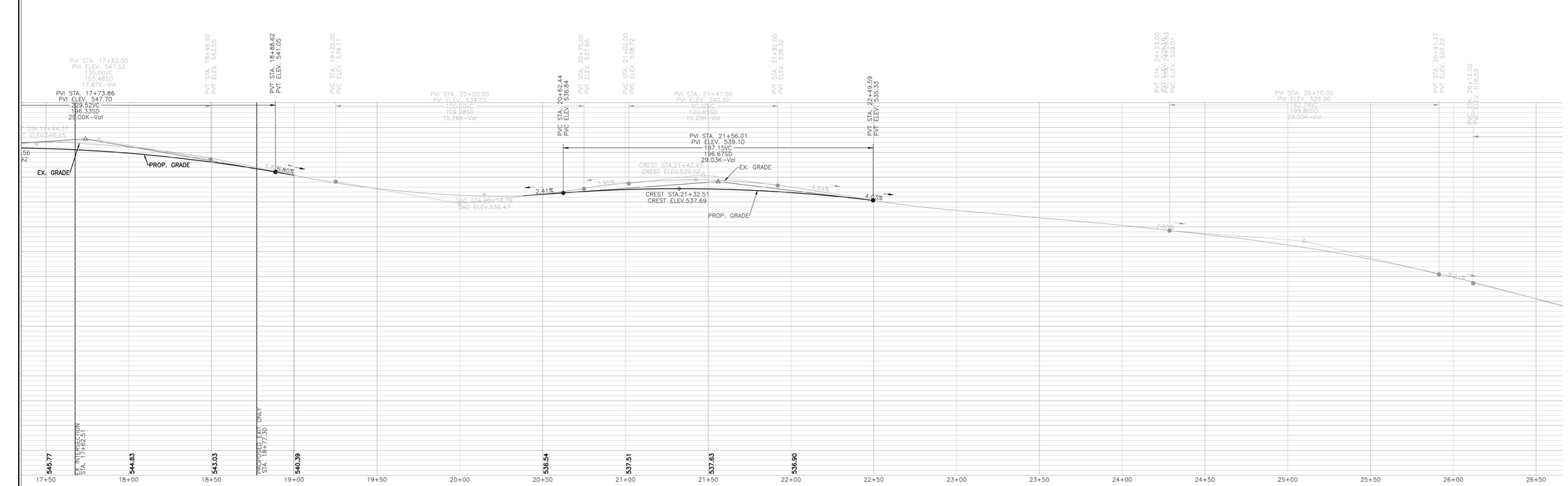
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FILE NO.
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ROAD PLAN

C12





30 0 30 60 90
Graphic Scale: 1"=30'

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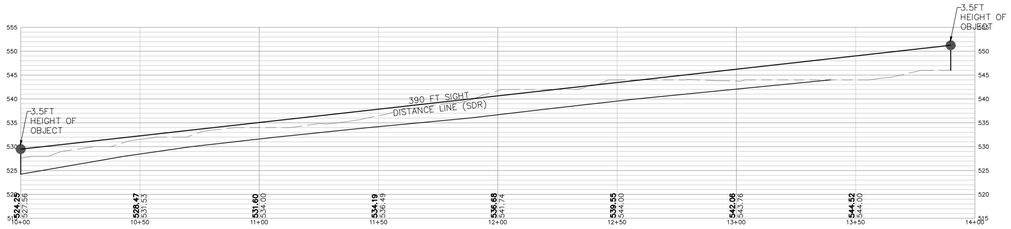
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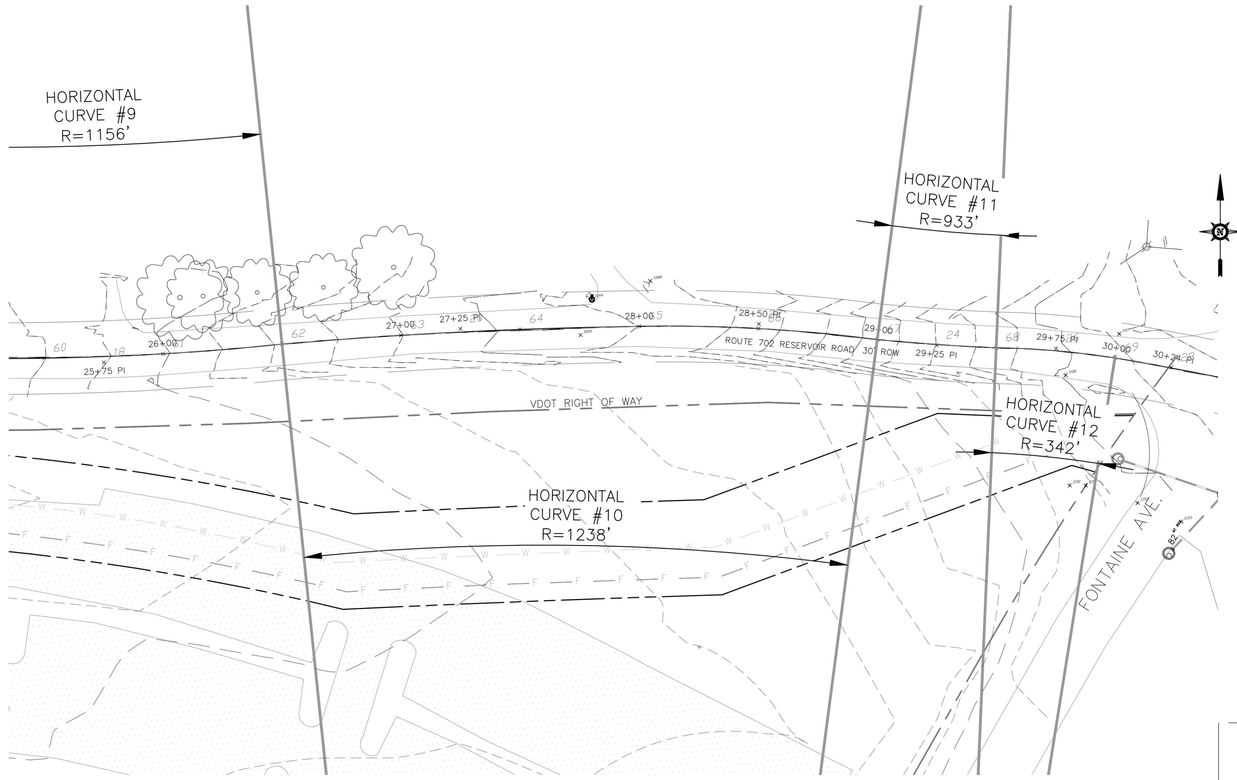
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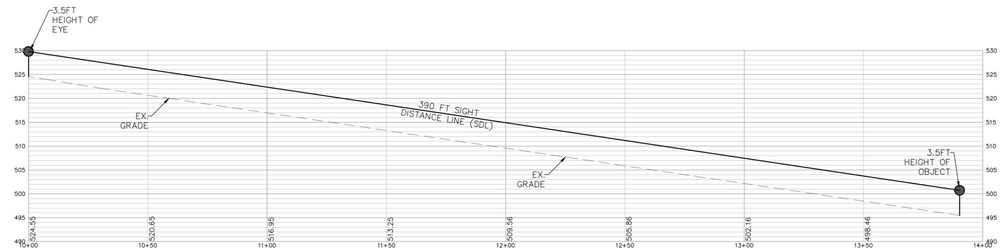
ROAD PLAN

C13

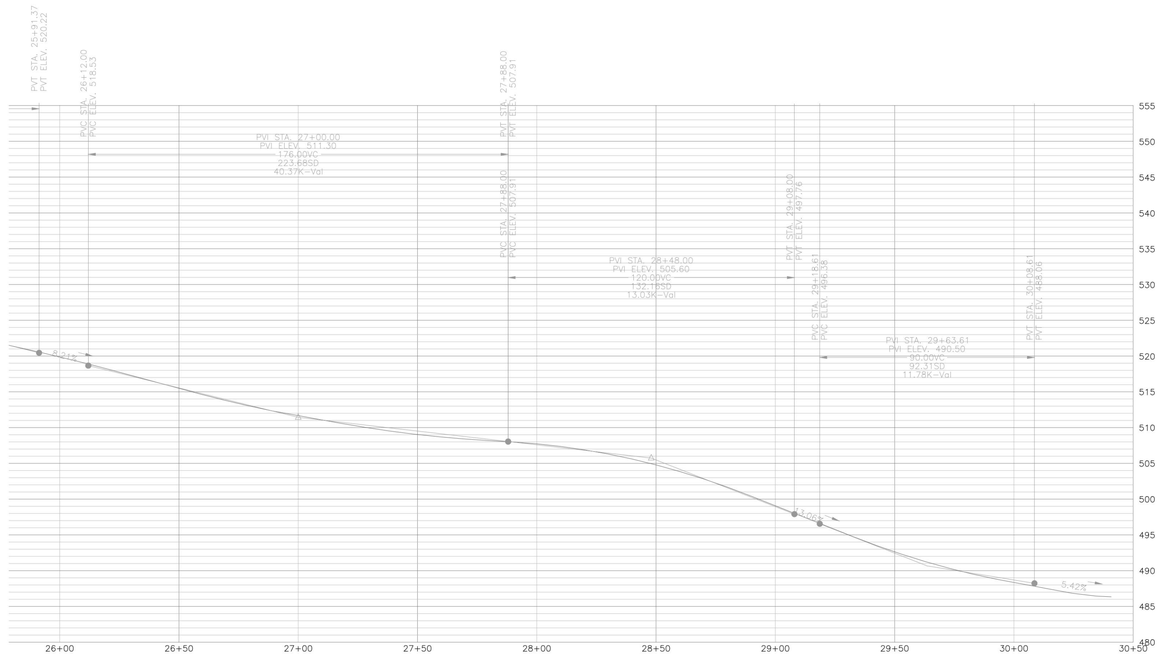


1 SIGHT DISTANCE RIGHT PROFILE
C14 HORZ: 1"=30'
VERT: 1"=10'





2 SIGHT DISTANCE LEFT PROFILE
C14 HORZ: 1"=30'
VERT: 1"=10'



30 0 30 60 90
Graphic Scale: 1"=30'

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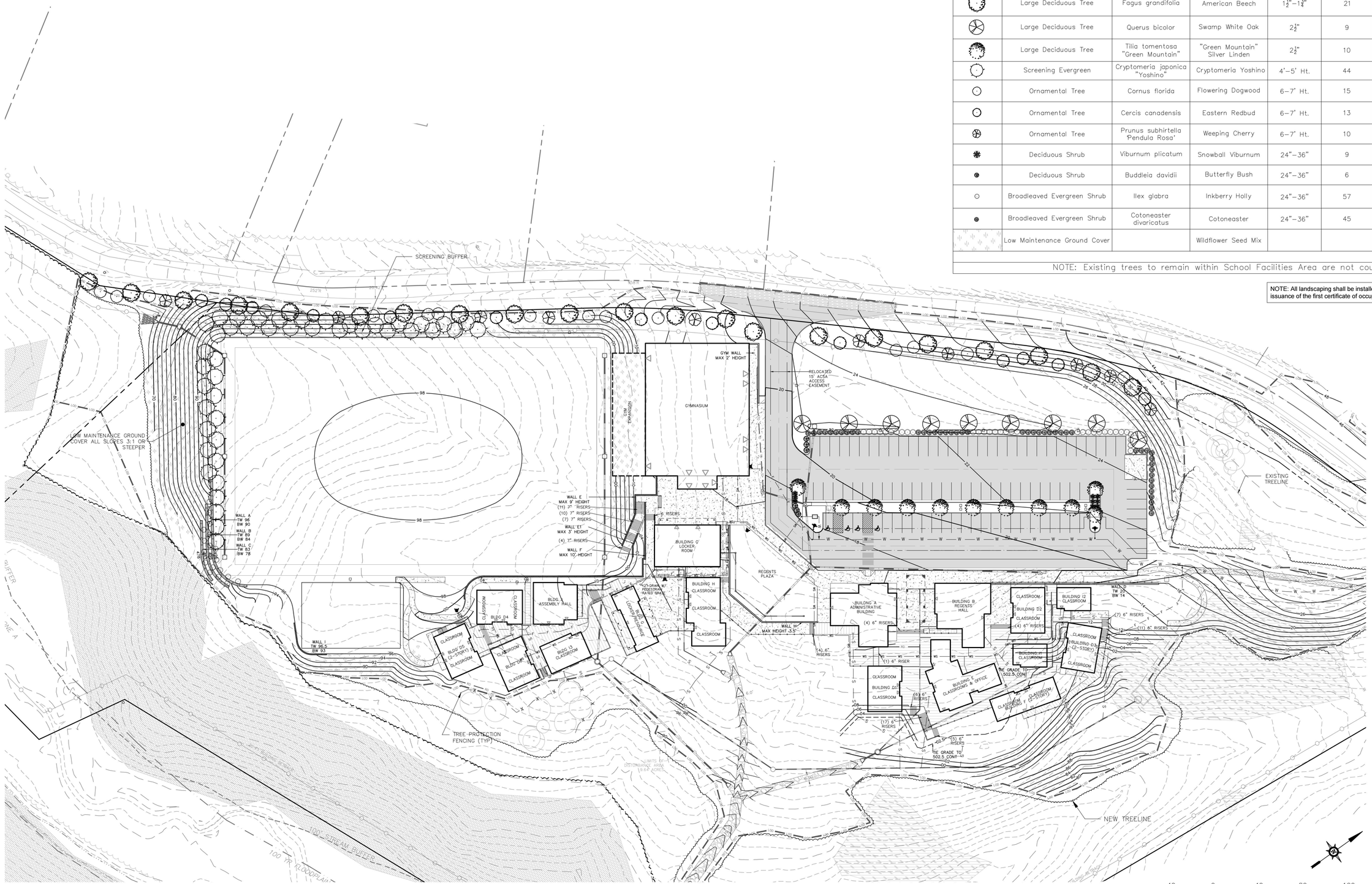
C14

LANDSCAPE SCHEDULE

Plant Symbol	Planting Type	Botanical Name	Common Name	Min. Cal./Height	Quantity	Total Height (ft) in 10 Yrs	Canopy SF	Total Canopy SF
	Large Deciduous Tree	Fagus grandifolia	American Beech	1½"–1¾"	21	20	227	4767
	Large Deciduous Tree	Quercus bicolor	Swamp White Oak	2½"	9	31	299	2691
	Large Deciduous Tree	Tilia tomentosa "Green Mountain"	"Green Mountain" Silver Linden	2½"	10	25	276	2760
	Screening Evergreen	Cryptomeria japonica "Yoshino"	Cryptomeria Yoshino	4'–5' Ht.	44	25	123	5412
	Ornamental Tree	Cornus florida	Flowering Dogwood	6–7' Ht.	15	17	124	1860
	Ornamental Tree	Cercis canadensis	Eastern Redbud	6–7' Ht.	13	17	124	1612
	Ornamental Tree	Prunus subhirtella 'Pendula Rosa'	Weeping Cherry	6–7' Ht.	10	15	77	770
	Deciduous Shrub	Viburnum plicatum	Snowball Viburnum	24"–36"	9	8	50	450
	Deciduous Shrub	Buddleia davidii	Butterfly Bush	24"–36"	6	7	16	96
	Broadleaved Evergreen Shrub	Ilex glabra	Inkberry Holly	24"–36"	57	6	23	1311
	Broadleaved Evergreen Shrub	Cotoneaster divaricatus	Cotoneaster	24"–36"	45	6	22	990
	Low Maintenance Ground Cover		Wildflower Seed Mix					
						TOTAL SITE CANOPY		22719

NOTE: Existing trees to remain within School Facilities Area are not counted towards total site canopy

NOTE: All landscaping shall be installed by the first planting season following the issuance of the first certificate of occupancy within the development, or a phase thereof.



Graphic Scale: 1"=40'

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FILE NO.
18.020

LANDSCAPE PLAN

C15

LANDSCAPE SCHEDULE

Plant Symbol	Planting Type	Botanical Name	Common Name	Min. Cal./Height	Quantity	Total Height (ft) in 10 Yrs	Canopy SF	Total Canopy SF
	Large Deciduous Tree	Fagus grandifolia	American Beech	1½"–1¾"	21	20	227	4767
	Large Deciduous Tree	Querus bicolor	Swamp White Oak	2½"	9	31	299	2691
	Large Deciduous Tree	Tilia tomentosa "Green Mountain"	"Green Mountain" Silver Linden	2½"	10	25	276	2760
	Screening Evergreen	Cryptomeria japonica "Yoshino"	Cryptomeria Yoshino	4'–5' Ht.	44	25	123	5412
	Ornamental Tree	Cornus florida	Flowering Dogwood	6–7' Ht.	15	17	124	1860
	Ornamental Tree	Cercis canadensis	Eastern Redbud	6–7' Ht.	13	17	124	1612
	Ornamental Tree	Prunus subhirtella 'Pendula Rosa'	Weeping Cherry	6–7' Ht.	10	15	77	770
	Deciduous Shrub	Viburnum plicatum	Snowball Viburnum	24"–36"	9	8	50	450
	Deciduous Shrub	Buddleia davidii	Butterfly Bush	24"–36"	6	7	16	96
	Broadleaved Evergreen Shrub	Ilex glabra	Inkberry Holly	24"–36"	57	6	23	1311
	Broadleaved Evergreen Shrub	Cotoneaster divaricatus	Cotoneaster	24"–36"	45	6	22	990
	Low Maintenance Ground Cover		Wildflower Seed Mix					
							TOTAL SITE CANOPY	22719

NOTE: Existing trees to remain within School Facilities Area are not counted towards total site canopy

LANDSCAPING REQUIRED:

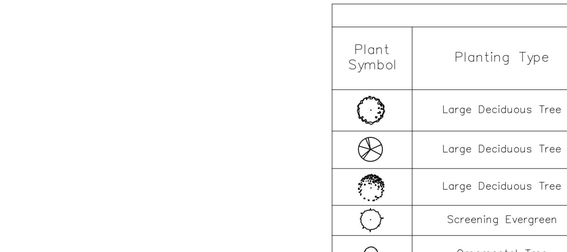
SITE REQUIREMENT (32.7.9.8): 10% CANOPY REQUIRED.
SITE AREA: 832,432 SF
SITE AREA: 832,432 SF x 10% = 83,243 SF
CANOPY REQUIRED: 83,243.2 SF
CANOPY PROVIDED: 22,719 SF
ACADEMIC WOODS AREA: +260,924 SF
283,643 SF PROVIDED

STREET TREES (32.7.9.5): LARGE SHADE TREES (1½"–1¾" MIN. CAL.)
50' O.C. PARALLEL TO ROAD
REQUIRED: RESERVOIR ROAD – 999 LF/ 50 = 19 TREES
PROVIDED: 20 LARGE SHADE TREES

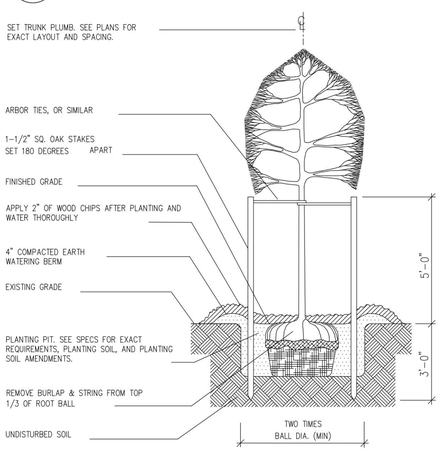
INTERIOR/PARKING LANDSCAPE (32.7.9.6): 5% OF PARKED PAVED AREA.
43,761.2 SF x 5% = 2,188.1 SF
REQUIRED: 2,188.1 SF
PROVIDED: 3,286 SF

INTERIOR/PARKING LANDSCAPE (32.7.9.6): LARGE SHADE TREES (1"–1¼" MIN. CAL.)
95 PARKING SPACES (95/10 = 9.5)
REQUIRED: 10 LARGE SHADE TREES
PROVIDED: 19 LARGE SHADE TREES

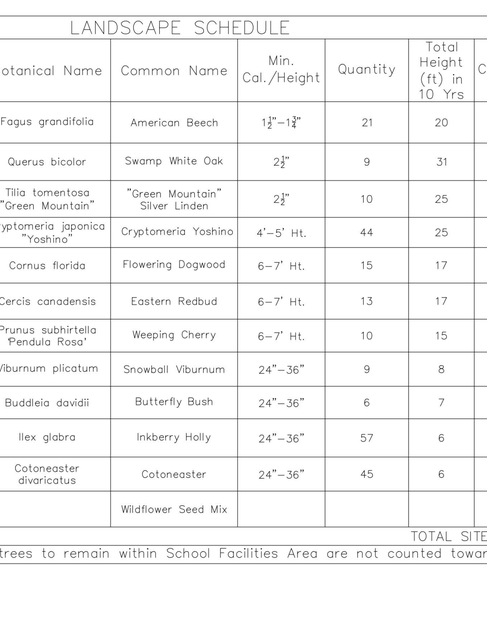
NOTES:
1. Contractor to apply mulch bedding around all proposed trees and shrubs. All other landscaped areas shall be sodded.
2. All site plantings of trees and shrubs shall be allowed to reach, and be maintained at, mature height; the topping of trees is prohibited. Shrubs and trees shall be pruned minimally and only to support the overall health of the plant.
3. All landscaping and screening shall be maintained in a healthy condition by the current owner or property owners' association and replaced when necessary. Replacement material shall comply with the approved landscape plan.
4. Visibility of all mechanical equipment from the entrance corridor must be eliminated.
5. All landscaping shall be installed by the first planting season following the issuance of the first certificate of occupancy within the development, or a phase thereof.



1 C16 SHRUB PLANTING DETAIL
Not To Scale



2 C16 TREE PLANTING DETAIL
Not To Scale



Source: Va. DSWC

Plate 3.38-2

3 C16 TREE PROTECTION FENCING

County of Albemarle
Conservation Plan Checklist – To be placed on Landscape Plans
(Handbook, pp III-284-111-297 for complete specifications)

1. **The following items shall be shown on the plan:**
   - ☐ Trees to be saved;
   - ☑ Limits of clearing (outside dripline of trees to be saved);
   - ☑ Location and type of protective fencing;
   - ☐ Grade changes requiring tree wells or walls;
   - ☐ Proposed trenching or tunneling beyond the limits of clearing.
2. **Markings:**
   - ☑ All trees to be saved shall be marked with print or ribbon at a height clearly visible to equipment operators.
   - ☑ No grading shall begin until the tree marking has been inspected and approved by a County Inspector.
3. **Pre-Construction Conference:**
   - ☑ Tree preservation and protection measures shall be reviewed with the contractor on site.
4. **Equipment Operation and Storage:**
   - ☑ Heavy equipment, vehicular traffic and storage of construction materials including soil shall not be permitted within the driplines of trees to be saved.
5. **Soil Erosion and Stormwater Detention Devices:**
   - ☑ Such devices shall not adversely affect trees to be saved.
6. **Fires:**
   - ☑ Fires are not permitted within 100 feet of the dripline of trees to be saved.
7. **Toxic Materials:**
   - ☑ Toxic materials shall not be stored within 100 feet of the dripline of trees to be saved.
8. **Protective Fencing:**
   - ☑ Trees to be retained within 40 feet of a proposed building or grading activity shall be protected by fencing.
   - ☑ Fencing shall be in place and shall be inspected and approved by a County Inspector prior to grading or construction.
9. **Tree Wells:**
   - ☐ When the ground level must be raised within the dripline of a tree to be saved, a tree well shall be provided and a construction detail submitted for approval.
10. **Tree Walls:**
    - ☐ When the ground level must be lowered within the dripline a tree to be saved, a tree wall shall be provided; and a construction detail submitted for approval.
11. **Trenching and Tunneling:**
    - ☐ When trenching is required within the limits of clearing, it shall be done as far away from the trunks of trees as possible. Tunneling under a large tree shall be considered as an alternative when it is anticipated that necessary trenching will destroy feeder roots.
12. **Cleanup:**
    - ☑ Protective fencing shall be the last items removed during the final cleanup.
13. **Damaged Trees:**
    - ☑ Damaged trees shall be treated immediately by pruning, fertilization or other methods recommended by a tree specialist.

NOTE: IT IS THE DEVELOPER'S RESPONSIBILITY TO CONFER WITH THE CONTRACTOR ON TREE CONSERVATION REQUIREMENTS.

OWNER SIGNATURE (DATE) October 17, 2020

CONTRACT PURCHASER SIGNATURE (DATE)

5/1/06 Page 1 of 1

4 C16 CONSERVATION PLAN CHECKLIST

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COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
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3/22/23
PROFESSIONAL ENGINEER

MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA

SUBMISSION:
2022.06.28

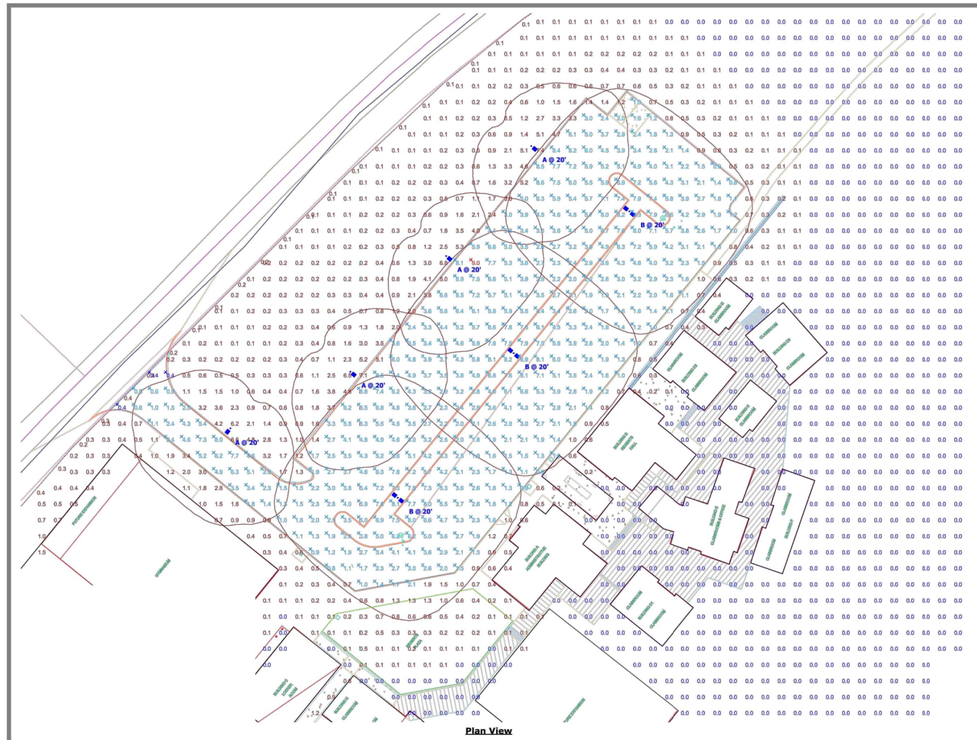
REVISION:
2022.09.07 [Central Systems Request - ACSA]
2022.09.27 [ACSA]
2023.01.04 [SPA Submit 2]
2023.03.23 [SPA Submit 3]

FILE NO.
18.020

LANDSCAPE DETAILS

C16

Lighting Plan Notes:
1. Athletic field light poles not to exceed 70'.
2. Outdoor lighting of the athletic field shall not continue past 10 PM.
3. The spillover of lighting from luminaires onto public roads and property in residential or rural areas zoning districts shall not exceed one-half foot candle.
4. All outdoor luminaires emitting 3,000 lumens or greater shall be equipped with a full cut-off fixture.
5. All outdoor lighting, regardless of amount of lumens, shall be arranged or shielded to reflect light away from adjoining residential districts and away from adjacent roads.



Plan View

PARKING LOT SITE LIGHTING PLAN

Schedule

Symbol	Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
	A		4	Lithonia Lighting	ESX1 LED P3 40K R3	ESX LED Area Luminaire Size 1 P3 Lumen Package 4000K CCT Type R3 Distribution	1	20658	1	146.35	 Max: 11334cd
	B		3	Lithonia Lighting	ESX1 LED P3 40K R5	ESX LED Area Luminaire Size 1 P3 Lumen Package 4000K CCT Type R5 Distribution	1	21680	1	292.7	 Max: 8396cd

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Parkng Lot and Entrance	✕	3.9 fc	9.0 fc	0.4 fc	22.5:1	9.8:1

CS CONTRACTOR SELECT — LITHONIA LIGHTING

Catalog Number
Notes
Type



Contractor Select™

ESX1 LED

Area Luminaire

The ESX1 LED area luminaire provides the combination of best product, best price and best delivery and is ideal for replacing 150W to 400W HID luminaires. ESX provides up to 76% energy savings, long service life and fast payback. All ESX1 luminaires feature adjustable light output, providing two light levels from each luminaire, allowing greater flexibility in the field and on distributors' shelves. ESX1 LED is competitively priced and always in stock for quick delivery.

FEATURES:
- Replaces 150W to 400W HID
- 8,000 to 25,000 lumens
- Adjustable Light Output (ALO) technology (default set to high)
- Type 3 optic available in 4000K and 5000K
- Reversible arm mounts onto minimum 3.5" round and square poles

5 YEAR warranty

Luminaire Package	CCT	High Lumens	High Watts	Low Lumens	Low Watts	Finish	Voltage	Catalog Number	CI Code	UPC	Pallet qty.	Replaces Up To
ESX1 LED P2	4000K	14,000	98W	8,000	50W	DARK BRONZE	120-277V	ESX1 LED P2 40K R3 MVOLT UPA BLS DDBXD M2	*269PG3	0019499438302	80	150W to 250W
	5000K	14,000	98W	8,000	50W	DARK BRONZE	120-277V	ESX1 LED P2 50K R3 MVOLT UPA BLS DDBXD M2	*269PGY	0019499438555	80	
ESX1 LED P4	4000K	25,000	190W	21,000	146W	DARK BRONZE	120-277V	ESX1LED P4 40K R3 MVOLT UPA BLS DDBXD M2	*269PG4	0019499438340	80	400W
	5000K	25,000	190W	21,000	146W	DARK BRONZE	120-277V	ESX1LED P4 50K R3 MVOLT UPA BLS DDBXD M2	*269PRY	0019499438358	80	

Note: Not all ESX1 configurations/options are included in the Contractor Select program. More configurations are available. Click here or visit www.acuitybrands.com and search for ESX1 LED.
All luminaires feature adjustable light output, a reversible arm for mounting on round and square poles and dark bronze finish. The lumens output and input watts shown are nominal values.

CONTRACTOR SELECT ESX1 SERIES LED — Page 1 of 2

CS CONTRACTOR SELECT — LITHONIA LIGHTING

Specifications

INTENDED USE:
The ESX offers a complete area lighting package providing everything needed to replace 150W to 400W HID area luminaires. Adjustable light output provides two light levels from one product, allowing greater flexibility while helping reduce inventory costs.

CONSTRUCTION:
The ESX LED area luminaire features a rugged die cast aluminum main body housing that uses heat dissipating fins and flow-through venting to provide optimal thermal management that both enhances LED efficacy and extends component life. The mounting arm is made of extruded aluminum and its reversible function allows for mounting on round and square poles. The luminaires optics are IP66 rated, and sealed against moisture and environmental contaminants. The low profile design results in a low EPA. ESX is rated for minimum 1.5 G vibration load per ANSI C136.31.

ELECTRICAL:
Light engines consist of high efficacy LEDs with LED lumen maintenance greater than L87/100,000 hours. Color temperature (CCT) options of 4000K and 5000K with minimum CRI of 70 are available. Electronic drivers are 0-10V, capable of continuous dimming, and ensure system power factor >90% and THD <20%. All luminaires have 6kV surge protection. Driver input voltages available in MVOLT (120-277V) and HVOLT (347-480V).

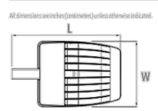
INSTALLATION:
ESX features an extruded aluminum arm that is reversible allowing it to mount on both round and square poles. ESX1 can be mounted onto minimum 3.5" square and round poles. An accessory wall mount bracket is also available.

LISTINGS:
UL listed to meet U.S. and Canadian standards. Suitable for wet locations. Rated for -40°C minimum ambient.
DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY:
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions.
Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Dimensions

All dimensions are inches (centimeters) unless otherwise indicated.



Luminaire	Length (W)	Width (W)	Height (H)	Weight	EPA
ESX1 LED P2	19.9" (50.5 cm)	12.0" (30.5 cm)	2.9" (7.4 cm)	19 lbs (8.5 kg)	0.40 ft2
ESX1 LED P4				31.2 lbs (13.1 kg)	0.94 ft2



ADJUSTABLE LIGHT OUTPUT (ALO)
Internal Switch - Provides two light levels for greater flexibility within one product (default set to high).

Luminaire	Lumens (high)	Lumens (low)	HID Replacement
ESX1 LED P2	14,000	8,000	150W to 250W
ESX1 LED P4	25,000	21,000	400W

UPA - REVERSIBLE ARM MOUNT:
The UPA reversible arm is designed to mount onto round and square poles. During installation, the flat end of the arm is placed against the flat surface on square poles. When using with round poles, the arm can be turned around so that the curved end is placed against the curvature on round poles. ESX1 can be mounted onto minimum 3.5" square and round poles.



One Lithonia Way, Conyers, GA 30012 | 1-800-705-7018 | www.lithonia.com
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CONTRACTOR SELECT ESX1 SERIES LED — Page 2 of 2

FEDERATED LIGHTING VIRGINIA

REGENTS SCHOOL

Designer
FLVA BAP
Date
09/14/2022
Scale
Not to Scale
Drawing No.

Summary

2 of 3

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MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

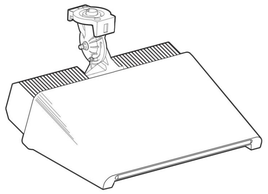
ALBEMARLE COUNTY, VIRGINIA
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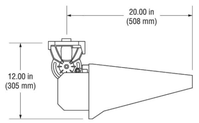
FILE NO.
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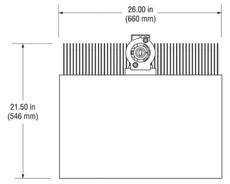
LIGHTING PLAN

C17

Datasheet: **TLC-LED-900 Luminaire and Driver**







Luminaire Data

Weight (luminaire)	40 lb (18 kg)
UL listing number	E338094
UL listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
CE Declaration	LVD, EMC, RoHS
Ingress protection, luminaire	IP65
Impact rating	IK07
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)
UL, IEC ambient temperature rating, luminaire	50°C (122°F)

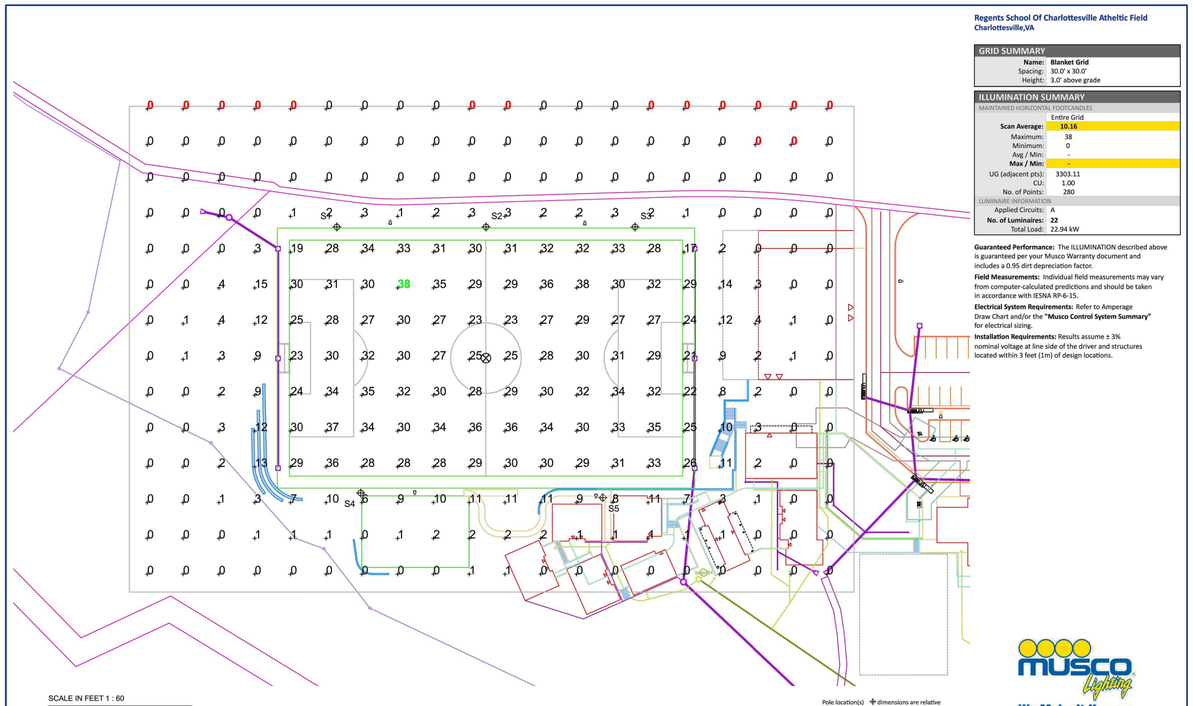
Photometric Characteristics

Projected lumen maintenance per IES TM-21-11	
L90 (20k)	>120,000 h
L80 (20k)	>120,000 h
L70 (20k)	>120,000 h
Lumens[1]	89,600
CIE correlated color temperature	5700 K
Color rendering index (CRI)	75 typ, 70 min
LED binning tolerance	7-step MacAdam Ellipse

Footnotes:

1) Incorporates appropriate dirt depreciation factor for life of luminaire.

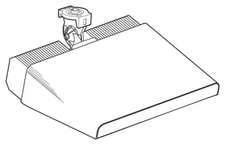
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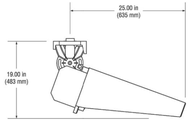


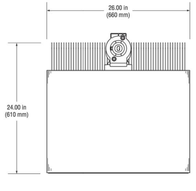
Lighting Plan Notes:

1. Athletic field light poles not to exceed 70'.
2. Outdoor lighting of the athletic field shall not continue past 10 PM.
3. The spillover of lighting from luminaires onto public roads and property in residential or rural areas zoning districts shall not exceed one-half foot candle.
4. All outdoor luminaires emitting 3,000 lumens or greater shall be equipped with a full cut-off fixture.
5. All outdoor lighting, regardless of amount of lumens, shall be arranged or shielded to reflect light away from adjoining residential districts and away from adjacent roads.

Datasheet: **TLC-LED-1200 Luminaire and Driver**







Luminaire Data

Weight (luminaire)	45 lb (20 kg)
UL listing number	E338094
UL listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
CE Declaration	LVD, EMC, RoHS
Ingress protection, luminaire	IP65
Impact rating	IK07
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)
UL, IEC ambient temperature rating, luminaire	50°C (122°F)

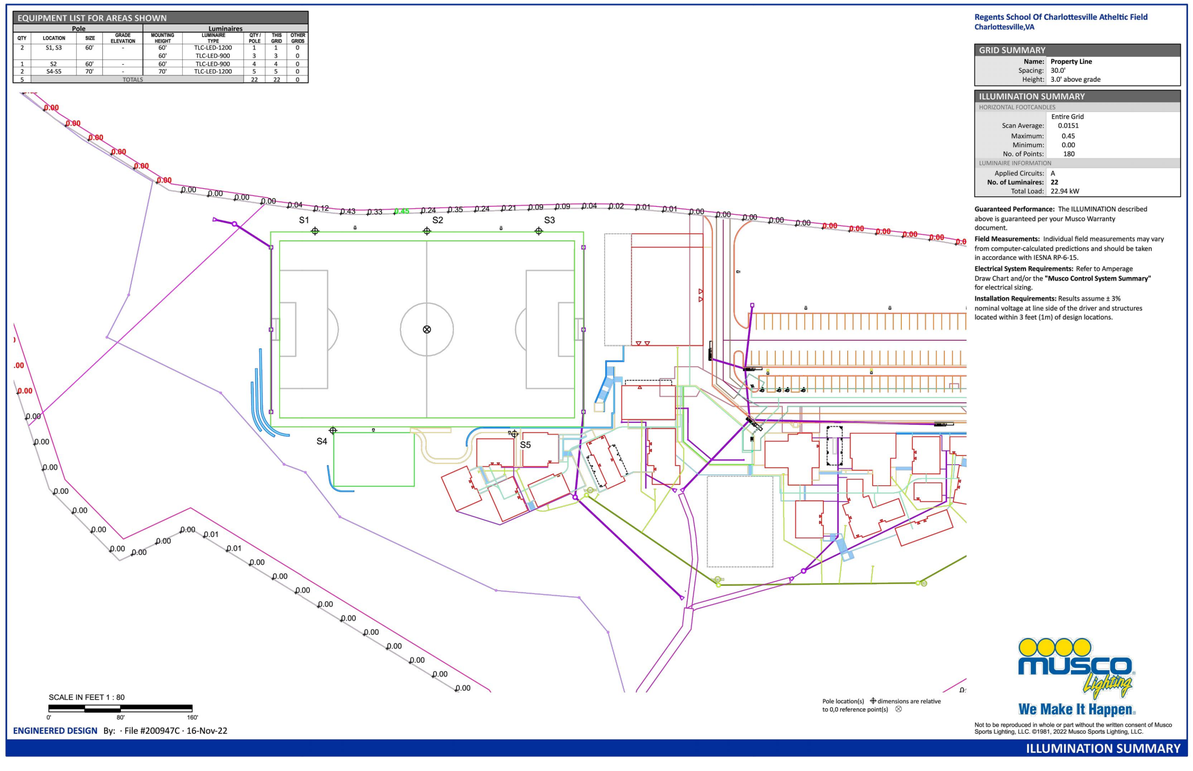
Photometric Characteristics

Projected lumen maintenance per IES TM-21-11	
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Lumens[1]	136,000
CIE correlated color temperature	5700 K
Color rendering index (CRI)	75 typ, 70 min
LED binning tolerance	7-step MacAdam Ellipse

Footnotes:

1) Incorporates appropriate dirt depreciation factor for life of luminaire.

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MAJOR SITE PLAN AMENDMENT

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2023.01.04 [SPA Submit 2]

2023.03.23 [SPA Submit 3]

FILE NO.

18.020

LIGHTING PLAN

C18

Lane Closure Operation with Temporary Traffic Barrier [1]
(Figure TTC-20.2)
NOTES

Guidance:

1. *See Table 6H-5, page 6H-6, for recommended spacing of advance warning signs.*
2. *SHOULDER CLOSED (W21-5a) signs should be used on Limited-Access Highways where there is no opportunity for disabled vehicles to pull off the roadway (see Figure TTC-6).*
3. *When closing a lane, a PCMS should be used in advance of the first warning sign if all of the left side signs cannot be installed.*[2]
4. *If drivers cannot see a pull-off area beyond the closed shoulder, information regarding the length of the shoulder closure should be provided in feet or miles, as appropriate.*
5. *An emergency pull-off area should be provided per Section 6G.18 and Temporary Traffic Control Figure TTC-8.*

Standard:

6. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**
7. **Group 2 channelizing device spacing shall be at the following:**

Group 2 Channelizing Device Spacing							
Location Spacing	Speed Limit (mph)		Location Spacing	Speed Limit (mph)		Location Spacing	Speed Limit (mph)	
	0 -35	36 +		0 -35	36 +		0 -35	36 +
Transition	20'	40'	Travelway	40'	80'	Construction Access	80'	120'
Construction access spacing may be increased to this distance, but shall not exceed one access per ¼ mile.								

8. **For taper lengths, see TTC-19.**[2]
9. **See Table 6H-6 for barrier transition flare rate.**[2] **When the barrier transition flare**[1] **is on a horizontal alignment, the total offset shall be prorated around the curve in lieu of a straight-line flare.**
10. **End treatment of a barrier in order of preference:**
    a. **Where guardrail exists, attach to barrier with appropriate fixed object attachment.**
    b. **Where cut slope exists, bury barrier into cut slope and provide for drainage as needed.**
    c. **Extend end of barrier until it is beyond the established clear zone (see Figure 2 on Page A-4 of Appendix A for clear zone values).**
    d. **When barrier end is inside the established clear zone, attenuator service Type I or Type II shall be used. Refer to L&D special design drawings.**
11. **Barrier panels 8 inches in width and 12 inches in height shall be placed on top of the concrete barrier and spaced on 40' centers along the transition or taper sections and spaced on 80' centers along the parallel or tangent sections. Reflectorized surface shall be fluorescent orange prismatic lens sheeting. The light at the beginning of the barrier run and at the breakpoint where the barrier becomes parallel to the roadway shall be a Type B flashing light. Barrier delinators shall be spaced on 20' centers along the transition or taper sections and spaced on 80' centers and centered**[2] **in-between the barrier panels along the parallel or tangent sections**[2] **approximately 24 inches up from the roadway surface.**

Guidance:

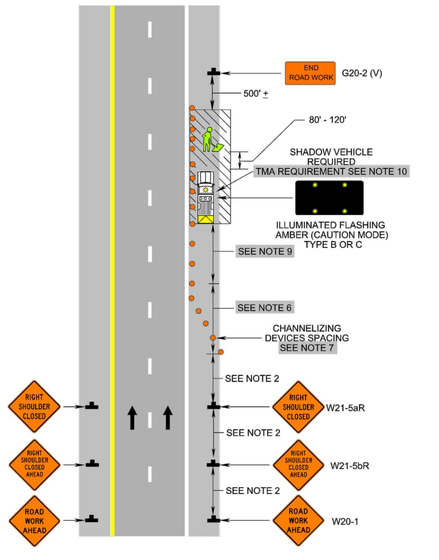
12. *Eradication of existing pavement markings should be as shown in Figure TTC-55.*

Option:

13. The barrier shown in this typical application is an example of one method that may be used to close a shoulder and lane[2] on a long-term project.
14. Long-term transvere rumble strips may be installed to enhance the work zone see Chapter 6F, Section 6F-99 paragraph 12 and 13 for installation guidance and spacing.[2]

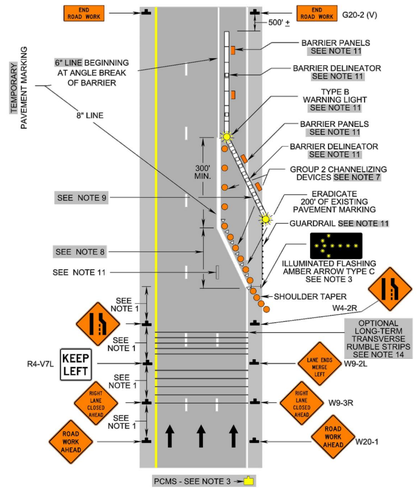
1: Revision 1 – 4/1/2015
2: Revision 2 – 7/1/2018

Stationary Operation on a Shoulder
(Figure TTC-4.2)



1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Lane Closure Operation with Temporary Traffic Barrier [1]
(Figure TTC-20.2)



1: Revision 1 – 4/1/2015
2: Revision 2 – 7/1/2018

Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)
NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.*
2. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.*
3. *To maintain efficient traffic flow in a flagging operation on a two-lane roadway, the maximum time motorists should be stopped at a flagger station is 8 minutes for high volume roadways (average daily traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than 500 vehicles per day). For additional information see Section 6E.07.*[2]

Standard:

4. **Portable Temporary Rumble Strips (PTRS) shall be used as noted in Section 6F.99.**
5. **Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).**
6. **All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).**
7. **Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6.**[1]
8. **A shadow vehicle with at least one high intensity amber rotating, flashing, or**[1] **oscillating light shall be parked 80'-120' in advance of the first work crew.**

Option:

8. A SLOW (W21-V10) sign[2] may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

9. *If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the signs, and if used the PTRS*[1] *should be readjusted at greater distances.*
10. *When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).*

Standard:

11. **At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).**

Option:

12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).

Standard:[1]

14. **When used**[2]**, three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.**

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Maintenance of Traffic:
TTC 23.2 to be used during entrance installation. TTC 23.2 with traffic barriers from TTC 20.2 to be used for regrading of Reservior Road. For should widening, use TTC 4.2.

Typical Traffic Control
Stationary Operation on a Shoulder
(Figure TTC-4.2)
NOTES

Standard

1. **For long-term stationary work (more than 3 days) on divided highways having a median wider than 8', sign assemblies on both sides of the roadway shall be required as shown (ROAD WORK AHEAD (W20-1), RIGHT SHOULDER CLOSED AHEAD (W21-5bR), RIGHT SHOULDER CLOSED (W21-5aR)**[1]**), even though only one shoulder is being closed. For operations less than 3 days in duration, sign assemblies will only be required on the side where the shoulder is being closed.**

Guidance

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*

Option:

3. The SHOULDER WORK (W21-5) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.
4. For short duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity amber rotating, flashing, or[1] oscillating lights is used.

Standard:

5. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or**[1] **oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or**[1] **oscillating, lights.**
6. **Taper length (L) shall be at the following:**

Taper Length L											
Speed Limit (mph)	Lane Width (Feet)				Remarks	Speed Limit (mph)	Lane Width (Feet)				Remarks
	9	10	11	12			9	10	11	12	
25	95	105	115	125	L=S*W/60	50	450	500	550	600	L=SW
30	135	150	165	180	L=S*W/60	55	495	550	605	660	L= SW
35	185	205	225	245	L=S*W/60	60	540	600	660	720	L=SW
40	240	270	295	320	L=S*W/60	65	585	650	715	780	L=SW
45	405	450	495	540	L=SW	70	630	700	770	840	L=SW
Limited Access highways shall use a 1000' merging taper regardless of the posted speed, for shifting taper see Table 6H.2[2]											
Shoulder Taper = ⅓ L Minimum											

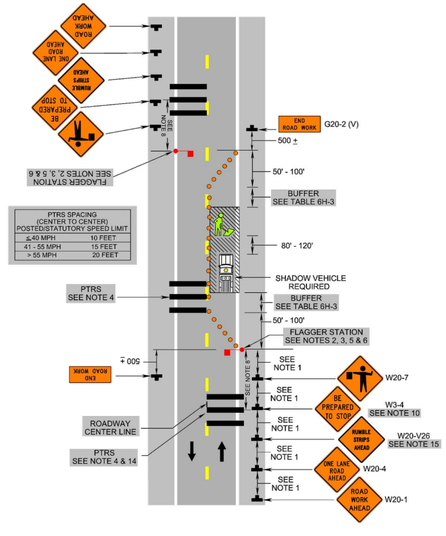
7. **Channelizing device spacing shall be at the following:**

Channelizing Device Spacing							
Location Spacing	Speed Limit (mph)		Location Spacing	Speed Limit (mph)		Location Spacing	Speed Limit (mph)	
	0 -35	36 +		0 -35	36 +		0 -35	36 +
Transition	20'	40'	Travelway	40'	80'	*Construction Access	80'	120'
*Construction access spacing may be increased to this distance, but shall not exceed one access per ¼ mile.								

8. **On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.**
9. **The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
10. **A truck-mounted attenuator (TMA) shall be used on the shadow vehicle on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph for operations with a duration greater than 60 minutes.**
11. **When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.**

1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)

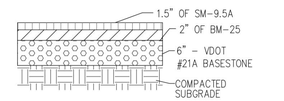


1: Revision 1 – 4/1/2015
2: Revision 2 – 9/1/2019

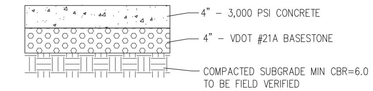
Virginia Department of Transportation Details

201.01	Standard 6" Curb (CG-2)
201.03	Combination 6" Curb & Gutter (CG-6)
203.04	Method of Treatment
303.02	Asphalt Pavement Widening

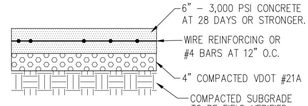
The Standard Drawings contained in the VDOT Road & Bridge Standards are signed and sealed engineering drawings that are copyrighted materials of VDOT and the Commonwealth of Virginia. VDOT's policy is to offer the Standard Drawings in a secure electronic format and each Standard is available on this website.
http://www.virginiadot.org/business/locdes/vdot_road_and_bridge_standards.asp



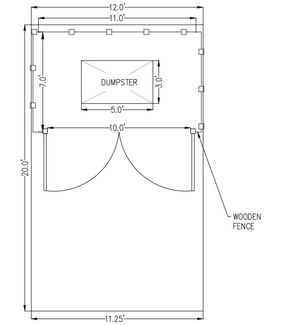
1 C19 TYP. PAVEMENT SECTION
Not To Scale

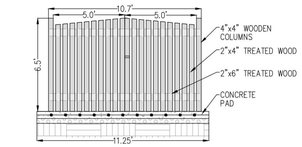


2 C19 TYP. SIDEWALK SECTION
NOT TO SCALE



3 C19 DUMPSTER PAD DETAIL
Not To Scale



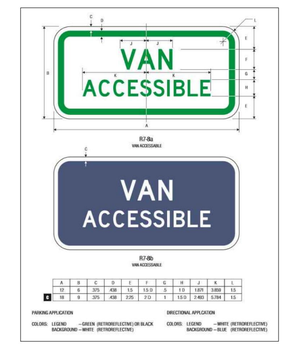


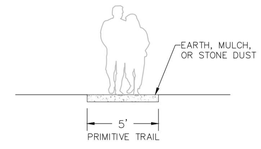
4 C19 DUMPSTER DETAIL
Not To Scale



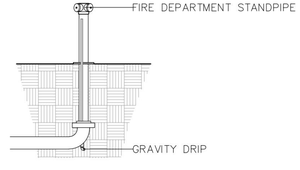
LEGEND – GREEN (RETROREFL). WHITE SYMBOL ON BLUE (RETROREFL)
BACKGROUND – WHITE (RETROREFL)
*Reduce spacing 50%.
**See page 6-31.
***See page 6-2 for arrow design.

5 C19 HC PARKING SIGNAGE
Not To Scale





6 C19 PRIMITIVE TRAIL DETAIL
SCALE: 1"=5'



7 C19 STANDPIPE DETAIL – DRY SYSTEM
Not To Scale

SHIMP ENGINEERING PC
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JUSTIN M. SHIMP
Lic. No. 45183
3/23/23
PROFESSIONAL ENGINEER

MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA
SUBMISSION:
2022.06.28
REVISION:
2022.09.07 [Central Systems Request - ACSA]
2022.09.27 [ACSA]
2023.01.04 [SPA Submit 2]
2023.03.23 [SPA Submit 3]

FILE NO.
18.020

SITE DETAILS & MANTENANCE OF TRAFFIC

C19

NOTE: SANITARY LATERAL CONNECTIONS TO BE ADJUSTED AS ON-SITE PLUMBING IS TO BE DETERMINED

REGENTS SCHOOL SITE

NEW 60" DIA. PUMP STATION TO SERVE REGENTS SCHOOL

EX. 3" FORCE MAIN TO ACSA SANITARY SEWER SYSTEM

TRINITY PRESBYTERIAN CHURCH

5.48 ACRE SWM FOREST & OPEN SPACE EASEMENT DB 5658 PG 269

FUTURE SCHOOL STRUCTURE

EX. ACSA MANHOLE PER APPROVED SDP2020-18

EX. GRAVITY SEWER 45 LF PER APPROVED SDP2020-18

EXISTING ACSA MANHOLE

RESERVOIR RD

FONTAINE AVE. EXT.

GEORGE DEAN DR

80 0 80 160 240
Graphic Scale: 1"=80'

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2023.03.23 [SPA Submit 3]

FILE NO.
18.020

CENTRAL SEWER OVERVIEW

C20



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2023.03.23 [SPA Submit 3]

FILE NO.
18.020

SANITARY SEWER FORCE MAIN PLAN

C21



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MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA

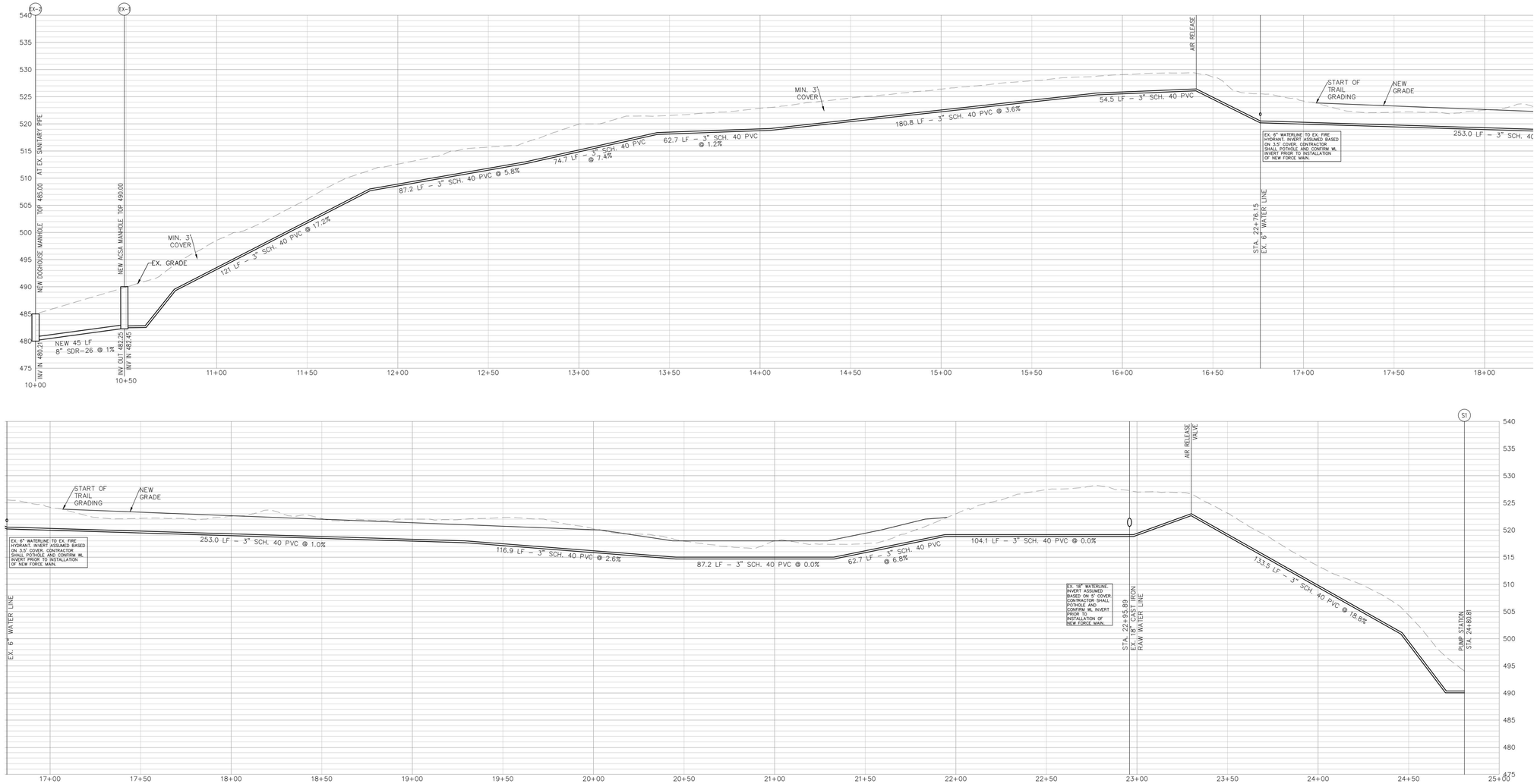
SUBMISSION:
2022.06.28

REVISION:
2022.09.07 [Central Systems Request - ACSA]
2022.09.27 [ACSA]
2023.01.04 [SPA Submit 2]
2023.03.23 [SPA Submit 3]

FILE NO.
18.020

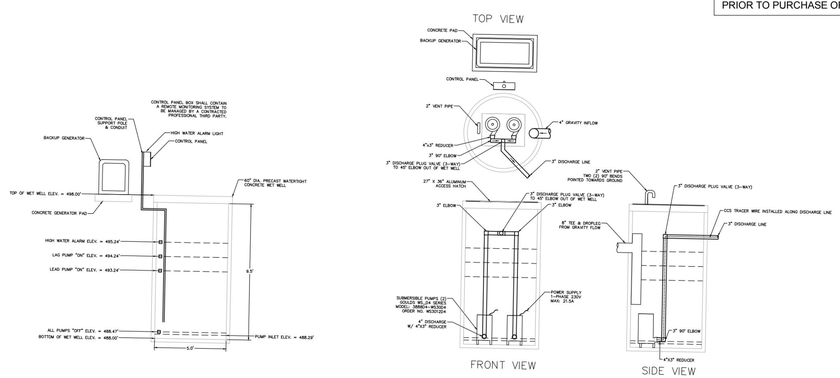
SANITARY SEWER GRAVITY FLOW PLAN

C22



1 / C23 FORCE MAIN PROFILE
HORIZ: 1"=30'
VERT: 1"=10'

CONTRACTOR SHALL OBTAIN SHOP DRAWINGS FROM VENDOR FOR PUMP ASSEMBLY, GENERATOR, AND CONTROL PANELS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW OF ANY PROPOSED CHANGES AND FINAL APPROVAL OF DRAWINGS PRIOR TO PURCHASE OF PUMP-RELATED EQUIPMENT.



2 / C23 SANITARY SEWER PUMP STATION DETAILS
Scale: 1"=5'

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COMMONWEALTH OF VIRGINIA
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3/23/23
PROFESSIONAL ENGINEER

MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA

SUBMISSION:
2022.06.28

REVISION:
2022.09.07 [Central Systems Request - ACSA]
2022.09.27 [ACSA]
2023.01.04 [SPA Submit 2]
2023.03.23 [SPA Submit 3]

FILE NO.
18.020

FORCE MAIN PROFILE & SANITARY SEWER PUMP STATION DETAILS

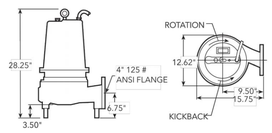
C23

APPLICATION DATA AND CONSTRUCTION DETAILS

Maximum Solid Size		3"
Minimum Casing Thickness		¼"
Casing Corrosion Allowance		¼"
Maximum Working Pressure		30 PSI
Maximum Submergence		50 feet
Minimum Submergence		Fully submerged for continuous operation 6" below top of motor for intermittent operation
Maximum Environmental Temperature		40° C (104° F) continuous operation, 60° C (140° F) intermittent operation
Power Cable - Type (See Motor Information for AWG data/size.)		Type SJTOW: single phase, 1½ and 2 HP Type STOW: single phase, 1½ – 3 HP and 5 HP, 460 V Type STOW: single phase, 3 and 5 HP; three phase 5 HP, 230 V and 7½ HP
Motor Cover, Bearing Housing, Seal Housing, Casing		Gray Cast Iron – ASTM A48, Class 30
Impeller – Standard, Optional		Gray Cast Iron – ASTM A48 or Cast Bronze – ASTM B584 C87600
Motor Shaft		AISI 300 Series Stainless Steel
Motor Design		NEMA 56 Frame, oil filled with Class F Insulation
Motor Overload Protection		Single phase: on winding thermal overload protection auto reset Three phase: requires Class 10 overloads in control panel
External Hardware		300 Series Stainless Steel
Impeller Type		Semi-open with pump out vanes on back shroud
Oil Capacity - Seal Chamber		1.5 quarts
Oil Capacity - Motor Chamber		1½-5 HP single and three phase: 7 quarts 7½ HP three phase: 6.5 quarts
Mechanical Seals – Standard	Upper	Carbon/Ceramic; Type 21
	Lower	Silicon Carbide/Silicon Carbide; Type 31
Mechanical Seals – Optional Lower		Silicon Carbide/Tungsten Carbide; Type 31

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:

- Sewage systems, Flood and Pollution Control, Dewatering/Effluent, Farms, Hospitals, Trailer Courts, Motels

SPECIFICATIONS

Pump:

- Maximum solid size: 3"
- Discharge size: 4", 125 # ANSI flange
- Maximum capacity: 620 GPM
- Maximum total head: 60 feet
- 300 Series stainless steel fasteners
- 20' Power cord
- Standard silicon carbide/silicon carbide outer seal

Motor:

- Maximum ambient temperature: 104° F (40° C) continuous duty, 140° F (60° C) intermittent duty
- Rated for continuous duty when fully submerged
- Insulation: Class F
- 60 Hertz
- Single row ball bearings
- 300 Series stainless steel keyed shaft

Single Phase:

- 1.5 - 5 HP; 208 and 230 volts
- Built-in thermal overloads with automatic reset
- Built-in capacitors

Three Phase:

- 1.5 - 7.5 HP; 200, 230, 460 and 575 volts
- Class 10 overload protection must be provided in control panel

MOTORS

- Fully submerged in oil-filled chamber: High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal for complete protection against outside environment.
- Class F insulation
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

MODEL AND MOTOR INFORMATION

Order No.	HP	Phase	Volts	RPM	Impeller Dia. (in.)	Maximum Amps	L.R. Amps	KVA Code	Power Cable	F.L. Motor Efficiency %	Resistance Start	Resistance Line-Line	Wt. (lbs.)
WS1518D4M	1.5	3	208	1750	5.63	17.2	50.8	B	14/4	80	NA	1.1	195
WS1512D4M			230			14.7	29.5	E		70		1.4	
WS1538D4M			200			11.5	40.9	H		81			
WS1532D4M			230			10.0	40.0	F		83			
WS1534D4M			460			5.0	20.0	F		83			
WS1537D4M			575			4.0	14.4	H		74			
WS1518D4	1.5	3	208	1750	6.25	17.2	50.8	B	14/4	80	NA	1.1	195
WS1512D4			230			14.7	29.5	E		70		1.4	
WS1538D4			200			11.5	40.9	H		81			
WS1532D4			230			10.0	40.0	F		83			
WS1534D4			460			5.0	20.0	F		83			
WS1537D4			575			4.0	14.4	H		74			
WS2018D4	2	3	208	1750	6.63	20.3	50.8	B	14/3	80	NA	1.1	200
WS2012D4			230			17.3	36.9	D		75		1.4	
WS2038D4			200			13.3	40.9	H		81			
WS2032D4			230			11.6	40.0	F		83			
WS2034D4			460			5.8	20.0	F		83			
WS2037D4			575			4.6	14.4	H		74			
WS3018D4	3	1	208	1750	7.00	25.5	50.8	B	10/3	80	NA	1.1	208
WS3012D4			230			21.5	46.4	G		79		1.0	
WS3038D4		3	200			16.6	53.8	G	10/4	85	NA		205
WS3032D4			230			14.4	49.5	H		83			
WS3034D4			460			7.2	24.8	H	14/4	83			
WS3037D4			575			5.8	17.3	G		78			
WS5012D4	5	3	230	1750	7.25	26.5	57.7	A	10/3	80	NA	1.0	213
WS5038D4			200			19.1	73.9	F	10/4	84		0.9	210
WS5032D4			230			16.6	63.6	E		85		1.2	
WS5034D4			460			8.3	31.8	E	14/4	85		4.8	
WS5037D4			575			6.6	22.8	E		80		7.4	
WS7532D4	7.5	3	230	1750	7.69	23.0	105.0	G	10/4	83	NA	0.7	225
WS7534D4			460			11.5	52.5	G		83		2.8	
WS7537D4			575			9.2	42.0	E		84		4.4	

2 C24 PUMP SPECIFICATIONS
Scale: N/A

Discharge Pipe Information		
Pipe 1	3" force main	
	Pipe 1	
Pipe length (feet)	1500	ft
Pipe diameter (inches)	3	in
Pipe C-factor	120	
Portion of Flow	1	
Cross-sectional area (feet)	0.049	ft
Hydraulic radius	0.063	ft

Suction water surface elevation (A)	488.00	feet
Suction water surface elevation (B)	489.00	feet
Discharge water surface elevation	490.00	feet
Static head (A)	2.0	feet
Static head (B)	1.0	feet

Daily Average Flowrates

Type:	Unit:	Number of Units:	gpd/ unit	Total (gpd)
Grade School w/ Showers	per student / staff	468	16	7,488
			Total	7,488

*day assumed to be 12-hr for purpose of this analysis.

Daily Peak Flowrates

Type:	Unit:	Number of Units:
Daily Average Flow	gpd (12-hr)	7,488
Daily Average Flow	gpm	10.40
Peaking Factor	n/a	2.5
Peak Daily Flow	gpm	26.01

Wet Well Sizing

Type:	Unit:	Number of Units:
Diameter	ft	5
Volume per foot	gallons	100
Wet Working Depth	ft	5.24
Wet Working Volume	gallons	5.95
Total Storage	gallons	1,422
Pumping Rate	gpm	75
Time to Empy	minutes	19

Duplex Pump (2 Pumps)	Parameter	Pressure
	Pipe Length, (ft)	1500
	Pipe Dia., (in)	3
	Hazen-Williams Coeff. C	120

*Piping from pump basin to discharge point

Minor Losses		
Type	K-values	# Fittings
Gate Valve	0.19	0
Flug Valve (99%open)	0.86	1
Butterfly Valve	0.4	0
Swing Check Valve	2.5	1
90° Bend	0.25	1
45° Bend	0.2	3
22.5° Bend	0.12	0
11.25° Bend	0.06	0
Tee (through)	0.6	0
Tee (side out)	1.8	0
Cross (through)	0.6	0
Cross (side out)	1.8	0
Reducer/ Increaser	0.1	0
Discharge to air	1	1

System Curve - Head Loss Calculations

Flowrate		Water Velocity In:	Dynamic Losses, ft		Total Dynamic Head		Total Dynamic Head (+20%)	
gpm	cfs	Velocity ft/s	Minor Losses	Pipe Friction	Max. Lift (ft)	Min. Lift (ft)	Max. Lift (ft)	Min. Lift (ft)
0	0	0	0	0	2.00	1.00	2.40	1.20
5	0.01	0.23	0.00	0.21	2.21	1.21	2.66	1.46
10	0.02	0.45	0.01	0.75	2.77	1.77	3.32	2.12
15	0.03	0.68	0.03	1.60	3.63	2.63	4.35	3.15
20	0.04	0.91	0.06	2.72	4.78	3.78	5.73	4.53
25	0.06	1.13	0.09	4.11	6.20	5.20	7.44	6.24
30	0.07	1.36	0.13	5.75	7.89	6.89	9.46	8.26
35	0.08	1.59	0.18	7.65	9.83	8.83	11.80	10.60
40	0.09	1.82	0.24	9.80	12.03	11.03	14.44	13.24
45	0.10	2.04	0.30	12.18	14.48	13.48	17.37	16.17
50	0.11	2.27	0.37	14.80	17.17	16.17	20.60	19.40
55	0.12	2.50	0.45	17.66	20.10	19.10	24.12	22.92
60	0.13	2.72	0.53	20.74	23.27	22.27	27.92	26.72
65	0.14	2.95	0.62	24.05	26.67	25.67	32.01	30.81
70	0.16	3.18	0.72	27.58	30.31	29.31	36.37	35.17
75	0.17	3.40	0.83	31.34	34.17	33.17	41.00	39.80
80	0.18	3.63	0.94	35.31	38.26	37.26	45.91	44.71
85	0.19	3.86	1.07	39.50	42.57	41.57	51.08	49.88
90	0.20	4.08	1.19	43.91	47.10	46.10	56.53	55.33
95	0.21	4.31	1.33	48.53	51.86	50.86	62.23	61.03
100	0.22	4.54	1.47	53.36	56.83	55.83	68.20	67.00

Wet Well Calculations

Wet Well Diameter 5 ft
Wet Well Height 10 ft

Pump Rate 75 gpm
*Pump rate is where system curve and pump curve cross

Min active wet well volume :

1) Min of 1minute pump rate time 75 gallons
2) 10 minutes pump cycle time (3 cycles/hr/pump) 187.5 gallons

Dimensions of sloped portion around base of wet well (ft) :

height = 1.00 width = 1.00

Volume per foot of depth of wet well : Volume of storage per ft of height 147 gal/ft

Depth (ft)	Volume (gal)
0	0
1	100
2	247
3	394
4	540
5	687
6	834
7	981
8	1128
9	1275
10	1422

3 C24 PUMP STATION CALCULATIONS
Scale: N/A

Wet Well

Inflow rate into Wet Well	Qin=	26.01 gpm	0.058 cfs
Discharge Flow Out of Wet Well	Qout=	75.00 gpm	0.167 cfs
Minimum cycle time between starts	Tmin=	5 min	
Min Storage Volume of Well	Vmin=	93.75 gal	

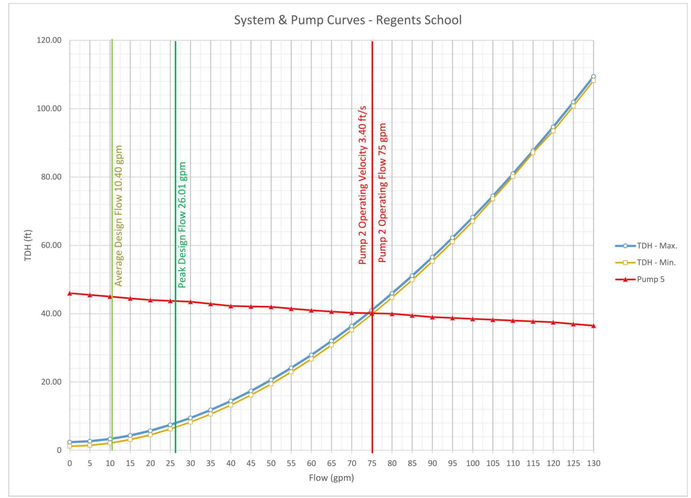
Height to start pump	5.24 ft	
Volume storage at pump start	723 gal	
Time to Start Pump from empty	25.39 min	0.42 hr
Time to Empty From Start	9.65 min	0.16 hr
Minimum cycle time between starts	5.00 min	0.08 hr
Total Cycle Time	14.65 min	0.24 hr
Cycles per Day (12 Hours)	23.70 cycles/12hr	
Cycles per hour	1.97 cycl/hr	
Max Cycles per hour	4.10 cycl/hr	

Minimum Submergence Hx

Fd= 0.020
Hx= 0.175 ft
Hmin= 4.775 ft

Pump settings :

1) Bottom of wet well	488.00 ft	
2) Pump Inlet	488.29 ft	
2) All pumps off	488.47 ft	
3) Lead pump on	493.24 ft	(Condition A)
4) Lag pump on	494.24 ft	(Condition B)
5) High Water Alarm	495.24 ft	
6) Top of wet well	498.00 ft	



1 C24 SYSTEM & PUMP CURVES
Scale: N/A

Pump Selection

Pump 5
Goulds
WS_D4 Series
Model: 3888D4
WS30D4
Oder No. WS3012D4
3" (Solids)
4" Discharge Flange
1-Phase 230V
1750 RPM
Max Amps: 21.5

Flow (gpm)	Pump 5 TDH TDH (ft)
0	46.00
5	45.50
10	45.00
15	44.50
20	44.00
25	43.75
30	43.50
35	42.88
40	42.25
45	42.13
50	42.00
55	41.50
60	41.00
65	40.63
70	40.25
75	40.13
80	40.00
85	39.50
90	39.00
95	38.75
100	38.50
105	38.25
110	38.00
115	37.75
120	37.50
125	37.00
130	36.50

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MAJOR SITE PLAN AMENDMENT

REGENTS SCHOOL

ALBEMARLE COUNTY, VIRGINIA

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2022.06.28

REVISION:
2022.09.07 [Central Systems Request - ACSA]
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SANITARY SEWER PUMP STATION CALCULATIONS

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