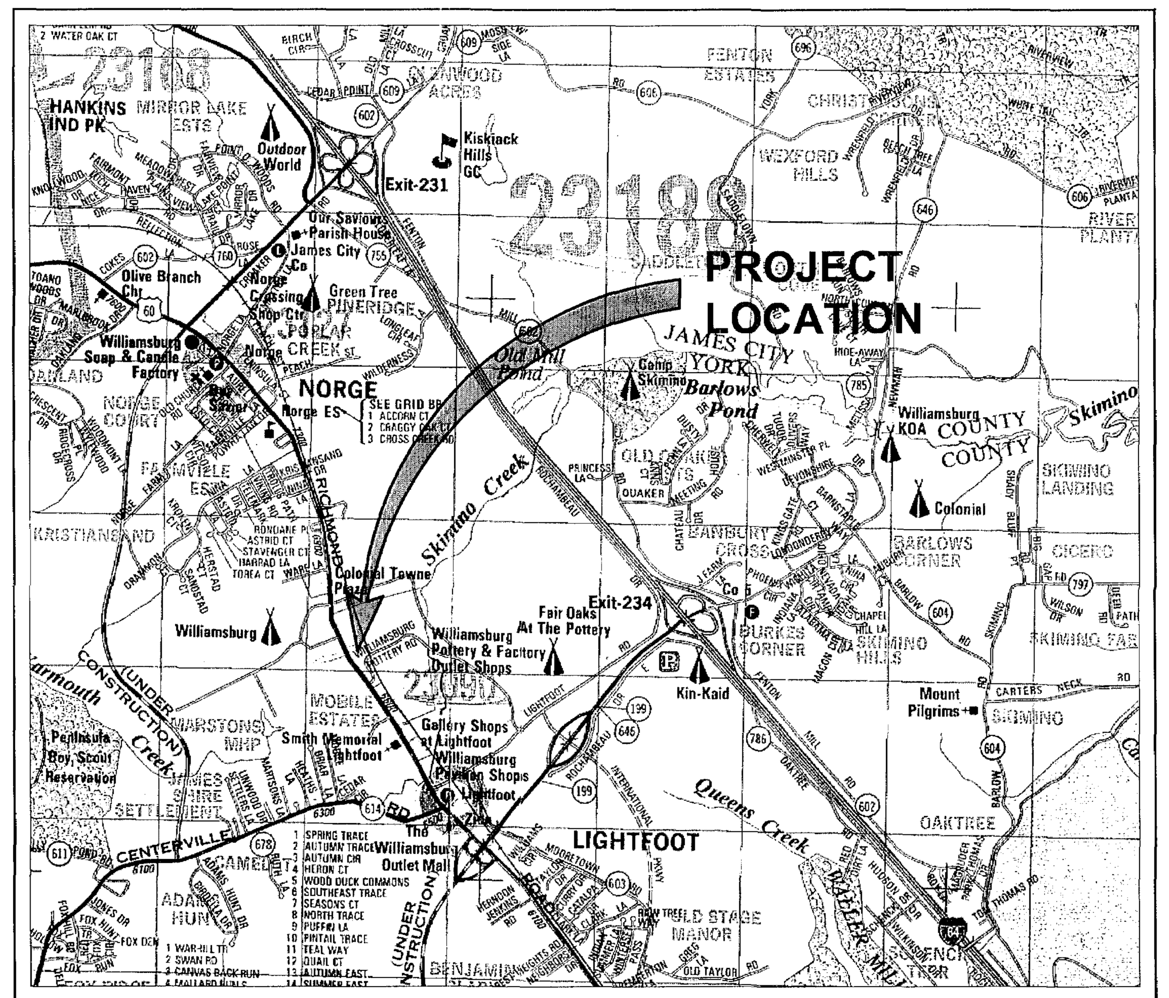
SP-0077-2010

Site Plan

For

Williamsburg Pottery

Stonehouse District James City County Virginia



VICINITY MAP
(Approximate Scale: 1"=2,000')
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County Project No.: SP-0077-2010
Original Submittal Date: 9/3/2010
Approval Date: ?

GENERAL NOTES:

1. ALL ERRORS OR DISCREPANCIES WITH THE PLANS OR EXISTING SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER OR SURVEYOR OF RECORD BEFORE PROCEEDING WITH THE WORK.
2. CONTOUR INTERVAL IS 1 FOOT. EXISTING GRADE IS A COMBINATION OF AERIAL TOPOGRAPHY BY WINGS AERIAL MAPPING CO. INC. DATED 1/6/00 AND GROUND RUN TOPOGRAPHY BY AES DATED 8/16/10.
3. ANY EXISTING, UNUSED WELLS SHALL BE ABANDONED IN ACCORDANCE WITH THE VIRGINIA PRIVATE WELL REGULATIONS AND JAMES CITY COUNTY CODE.
4. A VDOT CE-7 PERMIT IS REQUIRED FOR ALL WORK WITHIN THE VDOT RIGHT-OF-WAY. THE CONTRACTOR SHALL NOTIFY VDOT IN WRITING 48 HOURS PRIOR TO COMMENCEMENT OF ANY WORK WITHIN THE VDOT RIGHT-OF-WAY. THE GENERAL CONTRACTOR SHALL SECURE THIS PERMIT.
5. THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF THE APPROVED PLANS AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS UTILITY (1-800-552-7001) FOR EXISTING UTILITY LOCATIONS AT LEAST 3 WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION, AND A PRIVATE UTILITY LOCATOR FOR THE LOCATING OF PRIVATE UTILITIES.
7. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO THE PROJECT 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK, UNLESS OTHERWISE DIRECTED BY THE OWNER. CONSTRUCTION WITHIN EASEMENTS OR ON PUBLIC RIGHT-OF-WAY NECESSITATES NOTICE WHETHER ADJACENT TO OR LOCATED ON THE ADJOINING PROPERTY. FAILURE TO PROVIDE THE MINIMUM NOTIFICATION TIME WILL RESULT IN SUSPENSION OF WORK.
8. THE ABSENCE OF THE OWNER OR THE ENGINEER AT THE JOB SITE DOES NOT, IN ANY WAY, RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PERFORM THE WORK IN ACCORDANCE WITH THE DRAWINGS, CONTRACT DOCUMENTS, ADDENDA, AND WRITTEN AUTHORIZED PLAN REVISIONS.
9. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANYBODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION.
10. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE CURRENT JAMES CITY COUNTY STANDARDS AND SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER APPLICABLE CITY OR STATE ORDINANCES, CODES, AND LAWS PRIOR TO ANY CONSTRUCTION ACTIVITY.
11. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS AND PRODUCTS ON ALL PROJECTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK.
12. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO COMMENCEMENT OF WORK INCLUDING, BUT NOT LIMITED TO, LAND DISTURBING, BUILDING, RIGHT-OF-WAY, AND UTILITY PERMITS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF CONSTRUCTION EFFORTS WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), LOCAL EMERGENCY SERVICES, AND ALL NECESSARY UTILITY COMPANIES INCLUDING, BUT NOT LIMITED TO, ELECTRICITY, NATURAL GAS, TELECOMMUNICATIONS, CABLE TELEVISION, WATER, SEWER, PRIVATE LIGHTING, AND OTHERS THAT MAY BE REQUIRED.
14. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO ALL SITE CONDITIONS PRIOR TO CONSTRUCTION.
15. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THE VIRGINIA UNDERGROUND UTILITY DAMAGE PREVENTION ACT (SECTION 56-265.14 ET. SEQ. CODE OF VIRGINIA, 1950, AS AMENDED) AND SHALL BE RESPONSIBLE FOR ADHERING TO THE VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT. THE CONTRACTOR HEREBY AGREES TO HOLD THE DEVELOPER AND THE ENGINEER HARMLESS AGAINST ANY LOSS, DAMAGE, OR CLAIMS OF ANY NATURE WHATSOEVER ARISING OUT OF THE CONTRACTOR'S FAILURE TO COMPLY WITH THE REQUIREMENTS OF SAID ACTS.
16. HORIZONTAL DATUM: NAD83 (1986)

    VERTICAL DATUM: NGVD29
17. SITE IS LOCATED INSIDE THE PRIMARY SERVICE AREA AND IS SERVED BY PUBLIC WATER AND SEWER.
18. ALL SIGNAGE SHALL COMPLY WITH THE REQUIREMENTS OF ARTICLE II, DIVISION 3 OF THE COUNTY CODE.
19. ALL NEW UTILITIES SHALL BE PLACED UNDERGROUND.
20. ALL NEW SIGNS SHALL BE IN ACCORDANCE WITH ARTICLE II, DIVISION 3 OF THE JAMES CITY COUNTY ZONING ORDINANCE AND THE PROFFERS DATED MARCH 19, 2007.
21. STORM STRUCTURES SHALL CONFORM TO THE VDOT ROAD AND BRIDGE STANDARDS AND VDOT SPECIFICATIONS. ALL MANHOLES SHALL INCLUDE INLET SHAPING (IS-1) AND MANHOLES DEEPER THAN 4 FEET SHALL HAVE STEPS (ST-1). PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT PB-1 AND MANUFACTURER'S SPECIFICATIONS AND GUIDELINES. ALL CURB DROP INLETS WITHIN THE VDOT RIGHT-OF-WAY SHALL INCLUDE TYPE "A" NOSING FOR USE IN CG-7 CURB AND GUTTER. TYPE "B" NOSING SHALL BE USED WHERE CG-6 CURB AND GUTTER IS SPECIFIED INTERNAL TO SITE.
22. EASEMENTS DENOTED AS "JCSA UTILITY EASEMENTS" ARE FOR THE EXCLUSIVE USE OF THE JAMES CITY SERVICE AUTHORITY AND THE PROPERTY OWNER. OTHER UTILITY SERVICE PROVIDERS DESIRING TO USE THESE EASEMENTS WITH THE EXCEPTION OF PERPENDICULAR UTILITY CROSSINGS MUST OBTAIN AUTHORIZATION FOR ACCESS AND USE FROM JCSA AND THE PROPERTY OWNER. ADDITIONALLY, JCSA SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE TO IMPROVEMENTS WITHIN THIS EASEMENT FROM ANY CAUSE.
23. PRIVATELY OWNED UTILTIES (WATER & SEWER LINE, FIRE MAINS) SHOWN ON THIS PLAN ARE REGULATED BY THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE AND ENFORCED BY THE CODE AND COMPLIANCE DEPARTMENT. THESE PRIVATELY OWNED UTILITIES MUST COMPLY FULLY WITH THE INTERNATIONAL PLUMBING CODE, THE NATIONAL FIRE PREVENTION ASSOCIATION STANDARD 24, AND THE INTERNATIONAL FIRE CODE. CONTRACTORS WORKING FROM THIS SITE PLAN ARE CAUTIONED NOT TO CONCEAL PRIVATELY OWNED SITE UTILITIES WITHOUT OBTAINING REQUIRED PERMITS AND INSPECTIONS.
24. ALL PROPOSED STORM PIPE TO BE CLASS III RCP (ASTM C76 WITH C443 GASKETS) UNLESS OTHERWISE NOTED.

JCSA WATER DEMANDS:

147,132 S.F. SHOPPING CENTER
10,000 S.F. CORPORATE OFFICE
3,000 S.F. BANK
160 SEAT RESTAURANT
TOTAL WATER DEMAND = 35,726 GPD
AVG. DAY DEMAND = 47.95 GPM
MAX. DAY DEMAND = 81.51 GPM
PEAK HOUR DEMAND = 144 GPM
(NO IRRIGATION PROPOSED)
REQUIRED FIRE FLOW = 2,500 GPM @ 20 PSI
PROVIDED FIRE FLOW = 2,500 GPM @ 20.5 PSI

POLLUTANT LOAD SUMMARY:

PRE-DEVELOPMENT IMPERVIOUS = 78.8%
PRE-DEVELOPMENT PHOSPHORUS LOAD (Lpre) = 17.30 LBS/YEAR
POST-DEVELOPMENT IMPERVIOUS = 76.1%*
POST-DEVELOPMENT PHOSPHORUS LOAD (Lpost) = 31.50 LBS/YEAR
IMPERVIOUS COVER DRAINING TO BMP = 26.7± AC, 44.1% OF WATERSHED
PHOSPHORUS LOAD ENTERING BMP (Lbmp) = 61.7 LBS/YR
REQUIRED POLLUTANT REMOVAL = 15.90 LBS/YEAR
POLLUTANT REMOVED = 30.90 LBS/YEAR

*POST DEVELOPMENT IMPERVIOUS COVER DESCRIBES THE 18.78 ACRE AREA BETWEEN ROUTE 60 AND THE CSX RIGHT-OF-WAY. THE OVERALL IMPERVIOUS COVER FOR ALL OF THE WILLIAMSBURG POTTERY PROPERTY WAS NOT STUDIED AND IS NOT KNOWN AT THIS TIME.

REQUIRED PERMIT LIST:

VSMP
USACOE
CHESAPEAKE BAY
LAND DISTURBING
VDOT

EXCEPTIONS / VARIANCE / WAIVERS:

50' CCC (PROFFER 37' AVG.)
25% SLOPE WAIVER (GRANTED)
SECOND MONUMENT SIGN

MASTER PLAN CHANGES

APPROVED BY DEVELOPMENT REVIEW COMMITTEE 9/23/10

MASTER PLAN CHANGES INCLUDE
1. THE SOUTHERNMOST "POCKET PARK" HAS BEEN MOVED TO THE NORTHERN END OF THE SITE PER A CLIENT REQUEST.
2. THE SPACE BETWEEN THE NORTHERN BUILDINGS HAS BEEN EXPANDED AND TURNED INTO A "MARKET SQUARE" PLAZA.
3. THE NORTHERNMOST BUILDING NOW HAS CORPORATE OFFICES IN IT AND WE HAVE PROVIDED PARKING BEHIND THE BUILDING AND AT THE END OF THE BUILDING TO SERVE THOSE OFFICES.
4. DUE TO THE CHANGE IN USE FOR THE PROJECT FROM A USUAL STRIP SHOPPING CENTER TO THE WILLIAMSBURG POTTERY WE HAVE PROVIDED BUS PARKING AT THE NORTHERN END OF THE PROJECT.
5. AS PART OF MOVING ALL OF THE RETAIL OPERATIONS OF THE WILLIAMSBURG POTTERY TO THE AREA IN FRONT OF THE TRACKS AND THE LIMITATION OF CUSTOMERS TRAVELING BEHIND THE TRACKS WE WANT TO ELIMINATE THE 150' SCREENING REQUIREMENT OF THE NORTHERN BUILDING ADJACENT TO THE RAILROAD CROSSING.

LANDSCAPING MODIFICATION REQUESTS/CHANGES INCLUDE:
6. WE ARE ALLOWED TO TRANSFER LANDSCAPING FROM BEHIND THE BUILDINGS (THE REAR YARD LANDSCAPING) TO OTHER AREAS OF THE SITE. WE ANTICIPATE THAT THIS WILL NOT EXCEED 65% TRANSFERRED
7. WE ARE ALLOWED TO TRANSFER UP TO 65% OF THE BUILDING AREA LANDSCAPING TO OTHER AREAS OF THE SITE. ORDINANCE ALLOWS A 50% TRANSFER WITHOUT A LANDSCAPE MODIFICATION REQUEST.

PARKING CALCULATIONS (PER ORDINANCE):

SHOPPING CENTER REQUIREMENTS: 4 SPACES / 1,000 S.F.

BUILDING A RETAIL SPACE: 78,899 S.F.
BUILDING B RETAIL SPACE: 40,780 S.F.
BUILDING C RETAIL SPACE: 20,793 S.F.
FUTURE RETAIL SPACE: 1,000 S.F.
141,472 S.F.
RETAIL REQUIRED SPACES:
(141,472 S.F. / 1,000 S.F.) * 4 SPACES = 566 SPACES REQUIRED

BANK: 1 SPACE / 250 S.F.
(3,000 S.F. / 250 S.F.) * 1 SPACE = 12 SPACES REQUIRED
RESTAURANT: 1 SPACE / 4 SEATS
(160 SEATS / 4 SEATS) * 1 SPACE = 40 SPACES REQUIRED
OFFICE: 1 SPACE / 250 S.F.
(10,000 S.F. / 250 S.F.) * 1 SPACE = 40 SPACES REQUIRED
OUTDOOR DISPLAY AREA: 1 SPACE/ 500 S.F.
(5,680 S.F. / 500 S.F.) * 1 SPACE = 12 SPACES REQUIRED

TOTAL PARKING REQUIRED = 670 SPACES REQUIRED
* 2% HANDICAP SPACES = 14 HANDICAP REQUIRED
TOTAL PARKING PROVIDED = 741 SPACES PROVIDED
HANDICAP PROVIDED = 19 SPACES PROVIDED
BUS SPACES = 8 SPACES PROVIDED (INCLUDING 1 MINI-BUS SPACE)

71 SPACES PROVIDED IN EXCESS OF REQUIREMENT + BUS PARKING TO MEET OWNER EXPECTATION OF FUTURE NEED RESULTING FROM THIS REDEVELOPMENT.

VDOT APPROVAL CONDITIONS

APPROVED 2/18/11 SUBJECT TO THE FOLLOWING CONDITIONS:

1. THE CONTRACTOR SHALL REMOVE ALL TRAFFIC SIGNAL POLE AND CABINET FOUNDATIONS TO 24" BELOW GRADE.
2. THE CONTRACTOR SHALL REMOVE AND SALVAGE ALL MAST ARMS, MAST ARM POLES, JUNCTION BOXES AND ASSOCIATED WIRE.
3. THE CONTRACTOR SHALL ABANDON IN PLACE ALL CONDUIT AND SHALL REMOVE ALL CONDUIT AT REMOVED JUNCTION BOXES TO 24" BELOW GRADE.
4. THE CONTRACTOR SHALL FILL AND GRADE ALL WORK AREAS DISTURBED AS PART OF THIS TRAFFIC SIGNAL REMOVAL IN ACCORDANCE WITH VDOT SPECIFICATIONS.

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	8	Grading Plan
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COUNTY OF JAMES CITY
FINAL SITE PLAN

APPROVALS		DATE
Fire Dept.	JB/CMJ	11-22-10
Code Compliance	TR/CMJ	2-24-11
VDOT	JCF/CMJ	2-22-11
Planning	CMJ	2-24-11
Environ.	SJT/CMJ	12-20-10
Zoning Adm.	MCB/CMJ	2-24-11
JCSA	DW/CMJ	
County Eng.	DEC/CMJ	12-20-10
Landscaping	WSW/CMJ	12-20-10
Proffer Admin	CP/CMJ	12-17-10

RECEIVED FEB 2011 Planning Department

Environmental Division MAR 31 2011 RECEIVED

COMMONWEALTH OF VIRGINIA MATTHEW J. REMBOLD Lic. No. 045773 2/23/11 PROFESSIONAL ENGINEER

DEVELOPER INFORMATION:

WILLIAMSBURG POTTERY PROPERTIES, LLC
CONTACT: MR. PETER KAO
ROUTE 60 WEST
WILLIAMSBURG, VIRGINIA 23090
PHONE NO.: (757) 564-3326
FAX NO.: (757) 564-8241

OWNER INFORMATION:

WILLIAMSBURG POTTERY PROPERTIES, LLC
CONTACT: MR. PETER KAO
ROUTE 60 WEST
WILLIAMSBURG, VIRGINIA 23090
PHONE NO.: (757) 564-3326
FAX NO.: (757) 564-8241

CERTIFIED RESPONSIBLE LAND DISTURBER:

JORDAN ANGLIN (CERTIFICATE 3098)
HENDERSON CONTRACTORS, INC.
5806 MOORETOWN ROAD
WILLIAMSBURG, VIRGINIA 23188
PHONE NO.: (757) 645-2746
FAX NO.: (757) 259-7404

SITE DATA:

SITE ADDRESS:	6692 RICHMOND ROAD WILLIAMSBURG, VIRGINIA 23185
TAX MAP PARCEL ID:	2430100024
ZONING:	M1 (LIMITED BUSINESS/INDUSTRIAL), WITH PROFFERS
PARCEL AREA:	817,891 S.F.±, 18.78 AC.±
TOTAL DISTURBED AREA:	1,073,990 S.F.±, 24.66 AC.±
TOTAL PRE DEV. IMPERVIOUS AREA:	644,685 S.F.±, 14.80 AC.±, 78.8%
TOTAL POST DEV. IMPERVIOUS AREA:	626,062 S.F.±, 14.37 AC.±, 76.5%
OPEN SPACE:	N/A
FLOOD HAZARD MAP:	THIS PROPERTY IS NOT IN A FLOOD ZONE AS SHOWN ON MAP NUMBER 51095C0110C, PANEL 0110C, FOR COMMUNITY NUMBER 51095, DATED 09/28/2007 OF THE FLOOD INSURANCE RATE MAPS.
PARKING PROVIDED:	SEE "PARKING CALCULATIONS" SECTION
WATERSHED INFORMATION:	THIS SITE IS SITUATED WITHIN THE SKIMINO CREEK AND YARMOUTH CREEK WATERSHEDS (SUBWATERSHED 105). SITE PLAN REDIRECTS 3.6 ACRES FROM YARMOUTH CREEK WATERSHED TO SKIMINO CREEK WATERSHED.

BUILDING RETAIL DATA

	BUILDING AREA	FAR	HEIGHT	FLOORS	TYPE
BUILDING A RETAIL SPACE:	88,899 S.F.	0.10	31'-2"	2	IIB
BUILDING B RETAIL SPACE:	40,780 S.F.	0.05	30'-2"	1	IIB
BUILDING C RETAIL SPACE:	20,793 S.F.	0.03	29'-7"	1	IIB
FUTURE RETAIL SPACE:	1,000 S.F.	0.01		1	
BANK:	3,000 S.F.	0.01		1	
RESTAURANT:	6,500 S.F.	0.01		1	
TOTAL:	160,972 S.F.				

* SECOND STORY CORPORATE OFFICES (10,000 S.F.) INCLUDED IN BUILDING A RETAIL S.F.

NOTE:
THIS SITE PLAN IS BASED ON THE MASTER PLAN, PROFFERS, DESIGN GUIDELINES, AND CONDITIONS, ASSOCIATED WITH CASE NOs. Z-8-2006, MP-9-2006, AND SUP-36-2006 ADOPTED BY THE BOARD OF SUPERVISORS ON MAY 8, 2007.

NOTE:
THIS PLAN WAS GRANTED PRELIMINARY APPROVAL BY THE JAMES CITY COUNTY PLANNING COMMISSION SUBJECT TO STAFF COMMENTS ON OCTOBER 6, 2010

Rev.	Date	Description	Revised By
4	2/23/11	Revised forVDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 253-0040
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www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

Williamsburg Pottery
Stonehouse District James City County Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: -	Date: 9/3/2010
Sheet Title:	Cover Sheet
Sheet Number	1

SP-0013-2012

Site Plan Amendment

For

Williamsburg Pottery

Stonehouse District — James City County — Virginia

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17. SITE IS LOCATED INSIDE THE PRIMARY SERVICE AREA AND IS SERVED BY PUBLIC WATER AND SEWER.

18. ALL SIGNAGE SHALL COMPLY WITH THE REQUIREMENTS OF ARTICLE II, DIVISION 3 OF THE COUNTY CODE.

19. ALL NEW UTILITIES SHALL BE PLACED UNDERGROUND.

20. ALL NEW SIGNS SHALL BE IN ACCORDANCE WITH ARTICLE II, DIVISION 3 OF THE JAMES CITY COUNTY ZONING ORDINANCE AND THE PROFFERS DATED JANUARY 28, 2011, ACCEPTED BY THE BOARD OF SUPERVISORS ON MARCH 22, 2011, ASSOCIATED WITH CASE NO. Z-0002-2010 AND MASTER PLAN NO. MP-0001-2010.

21. STORM STRUCTURES SHALL CONFORM TO THE VDOT ROAD AND BRIDGE STANDARDS AND VDOT SPECIFICATIONS. ALL MANHOLES SHALL INCLUDE INLET SHAPING (IS-1) AND MANHOLES DEEPER THAN 4 FEET SHALL HAVE STEPS (ST-1). PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT PB-1 AND MANUFACTURER'S SPECIFICATIONS AND GUIDELINES. ALL CURB DROP INLETS WITHIN THE VDOT RIGHT-OF-WAY SHALL INCLUDE TYPE "A" NOSING FOR USE IN CG-7 CURB AND GUTTER. TYPE "B" NOSING SHALL BE USED WHERE CG-6 CURB AND GUTTER IS SPECIFIED INTERNAL TO SITE.

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24. ALL PROPOSED STORM PIPE TO BE CLASS III RCP (ASTM C76 WITH C443 GASKETS) UNLESS OTHERWISE NOTED.

25. AN EXCEPTION TO THE ESTABLISHED STATEWIDE ACCESS MANAGEMENT REGULATIONS AND STANDARDS FOR THE SPACING OF THE ENTRANCES, INTERSECTIONS OR CROSSOVERS HAS BEEN GRANTED BY DENNIS HEUER, VDOT HAMPTON ROADS DISTRICT ADMINISTRATOR, DATED FEBRUARY 22, 2011.

26. IN ACCORDANCE WITH PROFFER NO. 4 OF THE PROFFERS ADOPTED BY THE BOARD OF SUPERVISORS ON MARCH 22, 2011, THE PLANNING DIRECTOR HAS REVIEWED THE LIGHTING PLAN AND APPROVED THE PROPOSED LIGHTING FIXTURES THAT WILL PRODUCE GLARE TO EXTEND OUTSIDE THE PROPERTY LINES AS SHOWN ON SHEETS 32-34.

JCSA WATER DEMANDS:

146,152 S.F. SHOPPING CENTER
10,000 S.F. CORPORATE OFFICE
3,500 S.F. BANK
148 SEAT RESTAURANT (4,620 S.F.)
200 SEAT RESTAURANT (7,000 S.F.)
TOTAL WATER DEMAND = 41,020.4 GPD
AVG. DAY DEMAND = 53.36 GPM
MAX. DAY DEMAND = 90.71 GPM
PEAK HOUR DEMAND = 213.44 GPM
(NO IRRIGATION PROPOSED)
REQUIRED FIRE FLOW = 2,500 GPM @ 20 PSI
PROVIDED FIRE FLOW = 2,500 GPM @ 20.4 PSI

REQUIRED PERMIT LIST:

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USACOE
CHESAPEAKE BAY
LAND DISTURBING
VDOT

POLLUTANT LOAD SUMMARY:

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PRE-DEVELOPMENT PHOSPHORUS LOAD (Lpre) = 17.30 LBS/YEAR
POST-DEVELOPMENT IMPERVIOUS = 76.1%*
POST-DEVELOPMENT PHOSPHORUS LOAD (Lpost) = 31.50 LBS/YEAR
IMPERVIOUS COVER DRAINING TO BMP = 26.7± AC, 44.1% OF WATERSHED
PHOSPHORUS LOAD ENTERING BMP (Lbmp) = 61.7 LBS/YR
REQUIRED POLLUTANT REMOVAL = 15.90 LBS/YEAR
POLLUTANT REMOVED = 30.90 LBS/YEAR

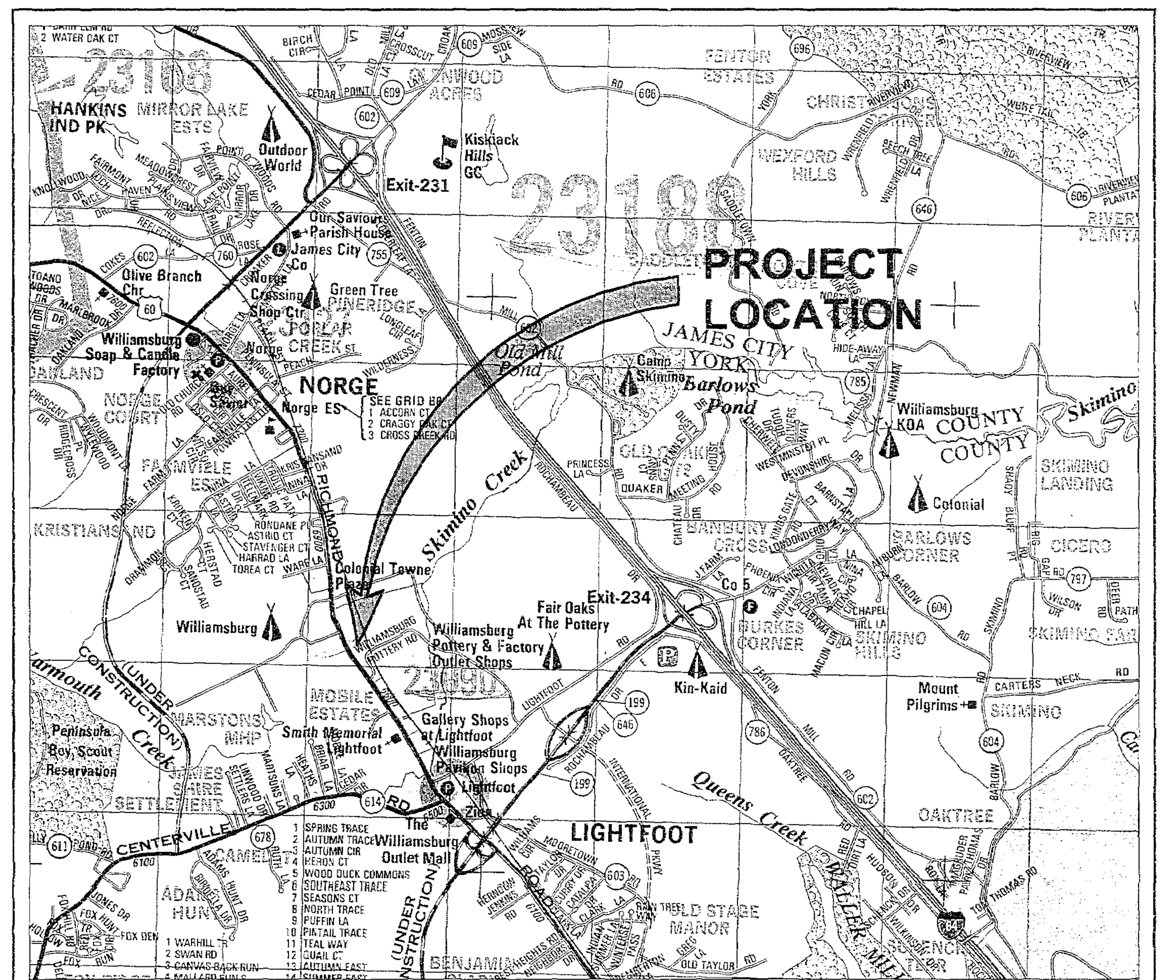
*POST DEVELOPMENT IMPERVIOUS COVER DESCRIBES THE 18.78 ACRE AREA BETWEEN ROUTE 60 AND THE CSX RIGHT-OF-WAY. THE OVERALL IMPERVIOUS COVER FOR ALL OF THE WILLIAMSBURG POTTERY PROPERTY WAS NOT STUDIED AND IS NOT KNOWN AT THIS TIME.

EXCEPTIONS / VARIANCE / WAIVERS:

50' CCC (PROFFER 37' AVG.)
25% SLOPE WAIVER (GRANTED)
SECOND MONUMENT SIGN

RIGHT OF WAY LANDSCAPING WAIVER - CASE SP-0013-2012

ON JUNE 15, 2012 THE ACTING JAMES CITY PLANNING DIRECTOR GRANTED A WAIVER TO ALLOW THE WILLIAMSBURG POTTERY TO PLACE UNDERGROUND UTILITIES IN IN THE RIGHT-OF-WAY BUFFER IN ACCORDANCE WITH SECTION 24-98(F)(1)(B) AFTER FINDING THAT UNAVOIDABLE PHYSICAL OR REGULATORY CONSTRAINTS EXISTED TO JUSTIFY THE GRANTING OF THE WAIVER.



VICINITY MAP
(Approximate Scale: 1"=2,000')
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County Project No.: SP-0013-2012
Original Submittal Date: 3/4/2011
Approval Date: 2/24/11 (For Case No. SP-0077-2010)
Approval Date: 6/27/11 (For Case No. SP-0024-2011)

MASTER PLAN CHANGES

APPROVED BY DEVELOPMENT REVIEW COMMITTEE 9/23/10

MASTER PLAN CHANGES INCLUDE
1. THE SOUTHERNMOST "POCKET PARK" HAS BEEN MOVED TO THE NORTHERN END OF THE SITE PER A CLIENT REQUEST.
2. THE SPACE BETWEEN THE NORTHERN BUILDINGS HAS BEEN EXPANDED AND TURNED INTO A "MARKET SQUARE" PLAZA.
3. THE NORTHERNMOST BUILDING NOW HAS CORPORATE OFFICES IN IT AND WE HAVE PROVIDED PARKING BEHIND THE BUILDING AND AT THE END OF THE BUILDING TO SERVE THOSE OFFICES.
4. DUE TO THE CHANGE IN USE FOR THE PROJECT FROM A USUAL STRIP SHOPPING CENTER TO THE WILLIAMSBURG POTTERY WE HAVE PROVIDED BUS PARKING AT THE NORTHERN END OF THE PROJECT.
5. AS PART OF MOVING ALL OF THE RETAIL OPERATIONS OF THE WILLIAMSBURG POTTERY TO THE AREA IN FRONT OF THE TRACKS AND THE LIMITATION OF CUSTOMERS TRAVELING BEHIND THE TRACKS WE HAVE TRANSFERRED REQUIRED PLANT MATERIALS WITHIN THE REAR PLANTING AREA ADJACENT TO THE CSX RAILROAD CROSSING SUBJECT TO A LANDSCAPE MODIFICATION REQUEST APPROVED BY THE PLANNING COMMISSSION ON OCTOBER 6, 2010.

LANDSCAPING MODIFICATION REQUESTS/CHANGES (APPROVED BY THE PLANNING COMMISSION ON OCTOBER 6, 2010) INCLUDE:

6. WE ARE ALLOWED TO TRANSFER LANDSCAPING FROM BEHIND THE BUILDINGS (THE REAR YARD LANDSCAPING) TO OTHER AREAS OF THE SITE. WE ANTICIPATE THAT THIS WILL NOT EXCEED 65% TRANSFERRED
7. WE ARE ALLOWED TO TRANSFER UP TO 65% OF THE BUILDING AREA LANDSCAPING TO OTHER AREAS OF THE SITE. ORDINANCE ALLOWS A 50% TRANSFER WITHOUT A LANDSCAPE MODIFICATION REQUEST.

PARKING CALCULATIONS (PER ORDINANCE):

SHOPPING CENTER REQUIREMENTS: 4 SPACES / 1,000 S.F.

	FINAL	CURRENT
BUILDING A RETAIL SPACE:	78,899 S.F.	78,899 S.F.
BUILDING B RETAIL SPACE:	40,780 S.F.	40,780 S.F.
BUILDING C RETAIL SPACE:	20,793 S.F.	20,793 S.F.
OUTDOOR DISPLAY AREA:	6,000 S.F.	6,000 S.F.
RESTAURANT:	4,620 S.F.	4,620 S.F.
RESTAURANT:	7,000 S.F.	7,000 S.F.
BANK:	3,500 S.F.	0 S.F.
OFFICE:	10,000 S.F.	0 S.F.
FARMERS MARKET	2,000 S.F.	2,000 S.F.
TOTAL:	173,412 S.F.	162,912 S.F.

SHOPPING CENTER REQUIRED SPACES FINAL:
(173,412 S.F. / 1,000 S.F.) * 4 SPACES = 693 SPACES REQUIRED
* 2% HANDICAP SPACES = 14 HANDICAP REQUIRED

TOTAL PARKING PROVIDED = 728 SPACES PROVIDED
HANDICAP PROVIDED = 16 SPACES PROVIDED
BUS SPACES = 8 SPACES PROVIDED (INCLUDING 1 MINI-BUS SPACE)

SHOPPING CENTER REQUIRED SPACES CURRENT:
(162,912 S.F. / 1,000) X 4 SPACES = 652 SPACES REQUIRED
2% HANDICAP SPACES = 13 HANDICAP REQUIRED

TOTAL PARKING PROVIDED = 695 SPACES PROVIDED
HANDICAP PROVIDED = 15 SPACES PROVIDED
BUS SPACES = 8 SPACES PROVIDED (INCLUDING 1 MINI-BUS SPACE)

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1	Cover Sheet
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4	Site & Utility Plan
5	Site & Utility Plan
6	Site & Utility Plan
~~7A~~	~~Private Waterline Plan~~ OMITTED
7	Site & Utility Insets
8	Grading Plan
9	Grading Plan
10	Grading Plan
11	Drainage Plan
12	Drainage Plan
13	Drainage Plan
14	Offsite Grading & Drainage Plan
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38	Hardscape Notes & Details
39	Turning Movements Plan
40	Pavement Marking Plan
~~41~~	~~Transportation Maintenance Plan~~ OMITTED
A-1	BUILDING A LED LIGHTING
A-2	BUILDING B LED LIGHTING
A-3	BUILDING C LED LIGHTING
SK-50	ENTRY SIGNS LED LIGHTING

The Site Plan Amendment dated 2/2/12, and revised 6/6/12, amends the county approved plans dated 5/27/11. The Site Plan Amendment accounts for changes to the plans resulting from unforeseen field conditions during construction, owner change orders, and agency coordination. In summary, these changes are: [6/6/12 changes are noted with an asterisk (*)]

1. Revised intersection design within VDOT Right-of-Way and moved two monument signs further from Right-of-Way with the site.
2. Revised hardscape from concrete to brick paver design per owner request.
3. Provided light truck vehicular access behind Building C per owner request.
4*. Changed electric utility service from overhead utilities on poles to underground along Richmond Road. A waiver to permit the front buffer landscaping to be collocated was applied for in January 2012. This waiver will be granted in accordance with a "Landscape Buffer and Maintenance Agreement" between the Pottery and James City County signed May 29, 2012.
   A. 10 tree locations are being adjusted in accordance with the requirements of the County landscape staff.
   B. 8 tree locations are being adjusted in accordance with the requirements of Dominion Virginia Power.
5*. Changes to proposed JCSA utility service connections including:
   A. Removal of Bank outparcel water service connection
   B. Relocation of Bank outparcel sanitary sewer service connection
   C*. Revision of JCSA utility easement behind Buildings A & B for field location of sewer cleanouts. Field location of Miss Utility markings for Dominion and Pottery conduits are shown on sheets 4 & 5.
6. Addition of private production well east of Building C for product watering in accordance with the agreement between JCSA and the Williamsburg Pottery Factory, Inc dated May 13, 1980. Also eliminated proposed private water line that went to the rear of the tracks to provide production water.
7*. Interior Garden Center - drainage routed to storm sewer in accordance with an email agreement with Development Management and Code Compliance. Signs installed per Building Official. See sheet 6.
8. Exterior Garden Center - went from a concrete pad to walkways, gravel and mulched areas. Lighting was revised to more numerous smaller fixtures and trellises added.
9. Relocated Bus Stop access pad & shelter approximately 40' east.
10. VDOT approval condition note for SP-0077-2010 previously shown on this cover sheet requiring the contractor to remove traffic signal structure has been removed because VDOT performed the work.
11*. Relocated 10 flag poles from along railroad entry road to 4 in sign island in Colonial Heritage entry road and 3 in each parking lot corner at railroad entry road.
12*. Since the Pottery has not built out buildings D & F (outparcel buildings) at this time, the parking calculations have been modified to show two conditions, Current and Final. All utility connections have been installed except 5.A. above and all landscaping installed except for the actual building landscaping for buildings D & F shown on sheet 35. The 33 spaces labeled final on sheet 6 are the spaces not counted at this time.
13. Farmers Market Area (Shown in Courtyard Area) Up to 2,000 S.F. of the 13,690 S.F. area may be used for a Farmers Market.

OWNER INFORMATION:

WILLIAMSBURG POTTERY PROPERTIES, LLC
CONTACT: MR. PETER KAO
ROUTE 60 WEST
WILLIAMSBURG, VIRGINIA 23090
PHONE NO.: (757) 564-3326
FAX NO.: (757) 564-8241

CERTIFIED RESPONSIBLE LAND DISTURBER:

JORDAN ANGLIN (CERTIFICATE 3098)
HENDERSON CONTRACTORS, INC.
5806 MOORETOWN ROAD
WILLIAMSBURG, VIRGINIA 23188
PHONE NO.: (757) 645-2746
FAX NO.: (757) 259-7404

DEVELOPER INFORMATION:

WILLIAMSBURG POTTERY PROPERTIES, LLC
CONTACT: MR. PETER KAO
ROUTE 60 WEST
WILLIAMSBURG, VIRGINIA 23090
PHONE NO.: (757) 564-3326
FAX NO.: (757) 564-8241

SITE DATA:

SITE ADDRESS:	6692 RICHMOND ROAD WILLIAMSBURG, VIRGINIA 23185
TAX MAP PARCEL ID:	2430100024
ZONING:	M1 (LIMITED BUSINESS/INDUSTRIAL), WITH PROFFERS DATED JANUARY 28, 2011
PARCEL AREA:	817,891 S.F.±, 18.78 AC.±
TOTAL DISTURBED AREA:	1,100,556 S.F.±, 25.26 AC.±
TOTAL PRE DEV. IMPERVIOUS AREA:	644,685 S.F.±, 14.80 AC.±, 78.8%
TOTAL POST DEV. IMPERVIOUS AREA:	640,293 S.F.±, 14.70 AC.±, 78.2%
OPEN SPACE:	N/A
FLOOD HAZARD MAP:	THIS PROPERTY IS NOT IN A FLOOD ZONE AS SHOWN ON MAP NUMBER 51095C0110C, PANEL 0110C, FOR COMMUNITY NUMBER 51095, DATED 09/28/2007 OF THE FLOOD INSURANCE RATE MAPS.
PARKING PROVIDED:	SEE "PARKING CALCULATIONS" SECTION
WATERSHED INFORMATION:	THIS SITE IS SITUATED WITHIN THE SKIMINO CREEK AND YARMOUTH CREEK WATERSHEDS (SUBWATERSHED 105). SITE PLAN REDIRECTS 3.6 ACRES FROM YARMOUTH CREEK WATERSHED TO SKIMINO CREEK WATERSHED.

Environmental Division
MAR 15 2013
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BUILDING RETAIL DATA

	BUILDING AREA	FAR	HEIGHT	FLOORS	TYPE
BUILDING A RETAIL SPACE:	88,899 S.F.	0.10	31'-2"	2	IIB
BUILDING B RETAIL SPACE:	40,780 S.F.	0.05	30'-2"	1	IIB
BUILDING C RETAIL SPACE:	20,793 S.F.	0.03	29'-7"	1	IIB
RESTAURANT:	4,620 S.F.	0.01		1	
BANK:	3,500 S.F.	0.01		1	
RESTAURANT:	7,000 S.F.	0.01		1	
TOTAL:	165,592 S.F.				

* SECOND STORY CORPORATE OFFICES (10,000 S.F.) INCLUDED IN BUILDING A RETAIL S.F.

COUNTY OF JAMES CITY
SITE PLAN

APPROVALS		DATE
Fire Dept.	VBI/CMJ	8-2-12
Health Dept.	—	—
VDOT	SCF/CMJ	3-7-12
Planning	CMJ	3-13-13
Eng. ERP	SJT/CMJ	8-14-12
Zoning Adm	JA	3-14-13
JCSA	DAW/CMJ	8-6-12
BSP County Eng.	TC/CMJ	8-1-12
REA	—	—
Other	—	—

NOTE:
THIS SITE PLAN IS BASED ON THE MASTER PLAN, PROFFERS, DESIGN GUIDELINES, AND CONDITIONS, ASSOCIATED WITH CASE NOs. Z-0002-2010, MP-0001-2010 AND SUP-0029-2010 ADOPTED BY THE BOARD OF SUPERVISORS ON MARCH 22, 2011 AND THE DESIGN GUIDELINES ADOPTED BY THE BOARD OF SUPERVISORS ON MAY 8, 2007 WITH AMENDMENTS ASSOCIATED WITH CASE NO. SP-0077-2010 APPROVED BY THE PLANNING COMMISSION ON OCTOBER 6, 2010.

Rev.	Date	Description	Revised By
12	3/9/13	Added sheets showing LED lighting	RAC
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised R/W Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR

COMMONWEALTH OF VIRGINIA
RICHARD A. COSTELLO
Lic. No. 13250
3/12/13
PROFESSIONAL ENGINEER

PLANNING DIVISION
MAR 13 2013
RECEIVED

AES CONSULTING ENGINEERS
Hampton Roads | Central Virginia | Middle Peninsula
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 253-0040
Fax: (757) 220-8994
www.aesva.com

Williamsburg Pottery
Stonehouse District — James City County — Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale:	Date: 9/3/2010
Sheet Title:	Cover Sheet
Sheet Number	1

Site Plan Amendment

For

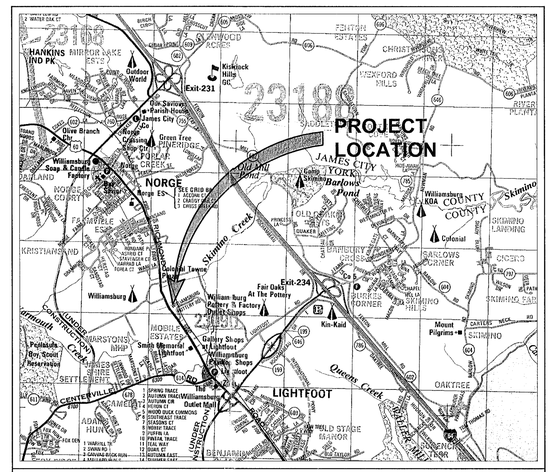
Williamsburg Pottery

Stonehouse District James City County Virginia

GENERAL NOTES:

1. ALL ERRORS OR DISCREPANCIES WITH THE PLANS OR EXISTING SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER OR SURVEYOR OF RECORD BEFORE PROCEEDING WITH THE WORK.
2. CONTOUR INTERVAL IS 1 FOOT. EXISTING GRADE IS A COMBINATION OF AERIAL TOPOGRAPHY BY WINGS AERIAL MAPPING CO. INC. DATED 1/6/00 AND GROUND RUN TOPOGRAPHY BY AES DATED 8/16/10.
3. ANY EXISTING, UNUSED WELLS SHALL BE ABANDONED IN ACCORDANCE WITH THE VIRGINIA PRIVATE WELL REGULATIONS AND JAMES CITY COUNTY CODE.
4. A VDOT CE-7 PERMIT IS REQUIRED FOR ALL WORK WITHIN THE VDOT RIGHT-OF-WAY. THE CONTRACTOR SHALL NOTIFY VDOT IN WRITING 48 HOURS PRIOR TO COMMENCEMENT OF ANY WORK WITHIN THE VDOT RIGHT-OF-WAY. THE GENERAL CONTRACTOR SHALL SECURE THIS PERMIT.
5. THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF THE APPROVED PLANS AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS UTILITY (1-800-552-7001) FOR EXISTING UTILITY LOCATIONS AT LEAST 3 WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION, AND A PRIVATE UTILITY LOCATOR FOR THE LOCATING OF PRIVATE UTILITIES.
7. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO THE PROJECT 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK, UNLESS OTHERWISE DIRECTED BY THE OWNER. CONSTRUCTION WITHIN EASEMENTS OR ON PUBLIC RIGHT-OF-WAY NECESSITATES NOTICE WHETHER ADJACENT TO OR LOCATED ON THE ADJOINING PROPERTY. FAILURE TO PROVIDE THE MINIMUM NOTIFICATION TIME WILL RESULT IN SUSPENSION OF WORK.
8. THE ABSENCE OF THE OWNER OR THE ENGINEER AT THE JOB SITE DOES NOT, IN ANY WAY, RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PERFORM THE WORK IN ACCORDANCE WITH THE DRAWINGS, CONTRACT DOCUMENTS, ADDENDA, AND WRITTEN AUTHORIZED PLAN REVISIONS.
9. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANYBODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION.
10. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE CURRENT JAMES CITY COUNTY STANDARDS AND SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER APPLICABLE CITY OR STATE ORDINANCES, CODES, AND LAWS PRIOR TO ANY CONSTRUCTION ACTIVITY.
11. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS AND PRODUCTS ON ALL PROJECTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK.
12. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO COMMENCEMENT OF WORK INCLUDING, BUT NOT LIMITED TO, LAND DISTURBING, BUILDING, RIGHT-OF-WAY, AND UTILITY PERMITS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF CONSTRUCTION EFFORTS WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), LOCAL EMERGENCY SERVICES, AND ALL NECESSARY UTILITY COMPANIES INCLUDING, BUT NOT LIMITED TO, ELECTRICITY, NATURAL GAS, TELECOMMUNICATIONS, CABLE TELEVISION, WATER, SEWER, PRIVATE LIGHTING, AND OTHERS THAT MAY BE REQUIRED.
14. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO ALL SITE CONDITIONS PRIOR TO CONSTRUCTION.
15. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THE VIRGINIA UNDERGROUND UTILITY DAMAGE PREVENTION ACT (SECTION 56-265.14 ET. SEQ. CODE OF VIRGINIA, 1950, AS AMENDED) AND SHALL BE RESPONSIBLE FOR ADHERING TO THE VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT. THE CONTRACTOR HEREBY AGREES TO HOLD THE DEVELOPER AND THE ENGINEER HARMLESS AGAINST ANY LOSS, DAMAGE, OR CLAIMS OF ANY NATURE WHATSOEVER ARISING OUT OF THE CONTRACTOR'S FAILURE TO COMPLY WITH THE REQUIREMENTS OF SAID ACTS.
16. HORIZONTAL DATUM: NAD83 (1986)

    VERTICAL DATUM: NGVD29
17. SITE IS LOCATED INSIDE THE PRIMARY SERVICE AREA AND IS SERVED BY PUBLIC WATER AND SEWER.
18. ALL SIGNAGE SHALL COMPLY WITH THE REQUIREMENTS OF ARTICLE II, DIVISION 3 OF THE COUNTY CODE.
19. ALL NEW UTILITIES SHALL BE PLACED UNDERGROUND.
20. ALL NEW SIGNS SHALL BE IN ACCORDANCE WITH ARTICLE II, DIVISION 3 OF THE JAMES CITY COUNTY ZONING ORDINANCE AND THE PROFFERS DATED JANUARY 28, 2011, ACCEPTED BY THE BOARD OF SUPERVISORS ON MARCH 22, 2011, ASSOCIATED WITH CASE NO. Z-0002-2010 AND MASTER PLAN NO. MP-0001-2010.
21. STORM STRUCTURES SHALL CONFORM TO THE VDOT ROAD AND BRIDGE STANDARDS AND VDOT SPECIFICATIONS. ALL MANHOLES SHALL INCLUDE INLET SHAPING (IS-1) AND MANHOLES DEEPER THAN 4 FEET SHALL HAVE STEPS (ST-1). PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT PB-1 AND MANUFACTURER'S SPECIFICATIONS AND GUIDELINES. ALL CURB DROP INLETS WITHIN THE VDOT RIGHT-OF-WAY SHALL INCLUDE TYPE "A" NOSING FOR USE IN CG-7 CURB AND GUTTER. TYPE "B" NOSING SHALL BE USED WHERE CG-6 CURB AND GUTTER IS SPECIFIED INTERNAL TO SITE.
22. EASEMENTS DENOTED AS "JCSA UTILITY EASEMENTS" ARE FOR THE EXCLUSIVE USE OF THE JAMES CITY SERVICE AUTHORITY AND THE PROPERTY OWNER. OTHER UTILITY SERVICE PROVIDERS DESIRING TO USE THESE EASEMENTS WITH THE EXCEPTION OF PERPENDICULAR UTILITY CROSSINGS MUST OBTAIN AUTHORIZATION FOR ACCESS AND USE FROM JCSA AND THE PROPERTY OWNER. ADDITIONALLY, JCSA SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE TO IMPROVEMENTS WITHIN THIS EASEMENT FROM ANY CAUSE.
23. PRIVATELY OWNED UTILITIES (WATER & SEWER LINE, FIRE MAINS) SHOWN ON THIS PLAN ARE REGULATED BY THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE AND ENFORCED BY THE CODE AND COMPLIANCE DEPARTMENT. THESE PRIVATELY OWNED UTILITIES MUST COMPLY FULLY WITH THE INTERNATIONAL PLUMBING CODE, THE NATIONAL FIRE PREVENTION ASSOCIATION STANDARD 24, AND THE INTERNATIONAL FIRE CODE. CONTRACTORS WORKING FROM THIS SITE PLAN ARE CAUTIONED NOT TO CONCEAL PRIVATELY OWNED SITE UTILITIES WITHOUT OBTAINING REQUIRED PERMITS AND INSPECTIONS.
24. ALL PROPOSED STORM PIPE TO BE CLASS III RCP (ASTM C76 WITH C443 GASKETS) UNLESS OTHERWISE NOTED.
25. AN EXCEPTION TO THE ESTABLISHED STATEWIDE ACCESS MANAGEMENT REGULATIONS AND STANDARDS FOR THE SPACING OF THE ENTRANCES, INTERSECTIONS OR CROSSOVERS HAS BEEN GRANTED BY DENNIS HEUER, VDOT HAMPTON ROADS DISTRICT ADMINISTRATOR, DATED FEBRUARY 22, 2011.
26. IN ACCORDANCE WITH PROFFER NO. 4 OF THE PROFFERS ADOPTED BY THE BOARD OF SUPERVISORS ON MARCH 22, 2011, THE PLANNING DIRECTOR HAS REVIEWED THE LIGHTING PLAN AND APPROVED THE PROPOSED LIGHTING FIXTURES THAT WILL PRODUCE GLARE TO EXTEND OUTSIDE THE PROPERTY LINES AS SHOWN ON SHEETS 32-34.



VICINITY MAP
(Approximate Scale: 1"=2,000')
Copyright ADC The Map People permitted use number 21004223

County Project No.: SP-0024-2011
Original Submittal Date: 3/4/2011
Approval Date: 2/24/11 (For Case No. SP-0077-2010)

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Environmental Division
JUN 30 2011
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COUNTY OF JAMES CITY
FINAL SITE PLAN
APPROVALS

Fire Dept.	KLD/CMJ	3-8-11
Health Dept.	—	—
VDOT	VRF/CMJ	6-27-11
Planning	CHL	6-27-11
Environ.	SST/CMJ	4-25-11
Zoning Adm.	AJM/CMJ	6-27-11
JCSA	DAW/CMJ	6-27-11
County Eng.	—	—
REF BMP	TC/CMJ	3-18-11
OWNER PA	CPK/MJ	4-25-11

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/25/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

STATE OF VIRGINIA
MATTHEW J. REMBOLD
Lic. No. 045773
5/27/11
PROFESSIONAL ENGINEER

DEVELOPER INFORMATION:

WILLIAMSBURG POTTERY PROPERTIES, LLC
CONTACT: MR. PETER KAO
ROUTE 60 WEST
WILLIAMSBURG, VIRGINIA 23090
PHONE NO.: (757) 564-3326
FAX NO.: (757) 564-8241

OWNER INFORMATION:

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CONTACT: MR. PETER KAO
ROUTE 60 WEST
WILLIAMSBURG, VIRGINIA 23090
PHONE NO.: (757) 564-3326
FAX NO.: (757) 564-8241

CERTIFIED RESPONSIBLE LAND DISTURBER:

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HENDERSON CONTRACTORS, INC.
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WILLIAMSBURG, VIRGINIA 23188
PHONE NO.: (757) 645-2746
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RECEIVED
MAY 2011

SITE DATA:

SITE ADDRESS:	6692 RICHMOND ROAD WILLIAMSBURG, VIRGINIA 23185
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OPEN SPACE:	N/A
FLOOD HAZARD MAP:	THIS PROPERTY IS NOT IN A FLOOD ZONE AS SHOWN ON MAP NUMBER 51095C0110C, PANEL 0110C, FOR COMMUNITY NUMBER 51095, DATED 09/28/2007 OF THE FLOOD INSURANCE RATE MAPS.
PARKING PROVIDED:	SEE "PARKING CALCULATIONS" SECTION
WATERSHED INFORMATION:	THIS SITE IS SITUATED WITHIN THE SKIMINO CREEK AND YARMOUTH CREEK WATERSHEDS (SUBWATERSHED 105). SITE PLAN REDIRECTS 3.6 ACRES FROM YARMOUTH CREEK WATERSHED TO SKIMINO CREEK WATERSHED.

BUILDING RETAIL DATA

	BUILDING AREA	FAR	HEIGHT	FLOORS	TYPE
BUILDING A RETAIL SPACE:	88,899 S.F.	0.10	31'-2"	2	IIB
BUILDING B RETAIL SPACE:	40,780 S.F.	0.05	30'-2"	1	IIB
BUILDING C RETAIL SPACE:	20,793 S.F.	0.03	29'-7"	1	IIB
RESTAURANT:	4,620 S.F.	0.01		1	
BANK:	3,500 S.F.	0.01		1	
RESTAURANT:	7,000 S.F.	0.01		1	
TOTAL:	165,592 S.F.				

* SECOND STORY CORPORATE OFFICES (10,000 S.F.) INCLUDED IN BUILDING A RETAIL S.F.

NOTE:
THIS SITE PLAN IS BASED ON THE MASTER PLAN, PROFFERS, DESIGN GUIDELINES, AND CONDITIONS, ASSOCIATED WITH CASE NOs. Z-0002-2010, MP-0001-2010 AND SUP-0029-2010 ADOPTED BY THE BOARD OF SUPERVISORS ON MARCH 22, 2011 AND THE DESIGN GUIDELINES ADOPTED BY THE BOARD OF SUPERVISORS ON MAY 8, 2007 WITH AMENDMENTS ASSOCIATED WITH CASE NO. SP-0077-2010 APPROVED BY THE PLANNING COMMISSION ON OCTOBER 6, 2010.

MASTER PLAN CHANGES

APPROVED BY DEVELOPMENT REVIEW COMMITTEE 9/23/10

MASTER PLAN CHANGES INCLUDE

1. THE SOUTHERNMOST "POCKET PARK" HAS BEEN MOVED TO THE NORTHERN END OF THE SITE PER A CLIENT REQUEST.
2. THE SPACE BETWEEN THE NORTHERN BUILDINGS HAS BEEN EXPANDED AND TURNED INTO A "MARKET SQUARE" PLAZA.
3. THE NORTHERNMOST BUILDING NOW HAS CORPORATE OFFICES IN IT AND WE HAVE PROVIDED PARKING BEHIND THE BUILDING AND AT THE END OF THE BUILDING TO SERVE THOSE OFFICES.
4. DUE TO THE CHANGE IN USE FOR THE PROJECT FROM A USUAL STRIP SHOPPING CENTER TO THE WILLIAMSBURG POTTERY WE HAVE PROVIDED BUS PARKING AT THE NORTHERN END OF THE PROJECT.
5. AS PART OF MOVING ALL OF THE RETAIL OPERATIONS OF THE WILLIAMSBURG POTTERY TO THE AREA IN FRONT OF THE TRACKS AND THE LIMITATION OF CUSTOMERS TRAVELING BEHIND THE TRACKS WE HAVE TRANSFERRED REQUIRED PLANT MATERIALS WITHIN THE REAR PLANTING AREA ADJACENT TO THE CSX RAILROAD CROSSING SUBJECT TO A LANDSCAPE MODIFICATION REQUEST APPROVED BY THE PLANNING COMMISSSION ON OCTOBER 6, 2010.

LANDSCAPING MODIFICATION REQUESTS/CHANGES (APPROVED BY THE PLANNING COMMISSION ON OCTOBER 6, 2010) INCLUDE:

6. WE ARE ALLOWED TO TRANSFER LANDSCAPING FROM BEHIND THE BUILDINGS (THE REAR YARD LANDSCAPING) TO OTHER AREAS OF THE SITE. WE ANTICIPATE THAT THIS WILL NOT EXCEED 65% TRANSFERRED
7. WE ARE ALLOWED TO TRANSFER UP TO 65% OF THE BUILDING AREA LANDSCAPING TO OTHER AREAS OF THE SITE. ORDINANCE ALLOWS A 50% TRANSFER WITHOUT A LANDSCAPE MODIFICATION REQUEST.

PARKING CALCULATIONS (PER ORDINANCE):

SHOPPING CENTER REQUIREMENTS: 4 SPACES / 1,000 S.F.

BUILDING A RETAIL SPACE:	78,899 S.F.
BUILDING B RETAIL SPACE:	40,780 S.F.
BUILDING C RETAIL SPACE:	20,793 S.F.
OUTDOOR DISPLAY AREA:	6,000 S.F.
RESTAURANT:	4,620 S.F.
RESTAURANT:	7,000 S.F.
BANK:	3,500 S.F.
OFFICE:	10,000 S.F.
TOTAL:	171,412 S.F.

SHOPPING CENTER REQUIRED SPACES:
(170,792 S.F. / 1,000 S.F.) * 4 SPACES = 686 SPACES REQUIRED
* 2% HANDICAP SPACES = 14 HANDICAP REQUIRED

TOTAL PARKING PROVIDED = 721 SPACES PROVIDED
HANDICAP PROVIDED = 18 SPACES PROVIDED
BUS SPACES = 8 SPACES PROVIDED (INCLUDING 1 MINI-BUS SPACE)

35 SPACES PROVIDED IN EXCESS OF REQUIREMENT + BUS PARKING TO MEET OWNER EXPECTATION OF FUTURE NEED RESULTING FROM THIS REDEVELOPMENT.

VDOT APPROVAL CONDITIONS

FOR SP-0077-2010, APPROVED 2/18/11 SUBJECT TO THE FOLLOWING CONDITIONS:

1. THE CONTRACTOR SHALL REMOVE ALL TRAFFIC SIGNAL POLE AND CABINET FOUNDATIONS TO 24" BELOW GRADE.
2. THE CONTRACTOR SHALL REMOVE AND SALVAGE ALL MAST ARMS, MAST ARM POLES, JUNCTION BOXES AND ASSOCIATED WIRE.
3. THE CONTRACTOR SHALL ABANDON IN PLACE ALL CONDUIT AND SHALL REMOVE ALL CONDUIT AT REMOVED JUNCTION BOXES TO 24" BELOW GRADE.
4. THE CONTRACTOR SHALL FILL AND GRADE ALL WORK AREAS DISTURBED AS PART OF THIS TRAFFIC SIGNAL REMOVAL IN ACCORDANCE WITH VDOT SPECIFICATIONS.

JCSA WATER DEMANDS:

146,152 S.F. SHOPPING CENTER
10,000 S.F. CORPORATE OFFICE
3,500 S.F. BANK
148 SEAT RESTAURANT (4,620 S.F.)
200 SEAT RESTAURANT (7,000 S.F.)
TOTAL WATER DEMAND = 41,020.4 GPD
AVG. DAY DEMAND = 53.36 GPM
MAX. DAY DEMAND = 90.71 GPM
PEAK HOUR DEMAND = 213.44 GPM
(NO IRRIGATION PROPOSED)
REQUIRED FIRE FLOW = 2,500 GPM @ 20 PSI
PROVIDED FIRE FLOW = 2,500 GPM @ 20.4 PSI

REQUIRED PERMIT LIST:

VSMP
USACOE
CHESAPEAKE BAY
LAND DISTURBING
VDOT

POLLUTANT LOAD SUMMARY:

PRE-DEVELOPMENT IMPERVIOUS = 78.8%
PRE-DEVELOPMENT PHOSPHORUS LOAD (Lpre) = 17.30 LBS/YEAR
POST-DEVELOPMENT IMPERVIOUS = 76.1%*
POST-DEVELOPMENT PHOSPHORUS LOAD (Lpost) = 31.50 LBS/YEAR
IMPERVIOUS COVER DRAINING TO BMP = 26.7± AC, 44.1% OF WATERSHED
PHOSPHORUS LOAD ENTERING BMP (Lbmp) = 61.7 LBS/YR
REQUIRED POLLUTANT REMOVAL = 15.90 LBS/YEAR
POLLUTANT REMOVED = 30.90 LBS/YEAR

*POST DEVELOPMENT IMPERVIOUS COVER DESCRIBES THE 18.78 ACRE AREA BETWEEN ROUTE 60 AND THE CSX RIGHT-OF-WAY. THE OVERALL IMPERVIOUS COVER FOR ALL OF THE WILLIAMSBURG POTTERY PROPERTY WAS NOT STUDIED AND IS NOT KNOWN AT THIS TIME.

EXCEPTIONS / VARIANCE / WAIVERS:

50' CCC (PROFFER 37' AVG.)
25% SLOPE WAIVER (GRANTED)
SECOND MONUMENT SIGN

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Stonehouse District James City County Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: -	Date: 9/3/2010

Sheet Title:
Cover Sheet

Sheet Number
1

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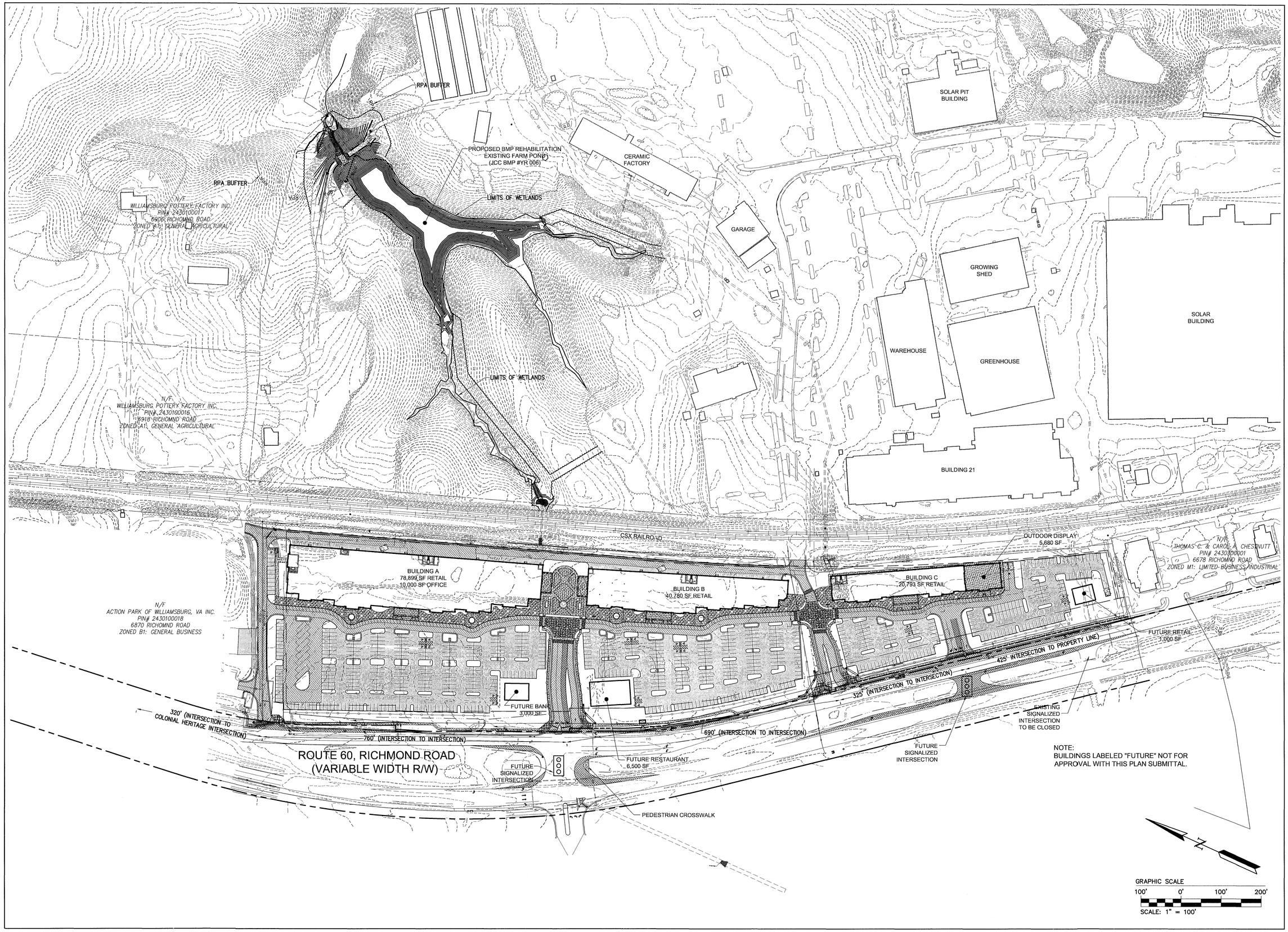

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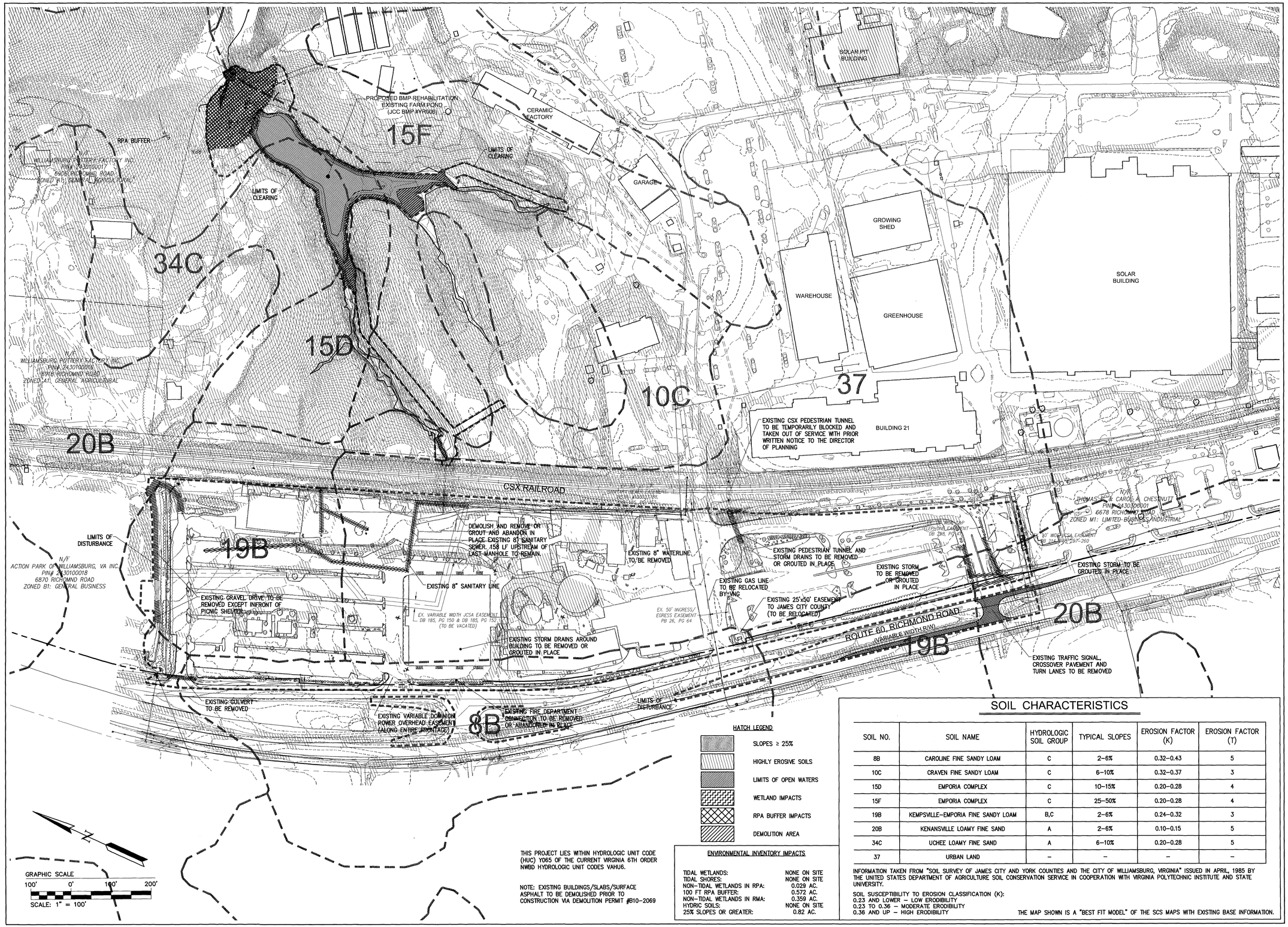
Sheet Title:
Overall Development Plan

Sheet Number
2



HATCH LEGEND

- SLOPES ≥ 25%
- HIGHLY EROSIVE SOILS
- LIMITS OF OPEN WATERS
- WETLAND IMPACTS
- RPA BUFFER IMPACTS
- DEMOLITION AREA

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NOTE: EXISTING BUILDINGS/SLABS/SURFACE ASPHALT TO BE DEMOLISHED PRIOR TO CONSTRUCTION VIA DEMOLITION PERMIT #B10-2069

ENVIRONMENTAL INVENTORY IMPACTS

TIDAL WETLANDS:	NONE ON SITE
TIDAL SHORES:	NONE ON SITE
NON-TIDAL WETLANDS IN RPA:	0.029 AC.
100 FT RPA BUFFER:	0.572 AC.
NON-TIDAL WETLANDS IN RMA:	0.359 AC.
HYDRIC SOILS:	NONE ON SITE
25% SLOPES OR GREATER:	0.82 AC.

SOIL CHARACTERISTICS

SOIL NO.	SOIL NAME	HYDROLOGIC SOIL GROUP	TYPICAL SLOPES	EROSION FACTOR (K)	EROSION FACTOR (T)
8B	CAROLINE FINE SANDY LOAM	C	2–6%	0.32–0.43	5
10C	CRAVEN FINE SANDY LOAM	C	6–10%	0.32–0.37	3
15D	EMPORIA COMPLEX	C	10–15%	0.20–0.28	4
15F	EMPORIA COMPLEX	C	25–50%	0.20–0.28	4
19B	KEMPSVILLE–EMPORIA FINE SANDY LOAM	B,C	2–6%	0.24–0.32	3
20B	KENANSVILLE LOAMY FINE SAND	A	2–6%	0.10–0.15	5
34C	UCHEE LOAMY FINE SAND	A	6–10%	0.20–0.28	5
37	URBAN LAND	–	–	–	–

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Sheet Title:
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Sheet Number
3

Rev.	Date	Description	Revised By
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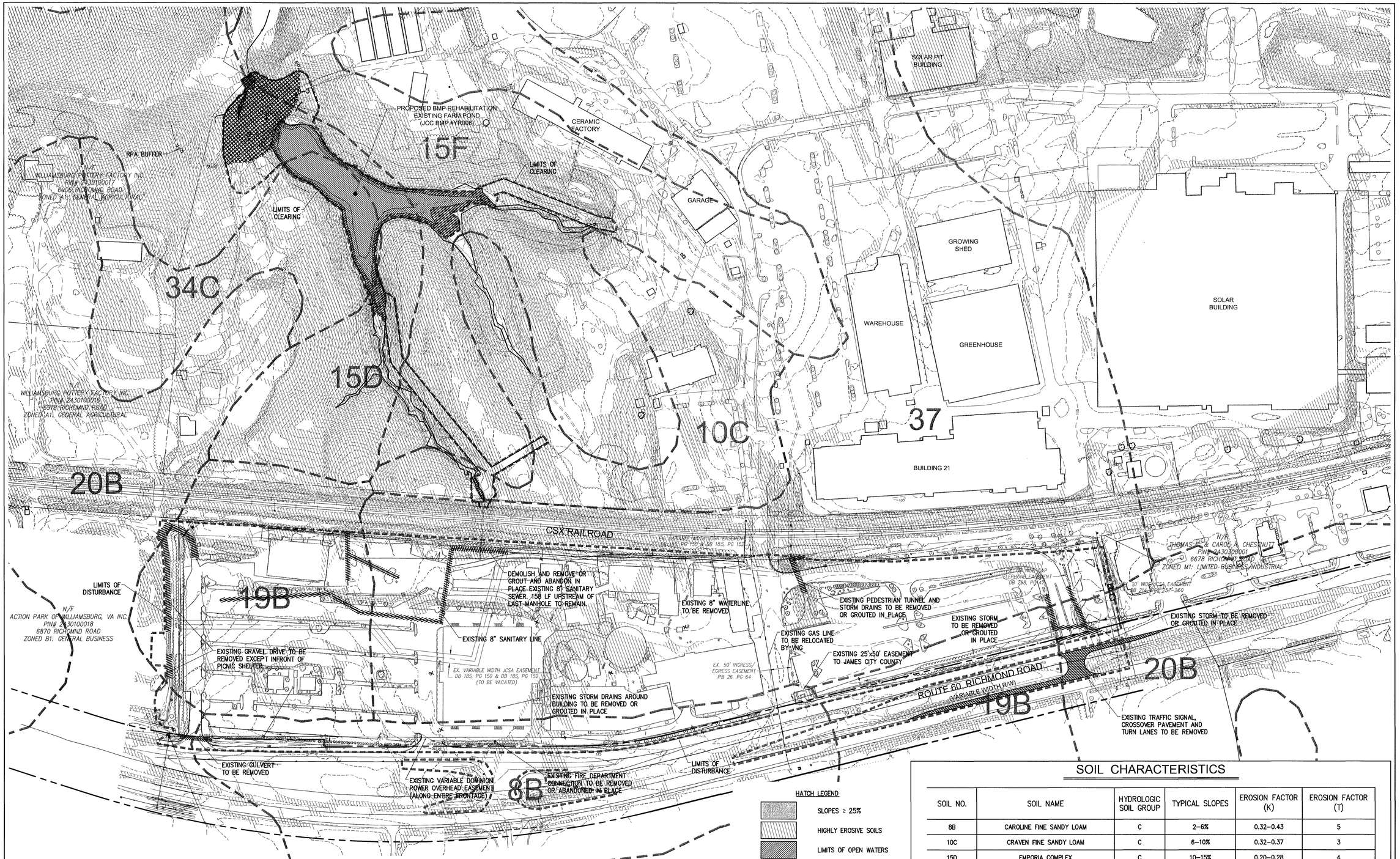

HATCH LEGEND

- SLOPES ≥ 25%
- HIGHLY EROSIVE SOILS
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- WETLAND IMPACTS
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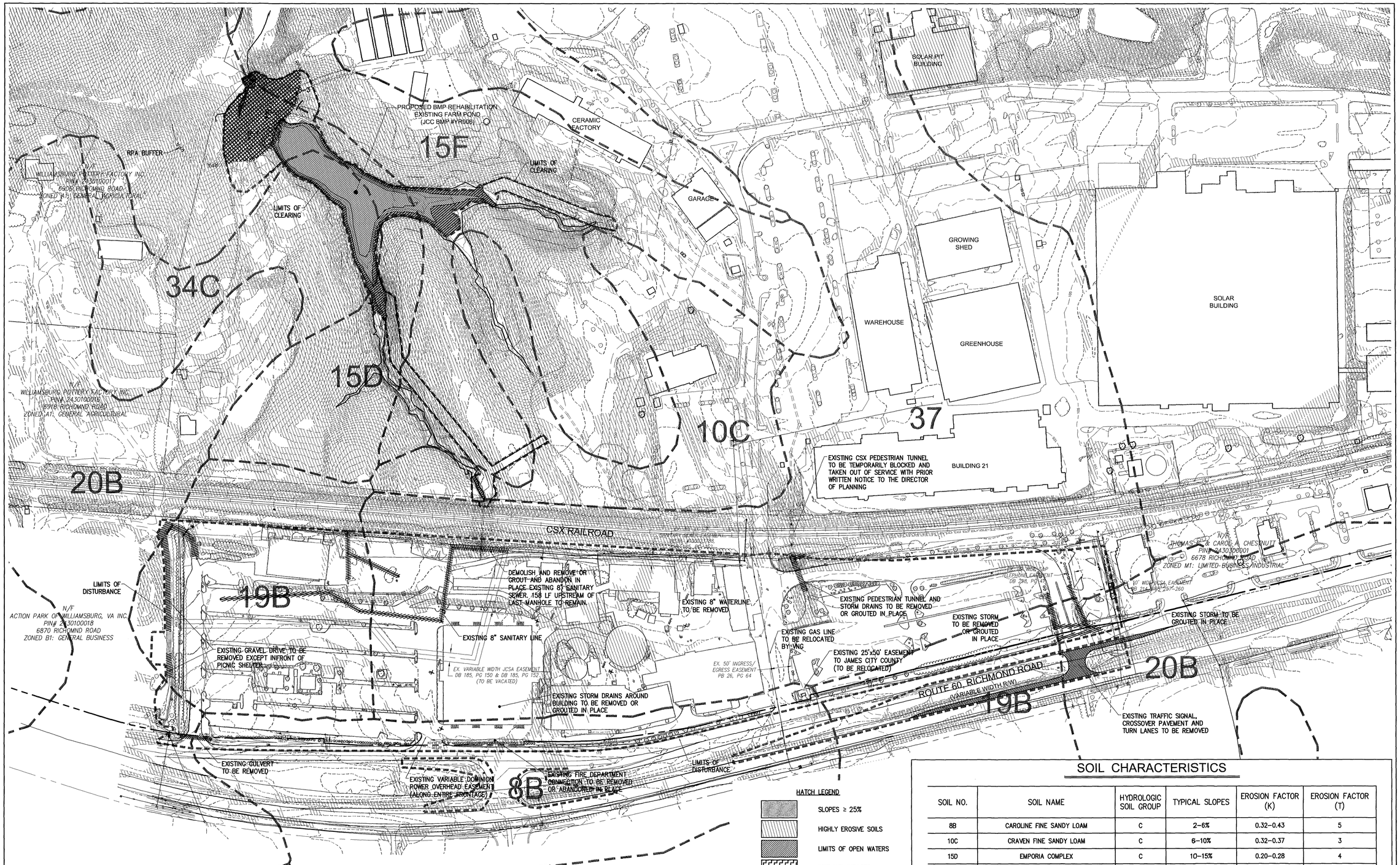

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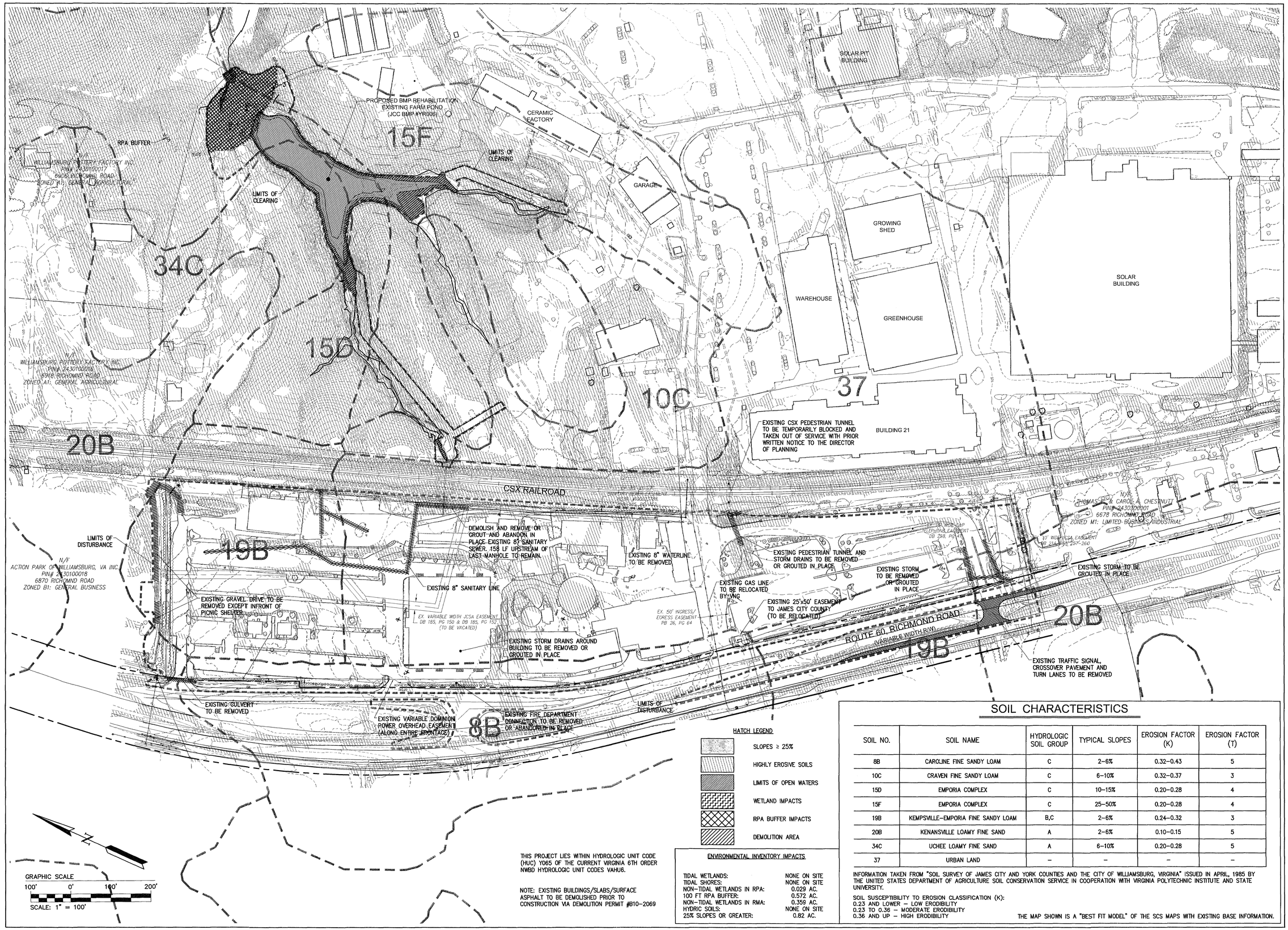

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3

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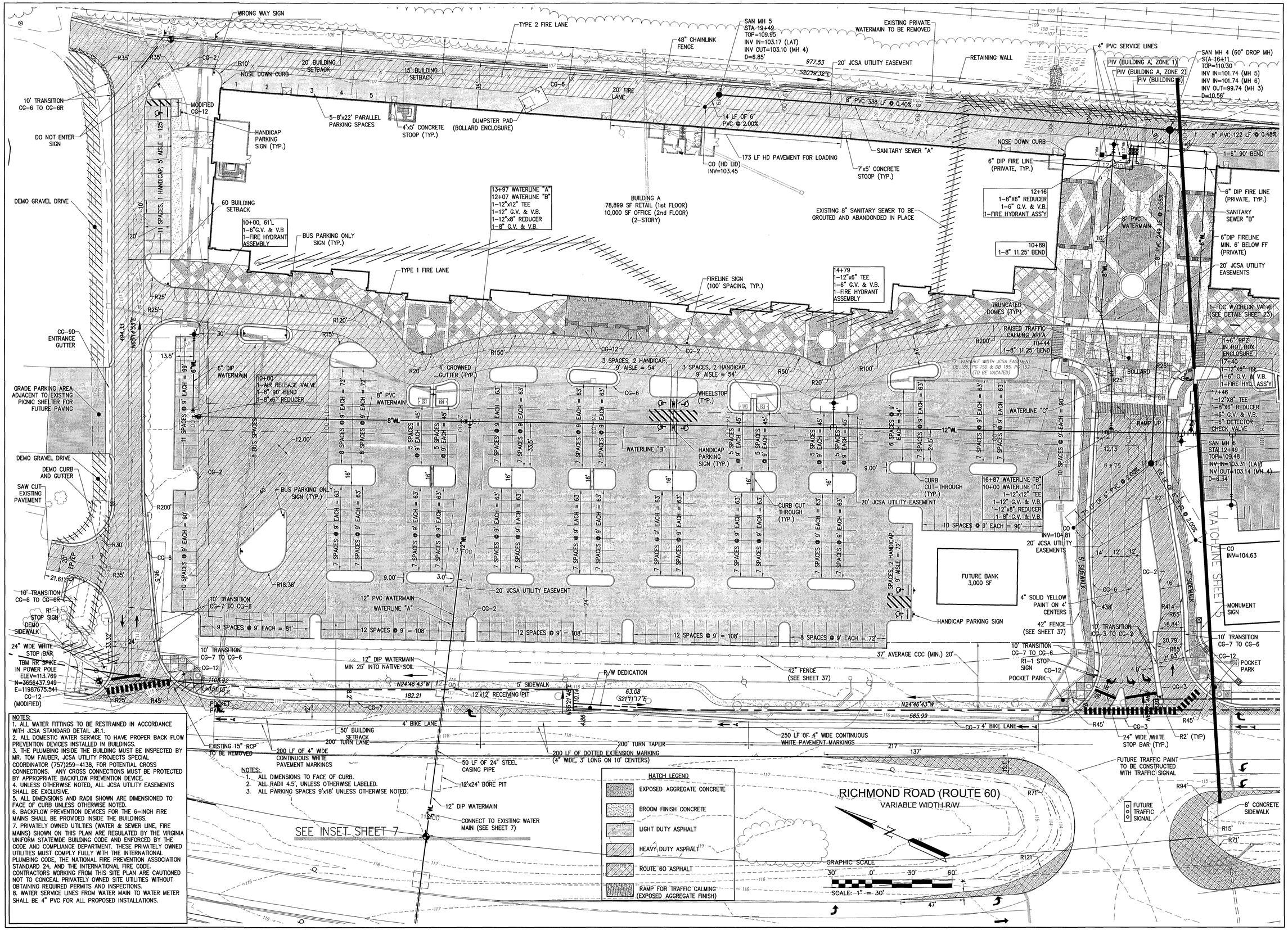

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8. WATER SERVICE LINES FROM WATER MAIN TO WATER METER SHALL BE 4" PVC FOR ALL PROPOSED INSTALLATIONS.

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4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/19/10	Revised for Staff Comments	MJR
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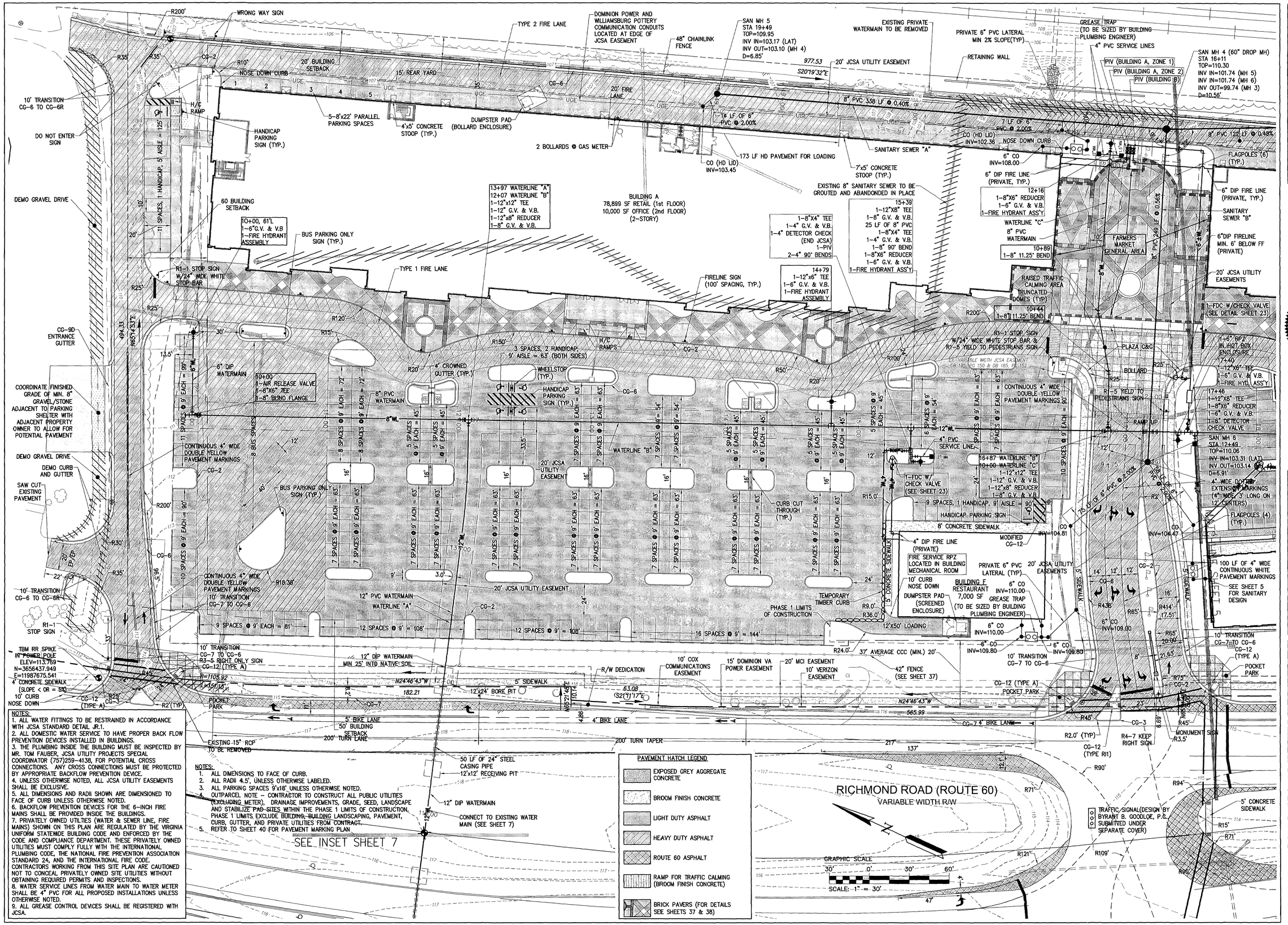
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Site & Utility Plan
Sheet Number	4



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8	10/27/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised s/W Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
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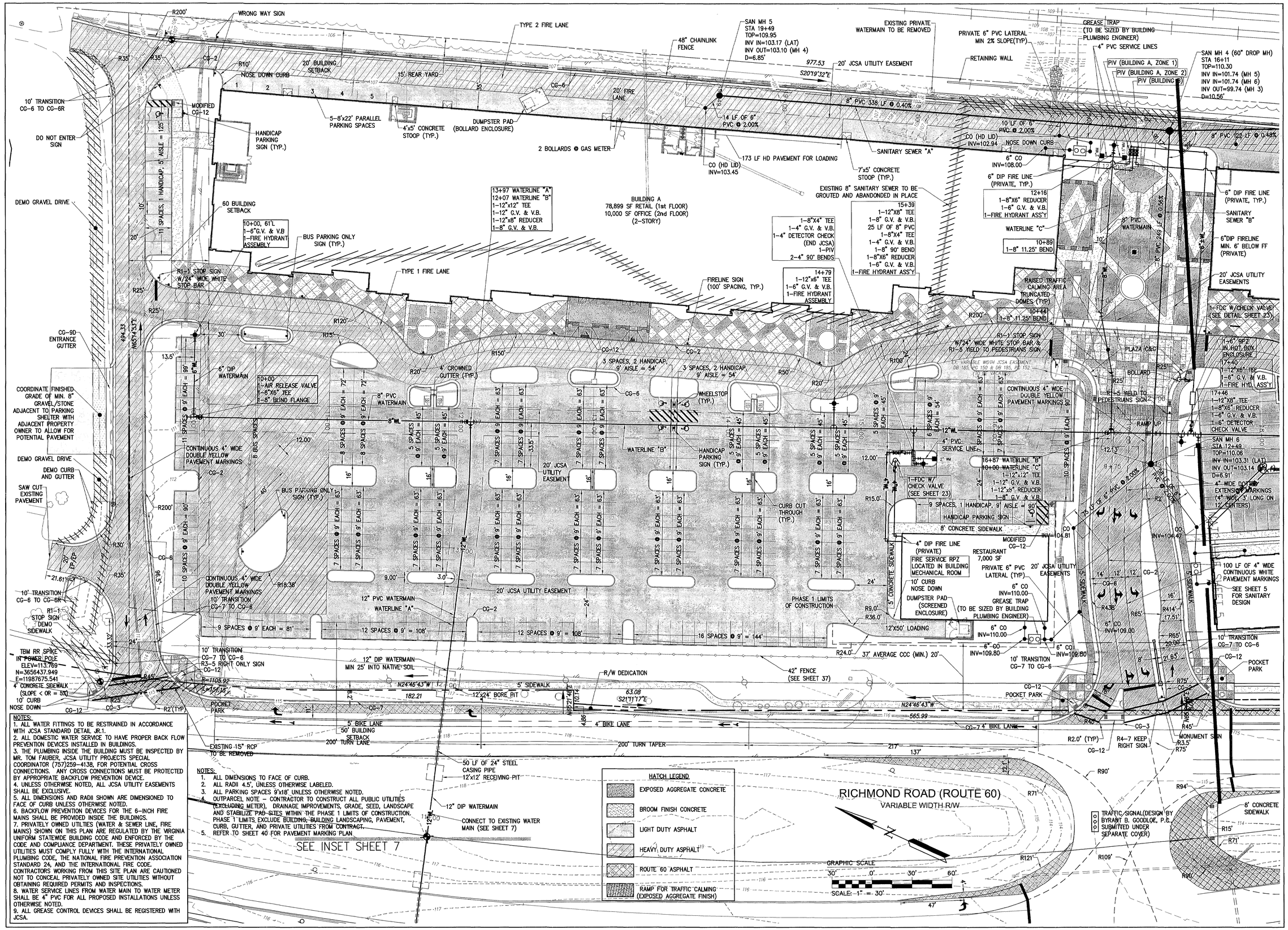

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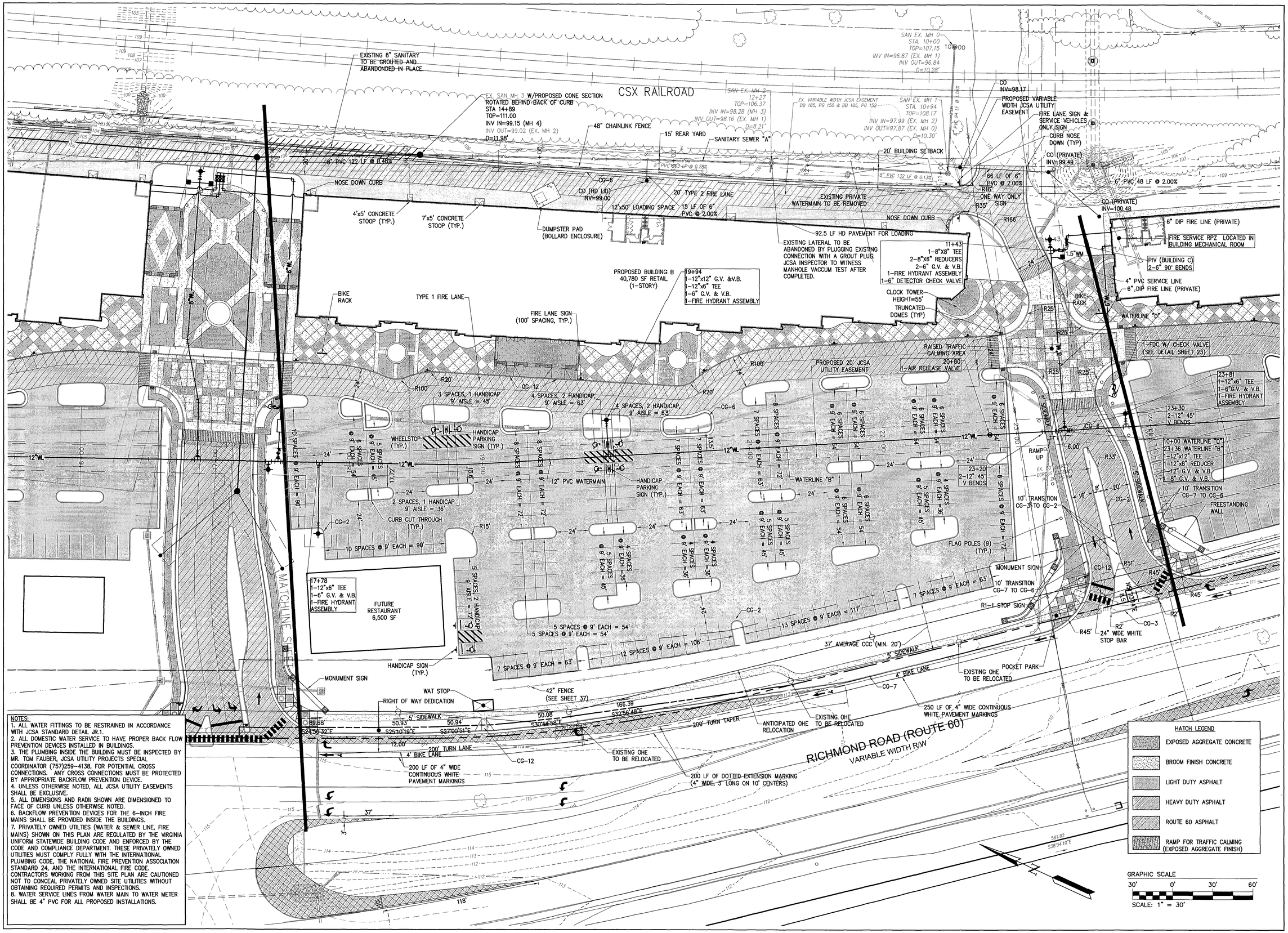

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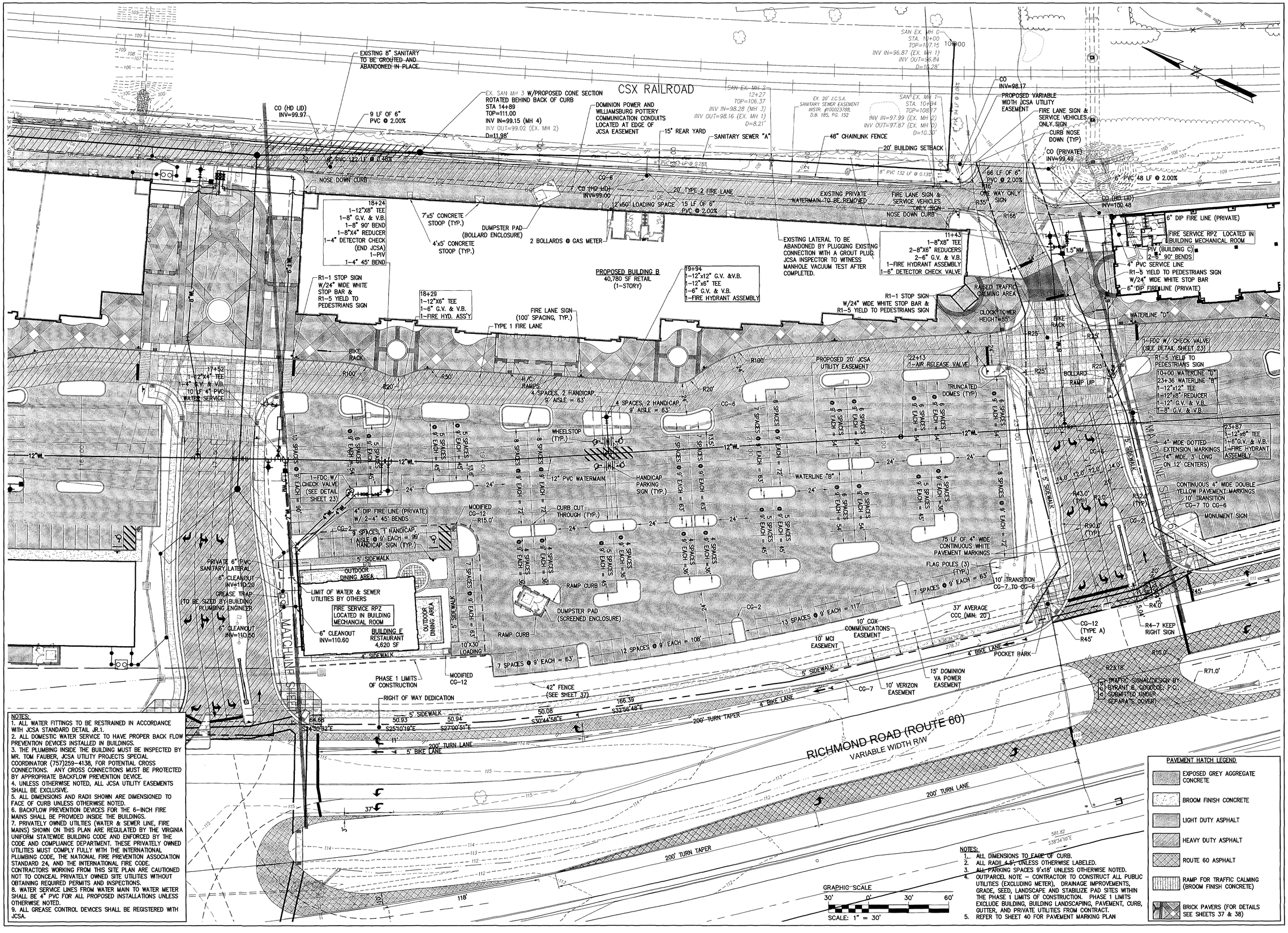

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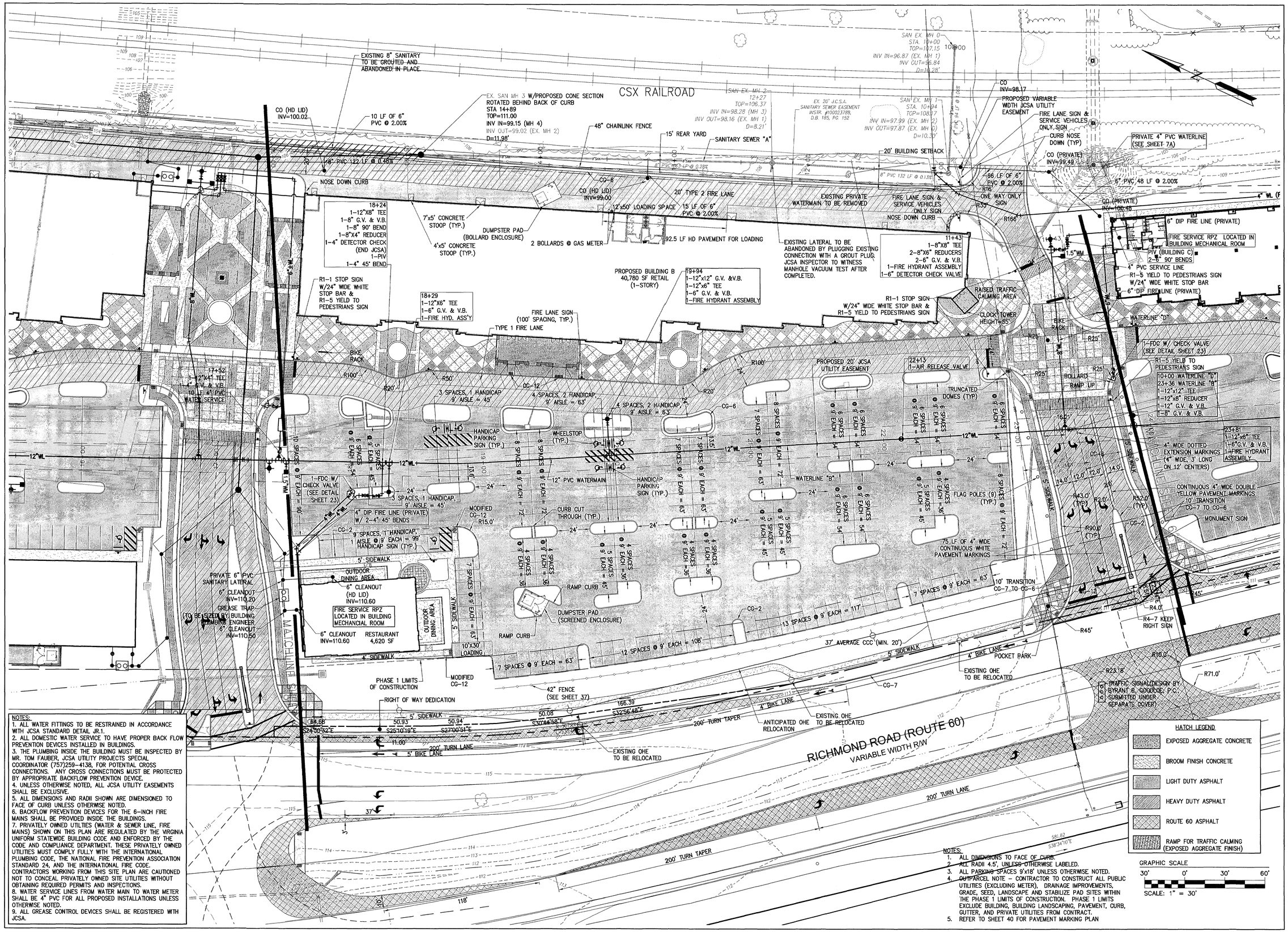

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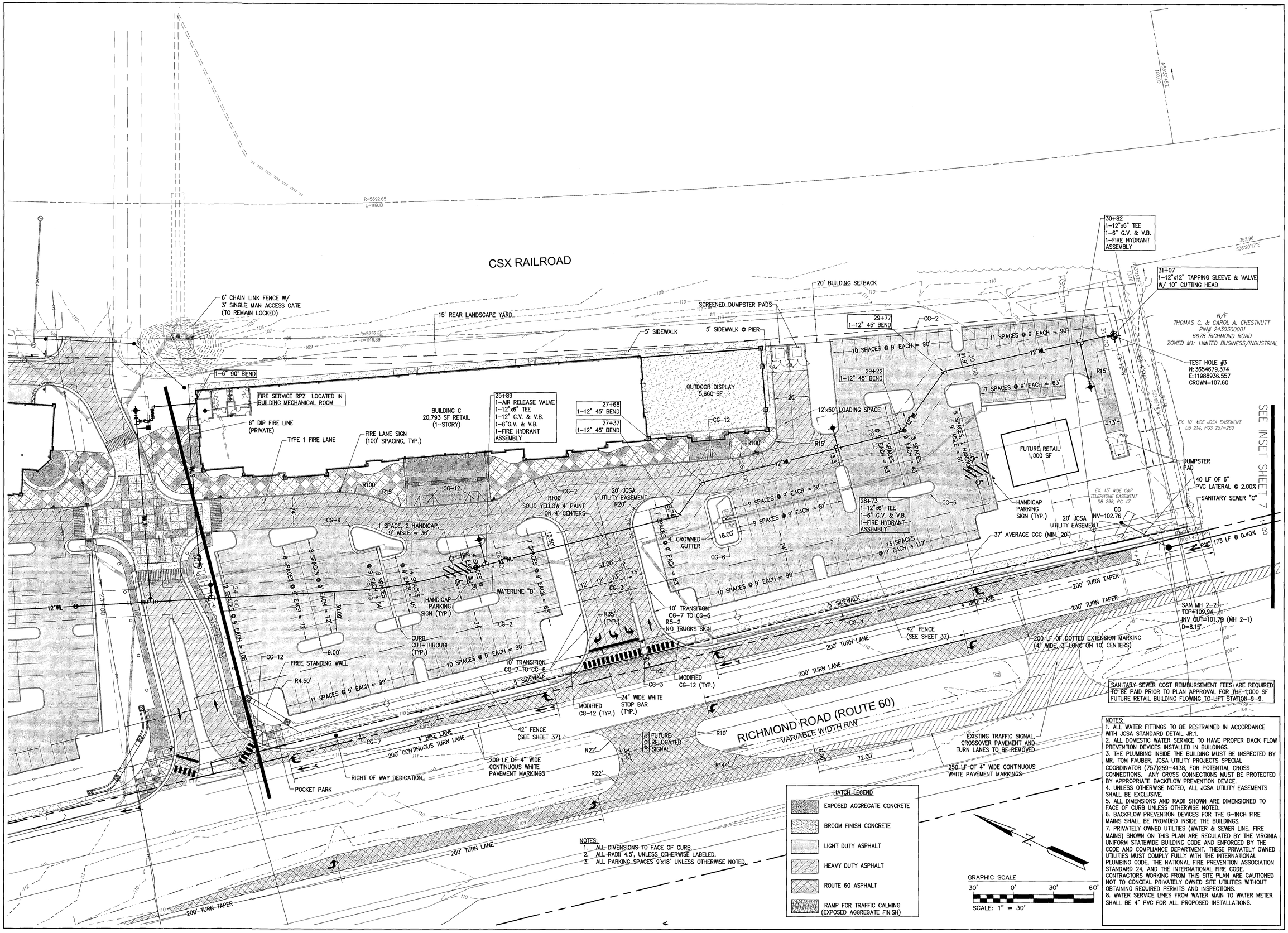

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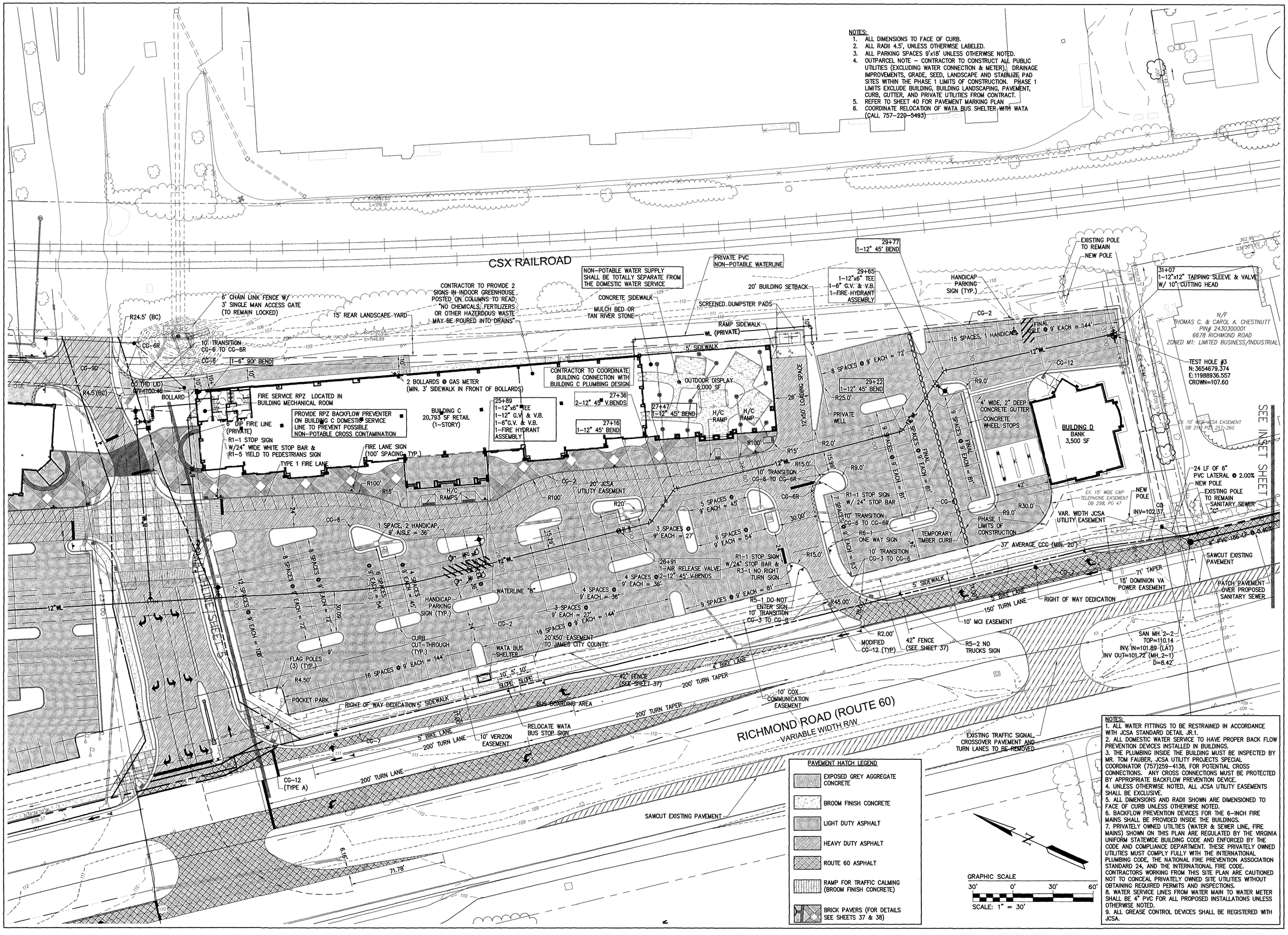

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- EXPOSED GREY AGGREGATE CONCRETE
- BROOM FINISH CONCRETE
- LIGHT DUTY ASPHALT
- HEAVY DUTY ASPHALT
- ROUTE 60 ASPHALT
- RAMP FOR TRAFFIC CALMING (BROOM FINISH CONCRETE)
- BRICK PAVERS (FOR DETAILS SEE SHEETS 37 & 38)

NOTES:
1. ALL WATER FITTINGS TO BE RESTRAINED IN ACCORDANCE WITH JCSA STANDARD DETAIL JR.1.
2. ALL DOMESTIC WATER SERVICE TO HAVE PROPER BACK FLOW PREVENTION DEVICES INSTALLED IN BUILDINGS.
3. THE PLUMBING INSIDE THE BUILDING MUST BE INSPECTED BY MR. TOM FAUBER, JCSA UTILITY PROJECTS SPECIAL COORDINATOR (757)259-4138, FOR POTENTIAL CROSS CONNECTIONS. ANY CROSS CONNECTIONS MUST BE PROTECTED BY APPROPRIATE BACKFLOW PREVENTION DEVICE.
4. UNLESS OTHERWISE NOTED, ALL JCSA UTILITY EASEMENTS SHALL BE EXCLUSIVE.
5. ALL DIMENSIONS AND RADII SHOWN ARE DIMENSIONED TO FACE OF CURB UNLESS OTHERWISE NOTED.
6. BACKFLOW PREVENTION DEVICES FOR THE 6-INCH FIRE MAINS SHALL BE PROVIDED INSIDE THE BUILDINGS.
7. PRIVATELY OWNED UTILITIES (WATER & SEWER LINE, FIRE MAINS) SHOWN ON THIS PLAN ARE REGULATED BY THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE AND ENFORCED BY THE CODE AND COMPLIANCE DEPARTMENT. THESE PRIVATELY OWNED UTILITIES MUST COMPLY FULLY WITH THE INTERNATIONAL PLUMBING CODE, THE NATIONAL FIRE PREVENTION ASSOCIATION STANDARD 24, AND THE INTERNATIONAL FIRE CODE. CONTRACTORS WORKING FROM THIS SITE PLAN ARE CAUTIONED NOT TO CONCEAL PRIVATELY OWNED SITE UTILITIES WITHOUT OBTAINING REQUIRED PERMITS AND INSPECTIONS.
8. WATER SERVICE LINES FROM WATER MAIN TO WATER METER SHALL BE 4" PVC FOR ALL PROPOSED INSTALLATIONS UNLESS OTHERWISE NOTED.
9. ALL GREASE CONTROL DEVICES SHALL BE REGISTERED WITH JCSA.

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
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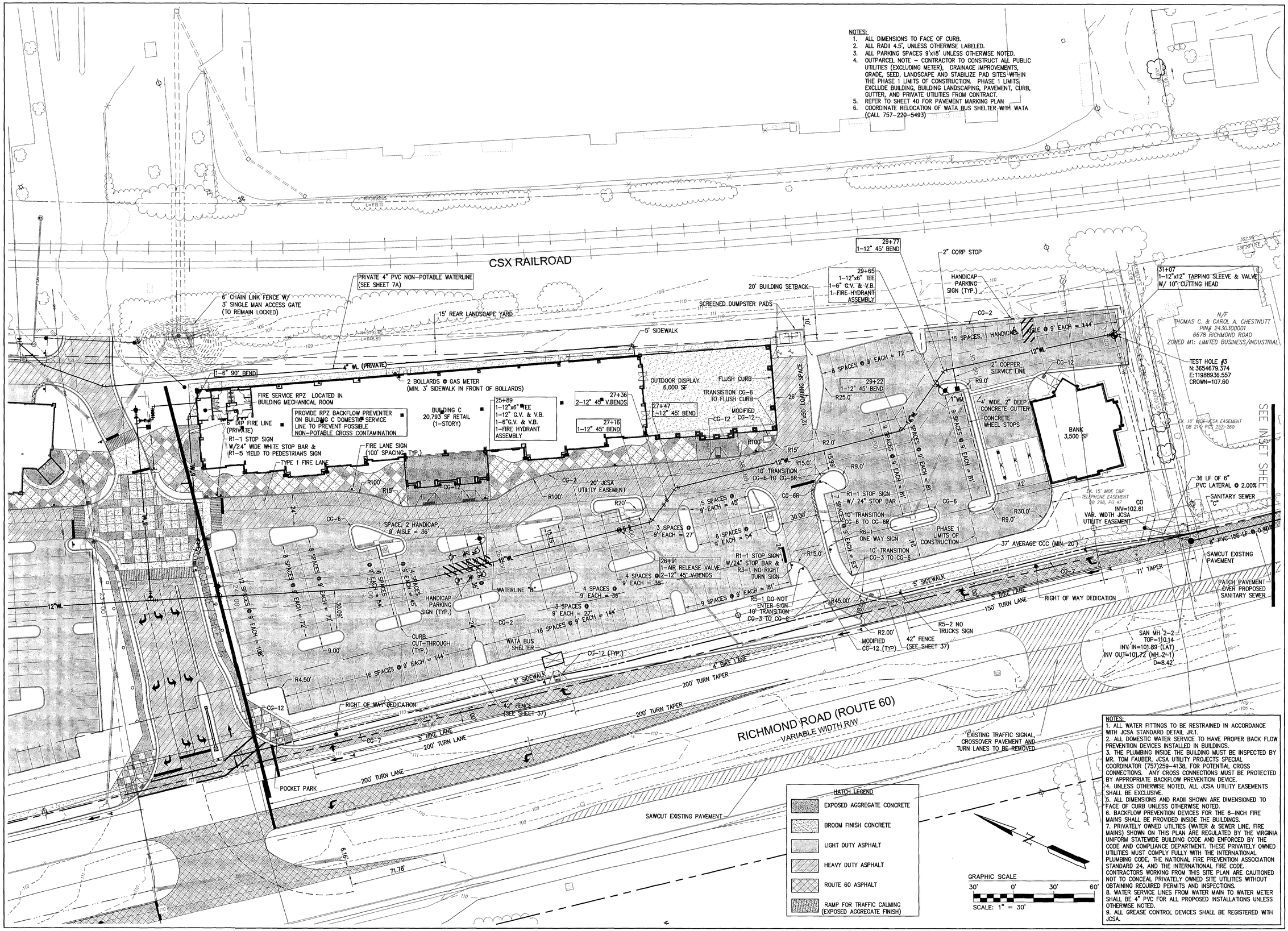
Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title: Site & Utility Plan

Sheet Number
6

NOTES:
1. ALL DIMENSIONS TO FACE OF CURB.
2. ALL RADII 4.5', UNLESS OTHERWISE LABELED.
3. ALL PARKING SPACES 9'x18' UNLESS OTHERWISE NOTED.
4. OUTPARCEL NOTE – CONTRACTOR TO CONSTRUCT ALL PUBLIC UTILITIES (EXCLUDING METER), DRAINAGE IMPROVEMENTS, GRADE, SEED, LANDSCAPE AND STABILIZE PAD SITES WITHIN THE PHASE 1 LIMITS OF CONSTRUCTION. PHASE 1 LIMITS EXCLUDE BUILDING, BUILDING LANDSCAPING, PAVEMENT, CURB, GUTTER, AND PRIVATE UTILITIES FROM CONTRACT.
5. REFER TO SHEET 4D FOR PAVEMENT MARKING PLAN
6. COORDINATE RELOCATION OF WATA BUS SHELTER WITH WATA (CALL 757-220-5493)



HATCH LEGEND
- EXPOSED AGGREGATE CONCRETE
- BROOM FINISH CONCRETE
- LIGHT DUTY ASPHALT
- HEAVY DUTY ASPHALT
- ROUTE 60 ASPHALT
- RAMP FOR TRAFFIC CALMING (EXPOSED AGGREGATE FINISH)

NOTES:
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3	12/15/10	Revised for Staff Comments	MJR
2	11/16/10	Revised for Staff Comments	MJR
1	10/25/10	Revised for Staff Comments	MJR

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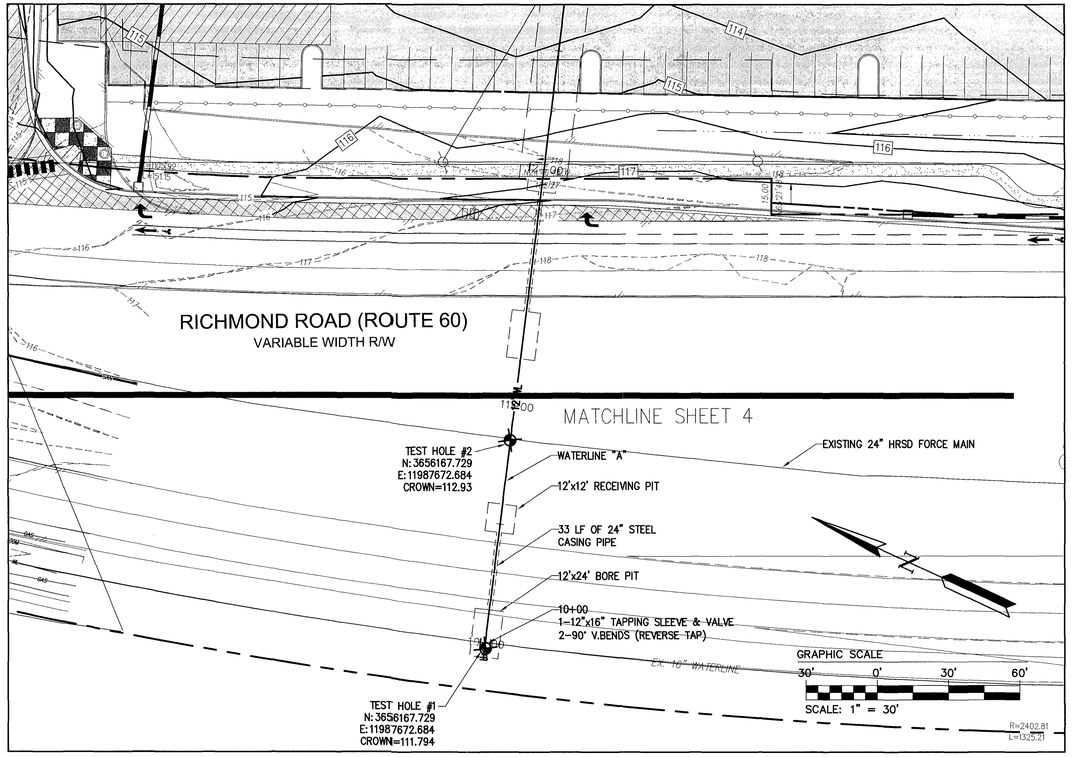
James City County, Virginia

Stonehouse District

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title: Site & Utility Plan

Sheet Number: 6



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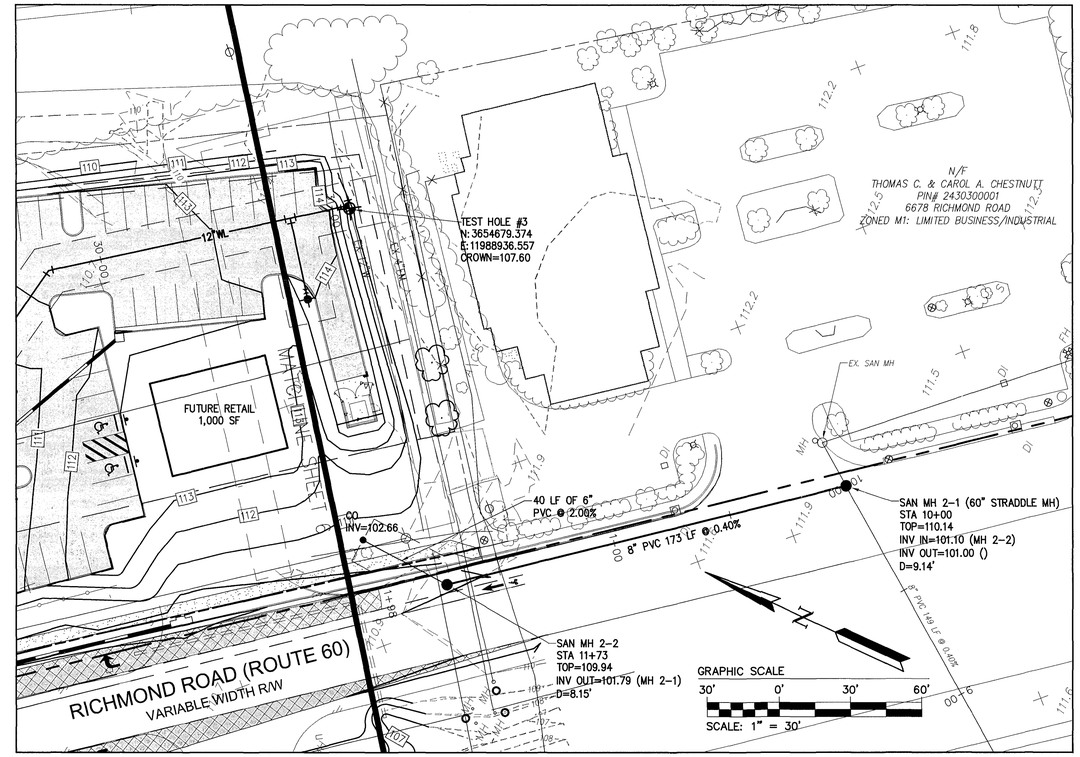

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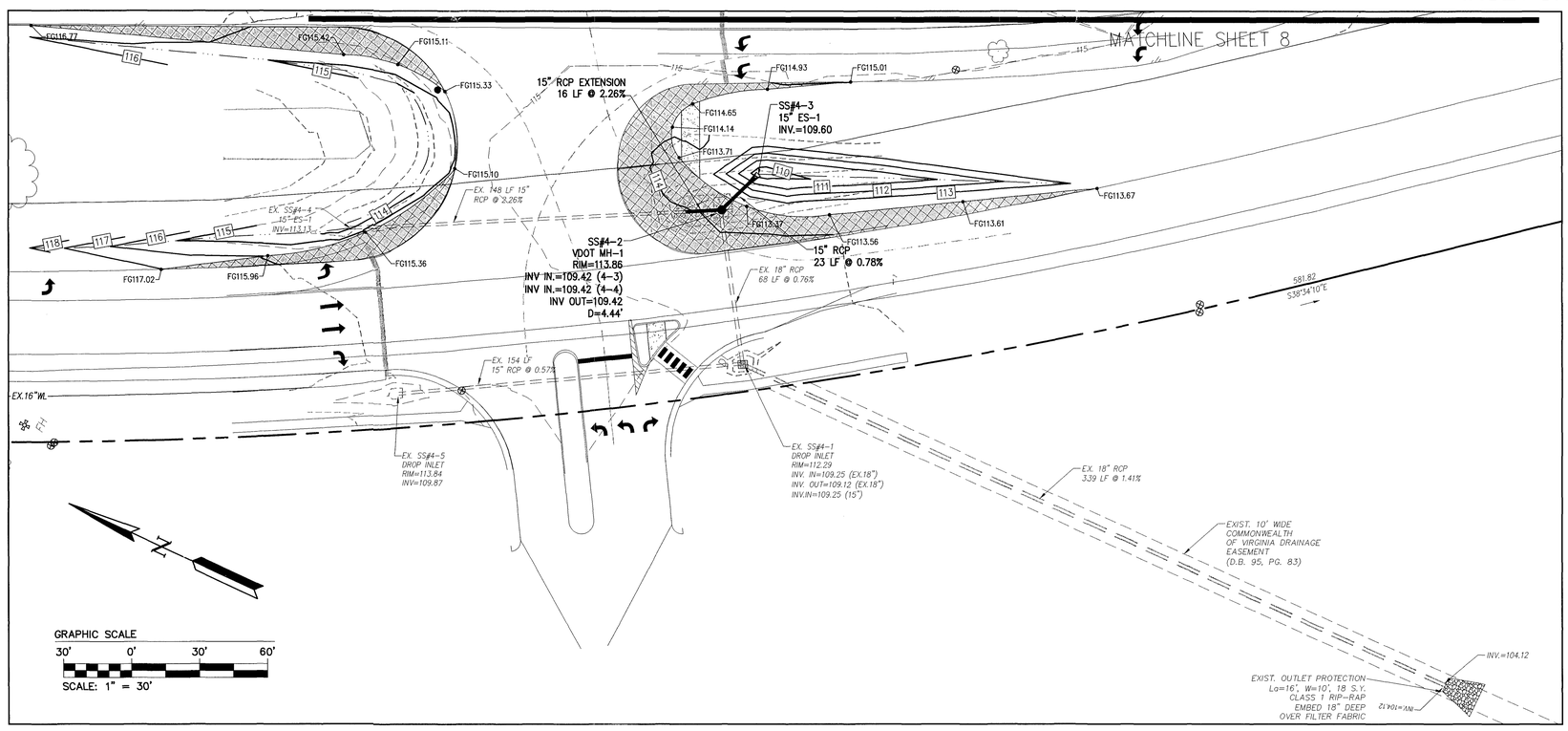

INSET SHEET# 8, SCALE 1"=30'

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
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1	10/20/10	Revised for Staff Comments	MJR

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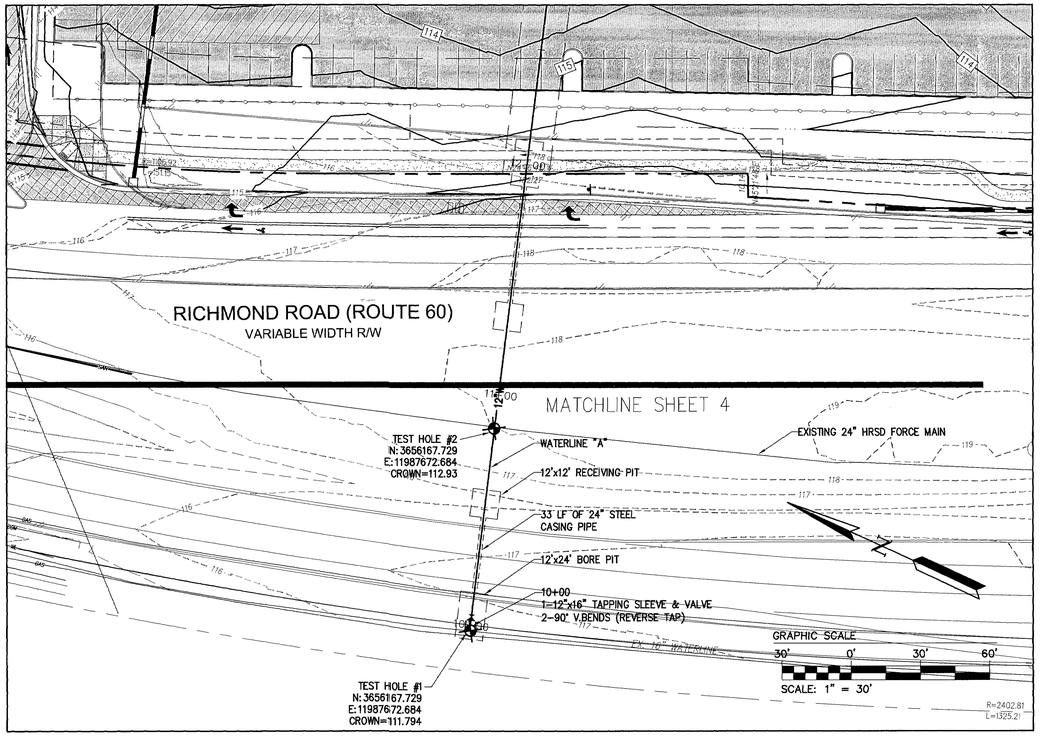
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Site & Utility Insets

Sheet Number
7



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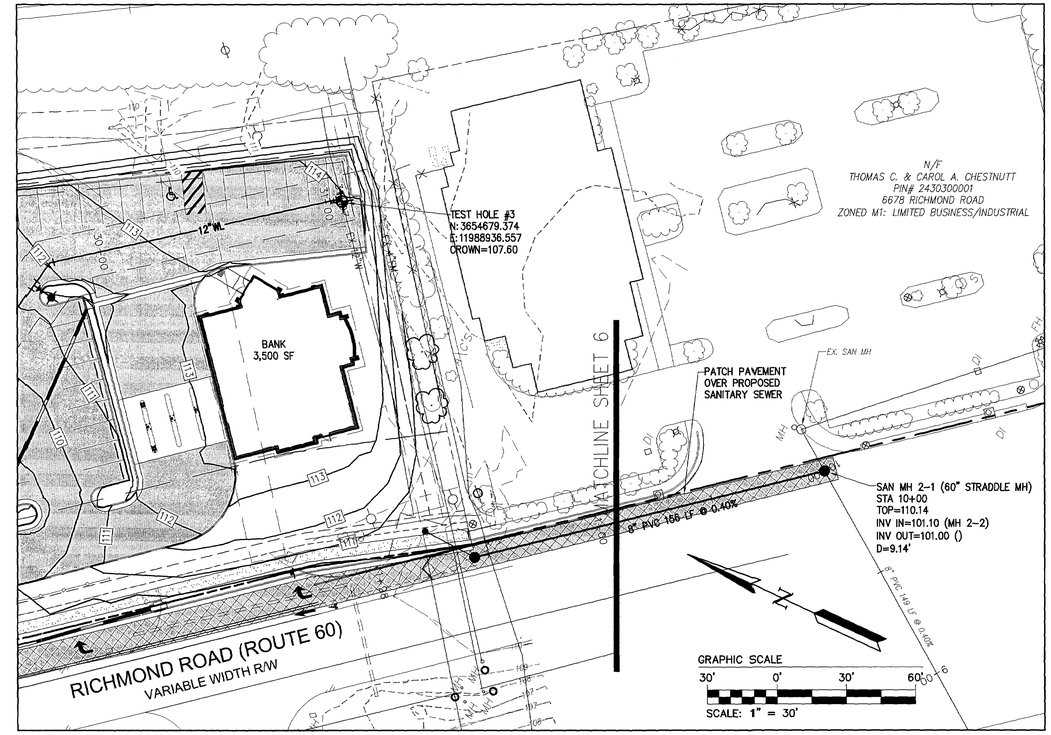

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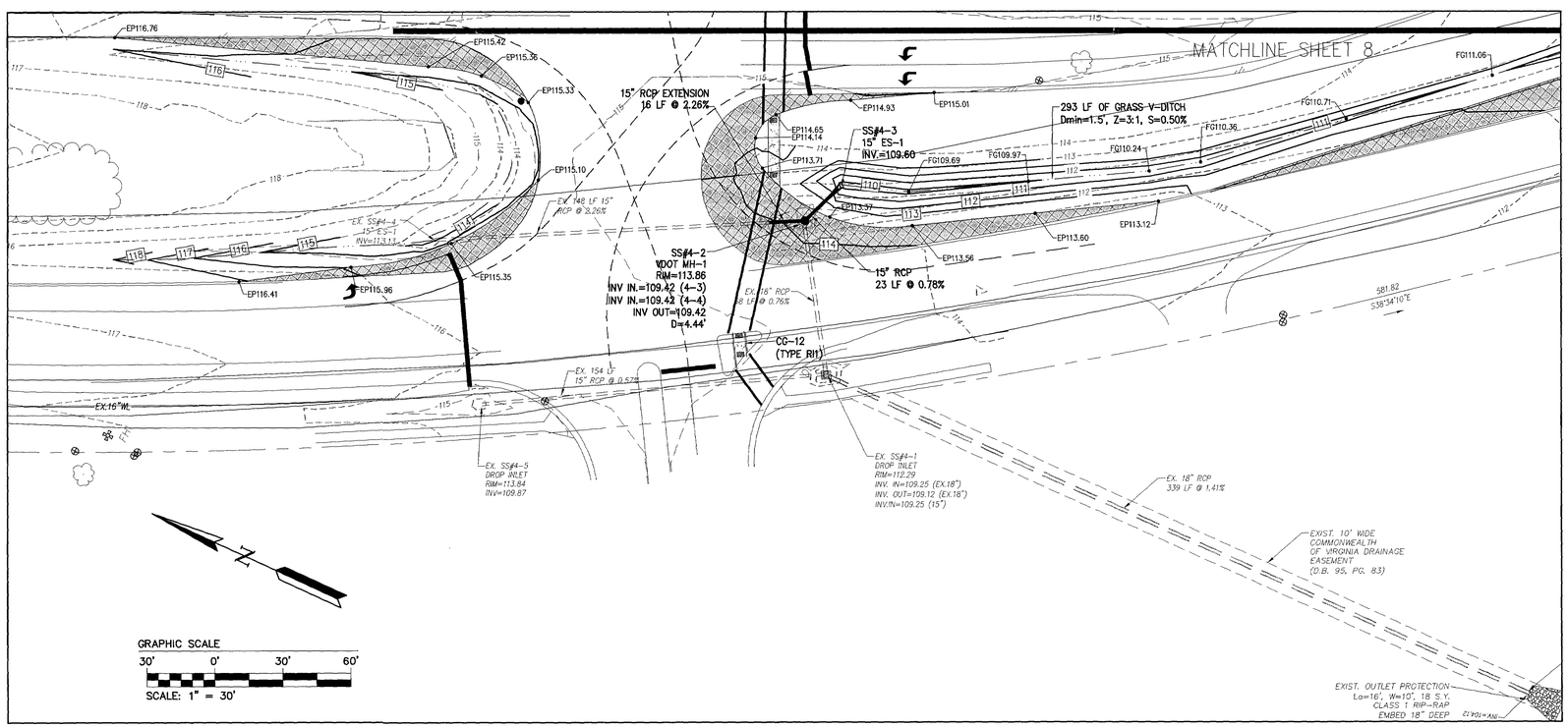

INSET SHEET# 8, SCALE 1"=30'

NOTE: TC'S AND EP'S WITHIN VDOT RIGHT OF WAY TO BE ESTABLISHED FROM EXISTING EDGE OF PAVEMENT. FIELD VERIFY EDGE OF EXISTING PAVEMENT AT THE TIME OF CONSTRUCTION

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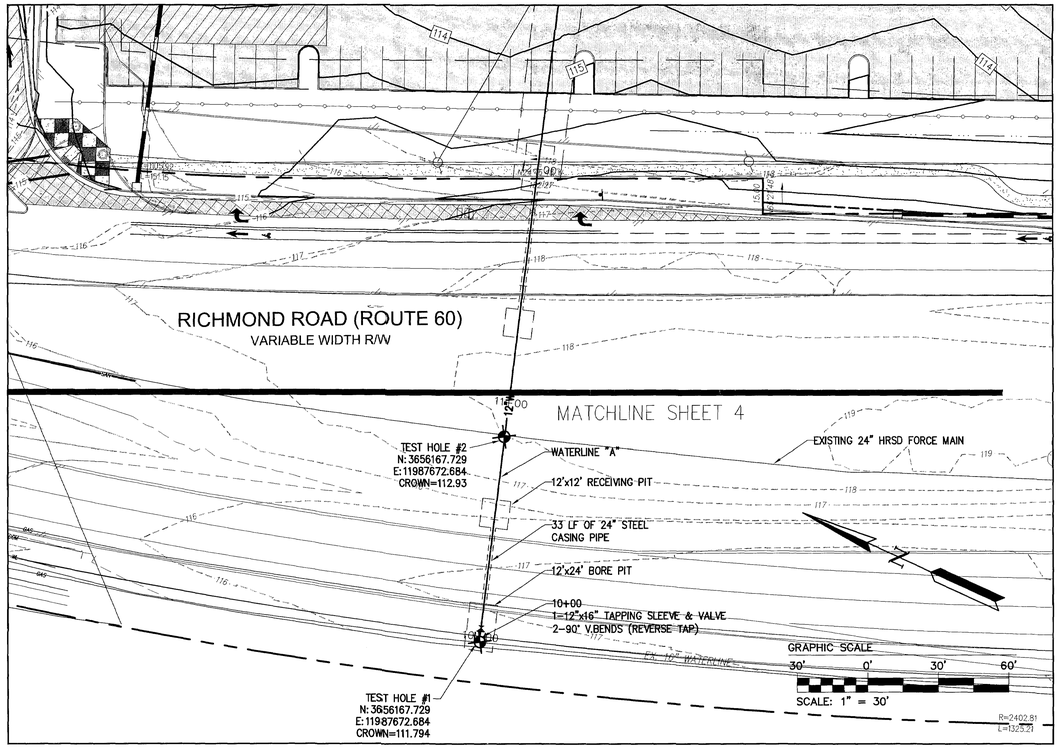

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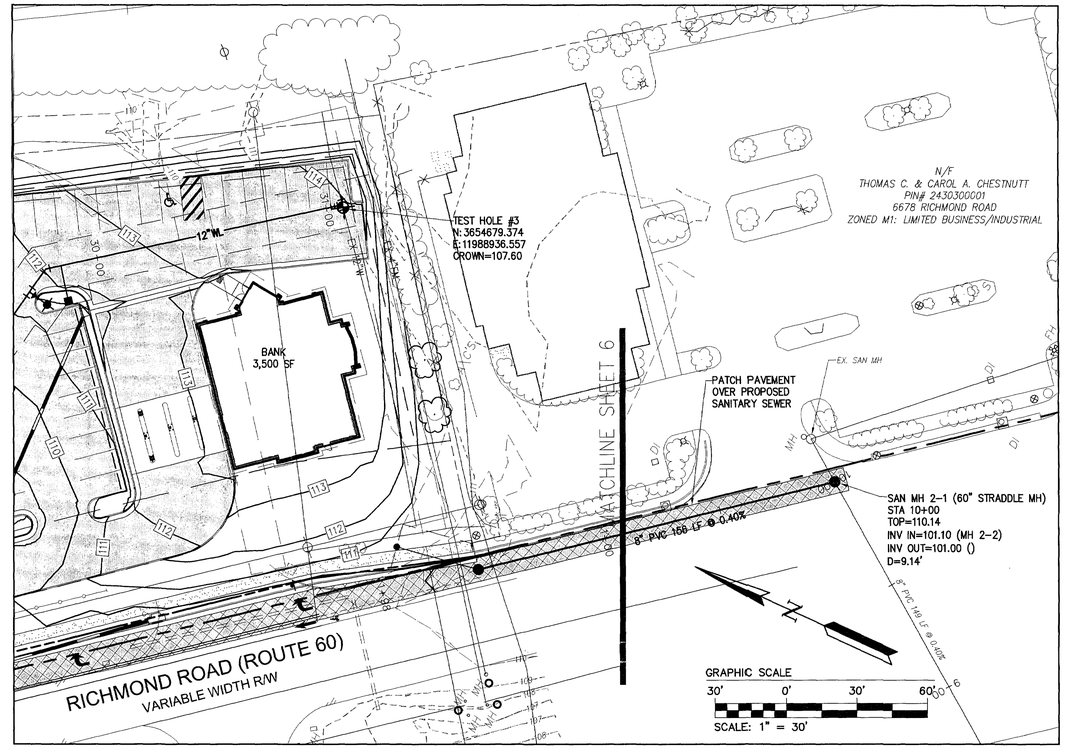

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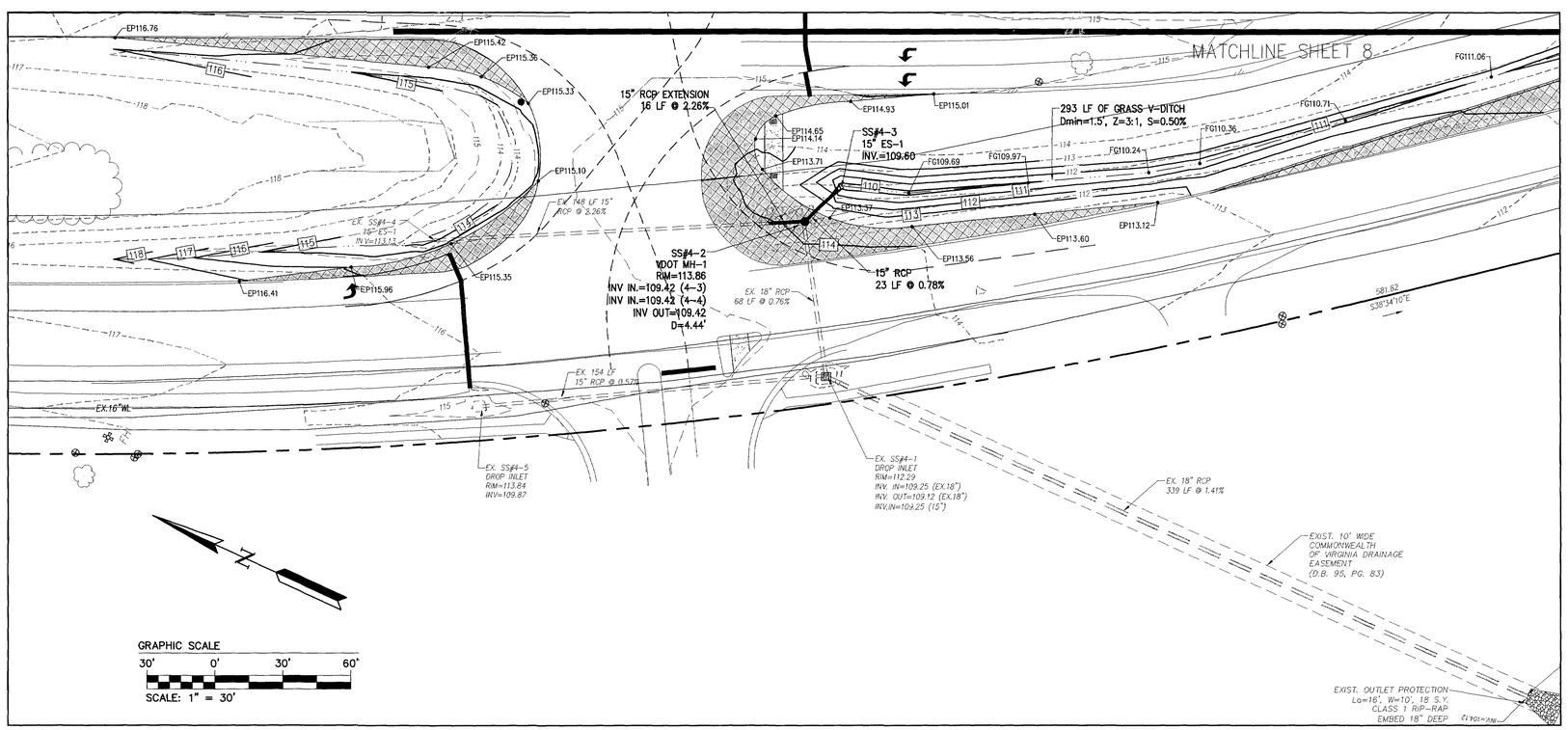

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NOTE: TC'S AND EP'S WITHIN VDOT RIGHT OF WAY TO BE ESTABLISHED FROM EXISTING EDGE OF PAVEMENT. FIELD VERIFY EDGE OF EXISTING PAVEMENT AT THE TIME OF CONSTRUCTION

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Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title: Site & Utility Insets	

Sheet Number
7

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NOTES:

1. IN ACCORDANCE WITH THE AGREEMENT DATED MAY 13, 1980 WITH THE JAMES CITY SERVICE AUTHORITY THIS NON-POTABLE WATER SUPPLY WILL BE USED FOR MAINTENANCE OF THE POTTERY'S LIVE PLANT/SHRUB/LANDSCAPING MATERIALS SOLD IN BUILDING C.
2. THE PROPOSED PRIVATE 4" PVC NON-POTABLEWATERLINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIOIN OF THE INTERNATIONAL PLUMBING CODE.
3. WHEN JCSA NEEDS TO REPAIR THE SEWER SYSTEM WHERE THE 4" NON-POTABLE WATERLINE CROSSES OVER THE SEWER, JCSA WILL REQUIRE THE 4" NON-POTABLE WATERLINE TO BE SHUT OFF DURING THE REPAIR (SINCE THERE IS LESS THAN 10' FROM THE WATERLINE TO THE MANHOLE AND THE LOCATION OF THE BEND IN THE WATERLINE IS ON TOP OF THE SEWER MAIN.

EXISTING WAREHOUSE

EXISTING GREENHOUSE

EXISTING PRIVATE WELL HOUSE

1-4"X4" CUT IN SLEEVE & VALVE (CONTRACTOR TO FIELD LOCATE EXISTING 4" WATERLINE PRIOR TO CONNECTION)

APPROXIMATE LOCATION OF EXISTING 4" PRIVATE WATERLINE (FROM PRESSURE TANK)

EXISTING BOLLARDS (TYP)

APPROXIMATE LOCATION OF EXISTING 8" PRIVATE WATERLINE

1-4" 90° BEND

4" WL (PRIVATE)

463± LF 4" PVC NON-POTABLE WATERLINE (PRIVATE) (CONTRACTOR TO VERIFY LOCATION OF EXISTING 8" MAIN AND MAINTAIN MINUMUM 10' SEPARATION)

EXISTING 1-8" PLUG 1-8" TEE 2-8" G.V. & V.B. 1-FIRE HYD. ASSEMBLY

1-8" BLIND FLANGE (CONTRACTOR TO CAP EXISTING LINE 2'± FROM EXISTING VALVE AND TO PROVIDE JOINT RESTRAINTS ON EXISTING FITTINGS IF NOT CURRENTLY INSTALLED)

REMOVE APPROXIMATELY 8± LF OF EXISTING 8" WATERLINE

CONNECT PROPOSED 4" WATERLINE TO EXISTING 8" WATERLINE VIA: 1-4" 90° BEND 1-8"X4" REDUCER (CONTRACTOR TO FIELD LOCATE EXISTING 8" WATERLINE PRIOR TO CONNECTION)

RESTORE PAVED DRIVE TO EQUIVALENT OR BETTER CONDITION THAN EXISTED PRIOR TO LAYING WATER LINE

EXISTING BUILDING 21

GRAPHIC SCALE

30' 0' 30' 60'

SCALE: 1" = 30'

APPROXIMATE LOCATION OF EXISTING 8" PRIVATE WATERLINE

APPROXIMATE LOCATION OF EXISTING STEEL CASING PIPE BENEATH CSX RIGHT OF WAY

CSX RAILROAD

CONNECT PROPOSED 4" WATERLINE TO EXISTING 8" WATERLINE VIA: 1-4" 45° BEND 1-8"X4" REDUCER (CONTRACTOR TO FIELD LOCATE EXISTING 8" WATERLINE PRIOR TO CONNECTION)

2-4" 22.5° BENDS

477± LF OF 4" PVC NON-POTABLE WATERLINE (PRIVATE)

1-4" 90° BEND

REMOVE APPROXIMATELY 72± LF OF EXISTING 8" WATERLINE 5' MINIMUM SEPARATION FROM STORM SEWER

4" WL (PRIVATE)

NON-POTABLE WATER SUPPLY SHALL BE TOTALLY SEPARATE FROM THE DOMESTIC WATER SERVICE

BUILDING C 20,793 SF RETAIL (1-STORY)

CONTRACTOR TO COORDINATE BUILDING CONNECTION WITH BUILDING C PLUMBING DESIGN

BANK 3,500 SF

EX. 15' WIDE C&P TELEPHONE EASEMENT DB 298, PG 47

12"WL

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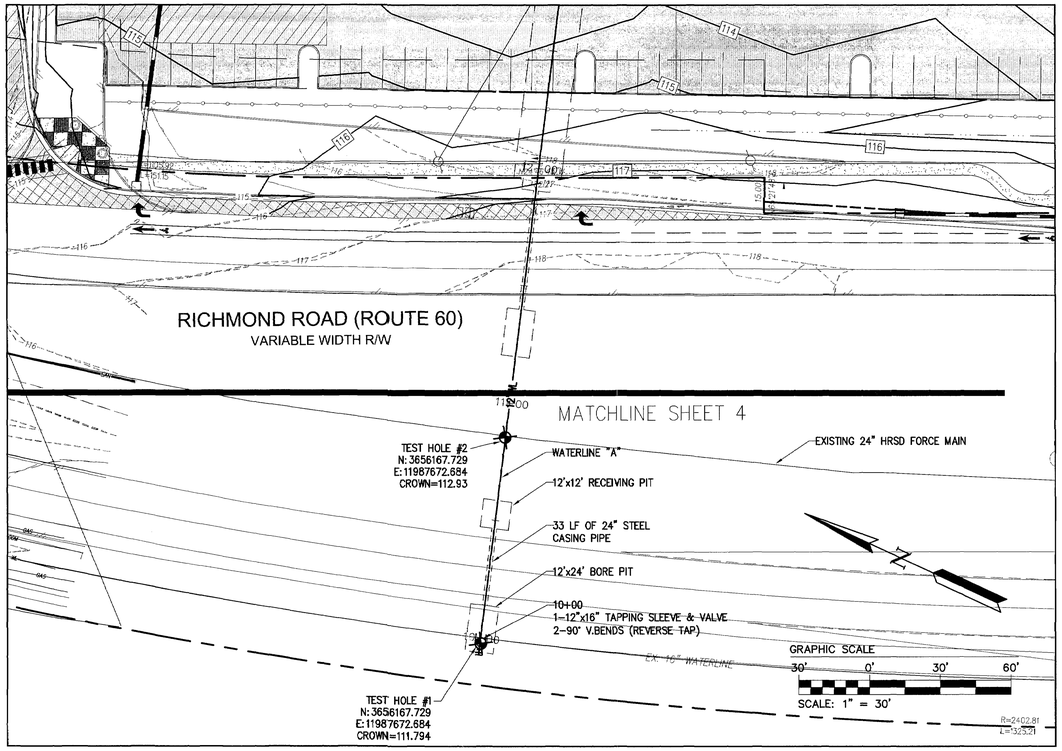
Stonehouse District — James City County — Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title: Private Waterline Plan

Sheet Number 7A



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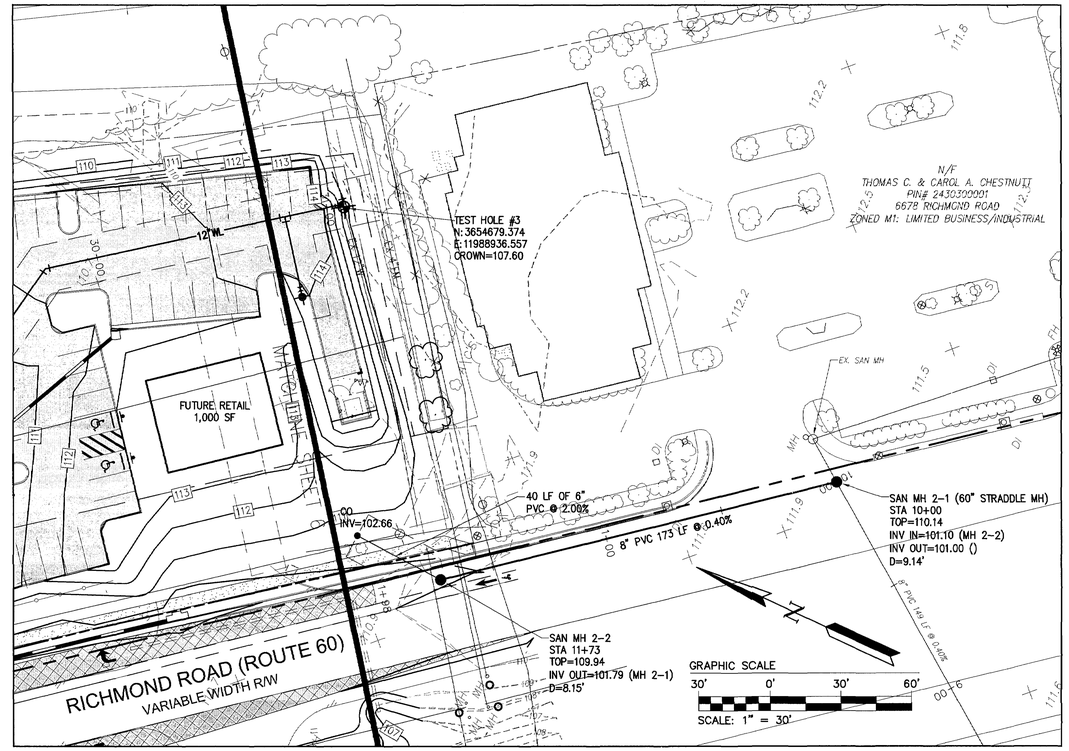

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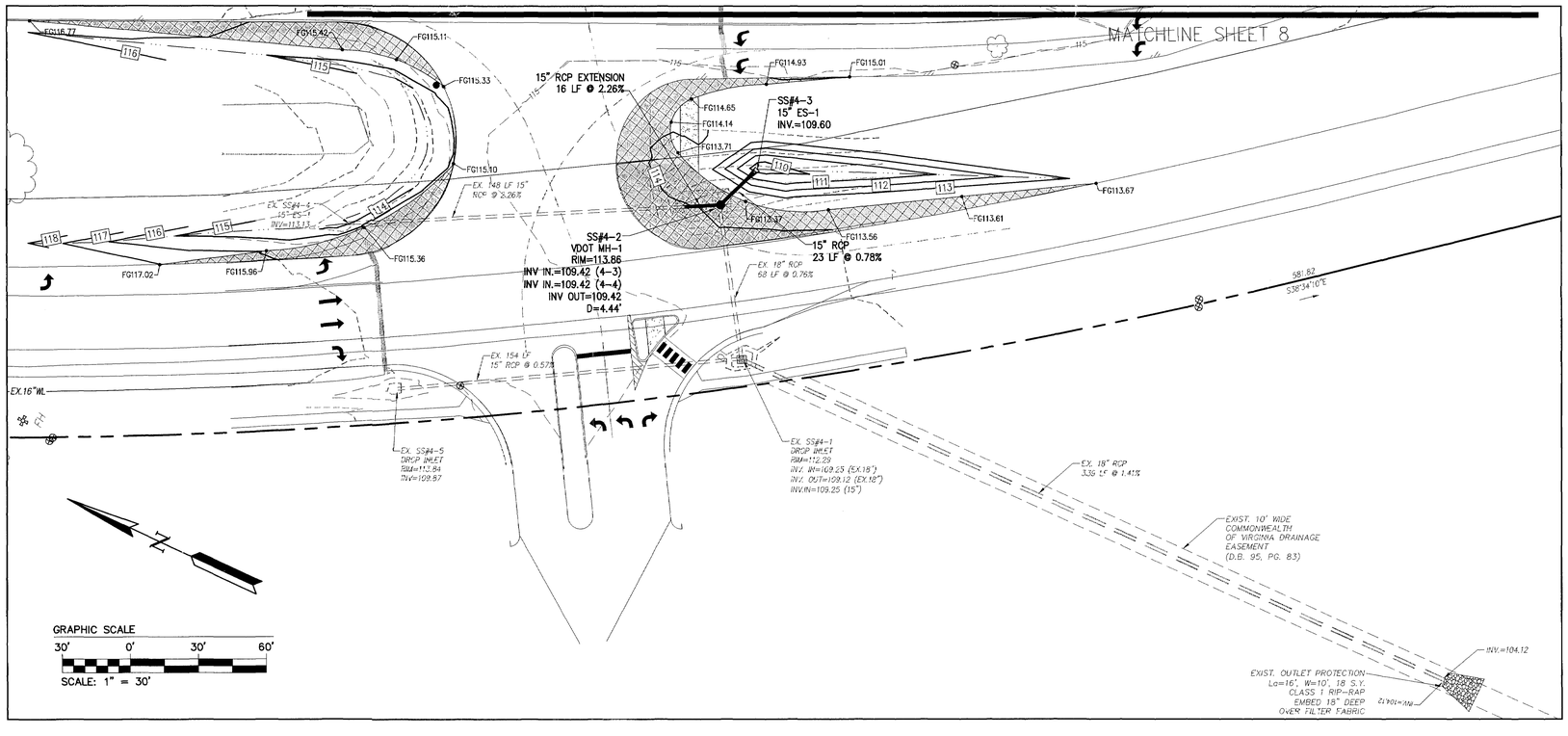

INSET SHEET# 8, SCALE 1"=30'

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1	10/28/10	Revised for Staff Comments	MJR

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Sheet Title:
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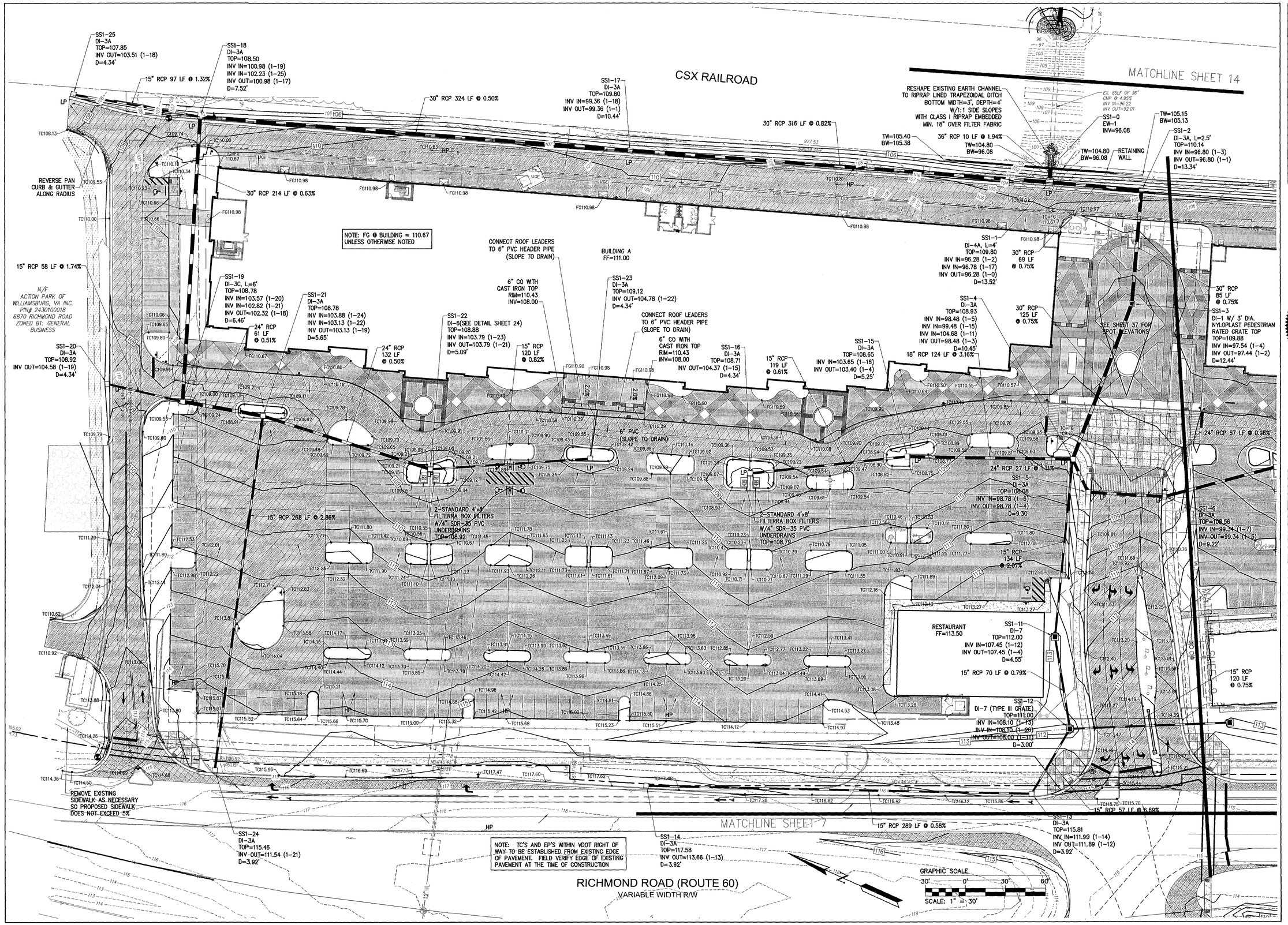
7



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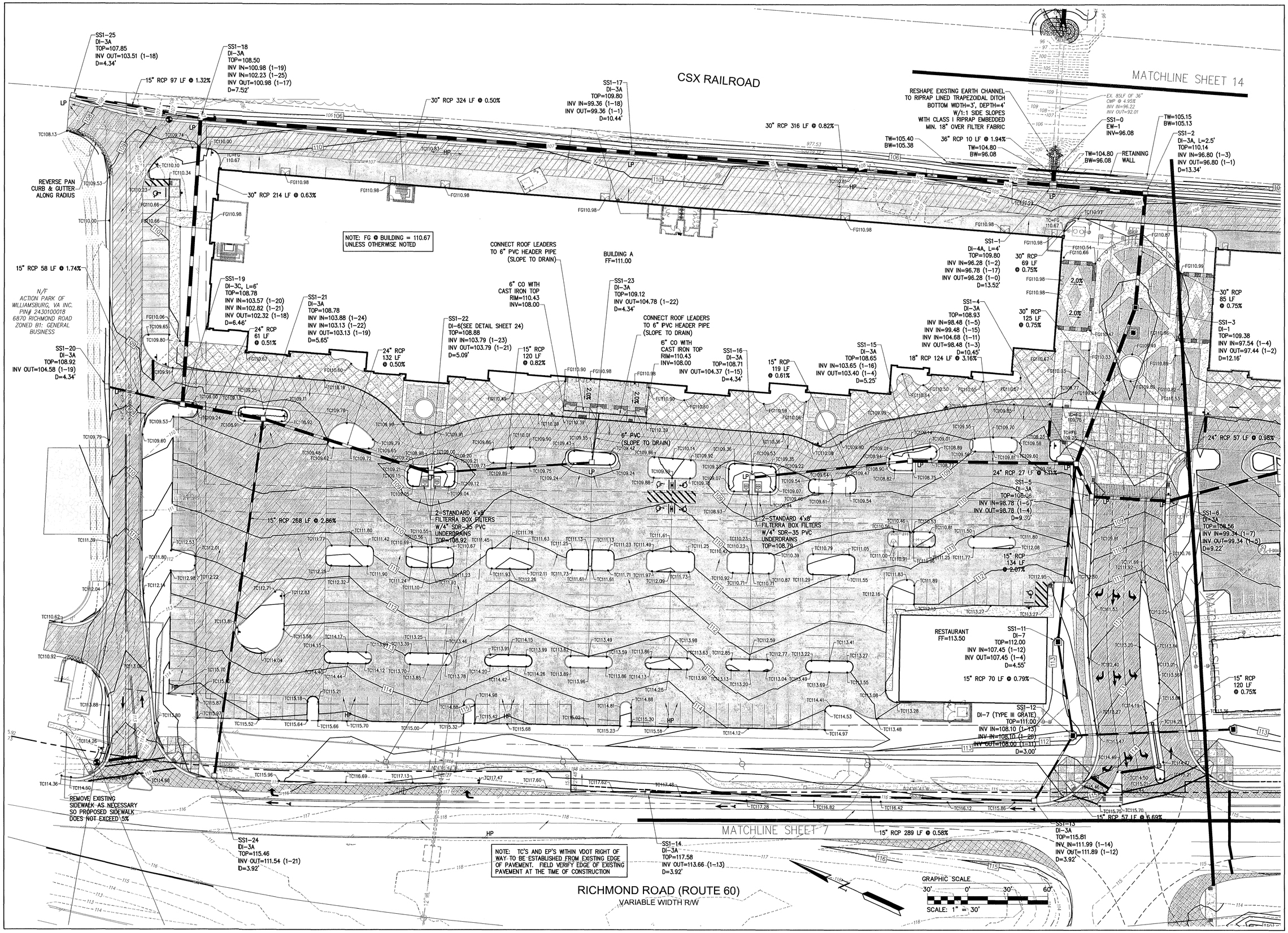
Sheet Title:

Grading Plan

Sheet Number

8



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Scale: 1"=30'
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Sheet Title:
Grading Plan

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1	10/28/10	Revised for Staff Comments	MJR

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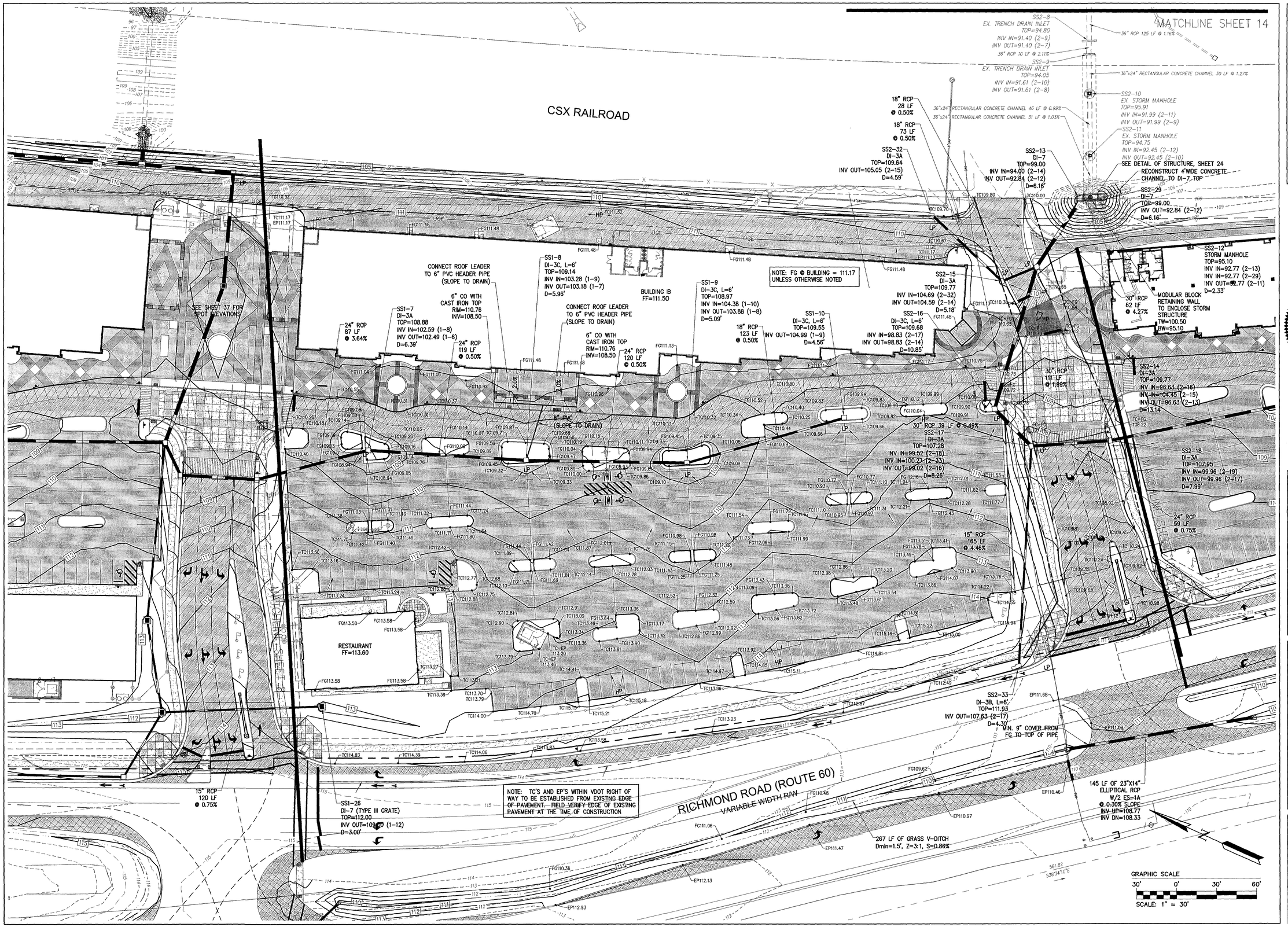

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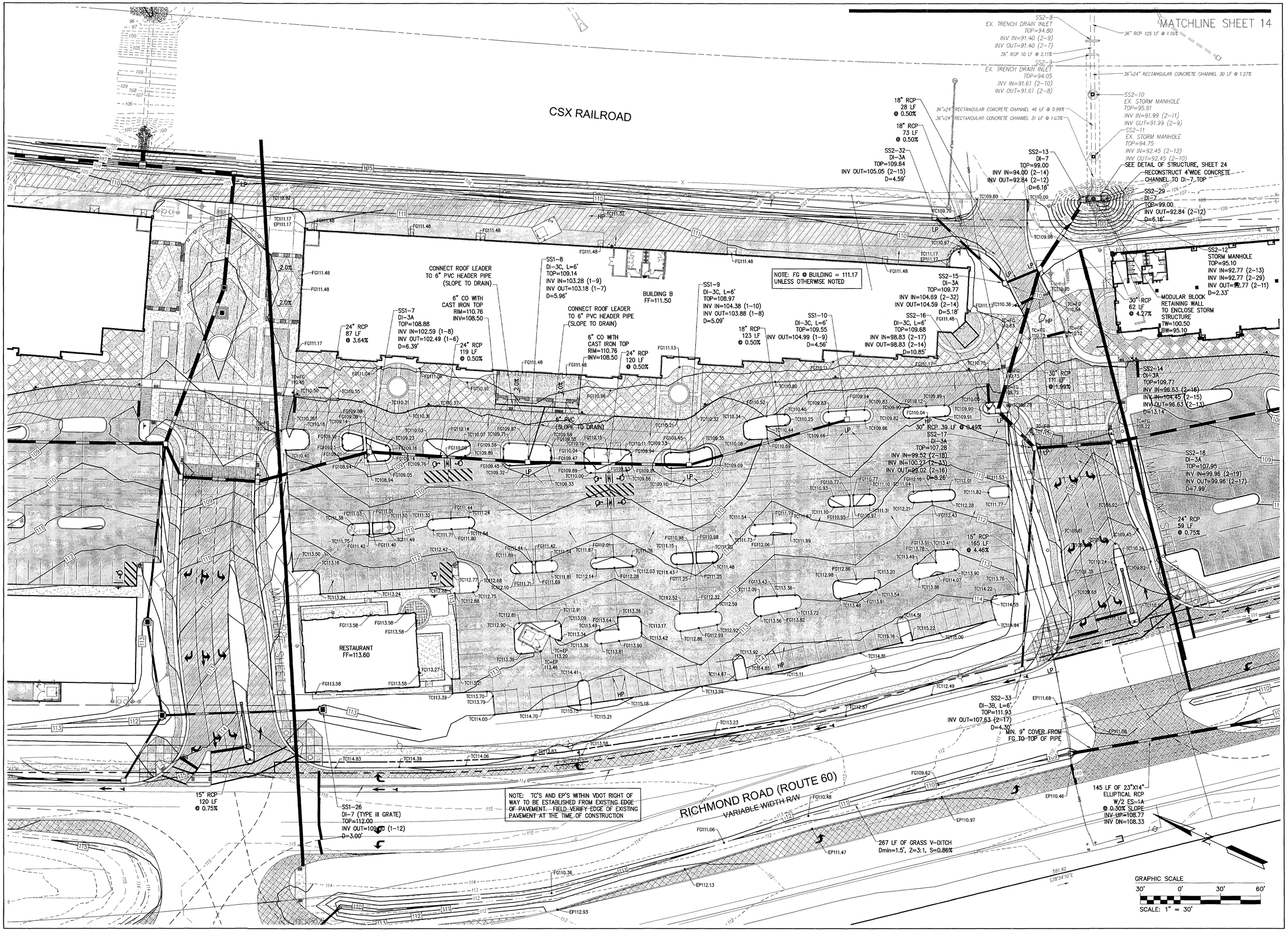
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title: Grading Plan	

Sheet Number
9



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5	4/13/11	Revised for VDOT & JCSA Comments	MJR
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1	10/22/10	Revised for Staff Comments	MJR

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Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Grading Plan

Sheet Number
9

MATCHLINE SHEET 14

CSX RAILROAD

27 LF 6" TRENCH DRAIN
(ZURN 2886 OR EQUIVALENT)
TOP=110.55
INV UP=110.26
INV DN=110.11

27 LF 6" TRENCH DRAIN
(ZURN 2886 OR EQUIVALENT)
TOP=110.55
INV UP=110.26
INV DN=109.87

SS2-21
DI-3A
TOP=112.43
INV OUT=108.51 (2-20)
D=3.92'

15" RCP
75 LF
@ 2.76%

SS2-20
DI-5
TOP=109.43
INV IN=106.43 (2-21)
INV OUT=106.43 (2-19)
D=3.00'

6" HP PIPE
32 LF
@ 0.75%

BUILDING C
FF=111.00

SS2-19
DI-3C, L=6'
TOP=108.28
INV IN=104.11 (2-20)
INV OUT=104.11 (2-18)
D=4.17'

SS2-18
DI-3A
TOP=108.02
INV IN=102.36 (2-19)
INV IN=102.36 (2-35)
INV OUT=101.86 (2-17)
D=6.16'

SS2-17
DI-3A
TOP=108.50
INV IN=101.30 (2-18)
INV OUT=101.30 (2-16)
D=7.20'

24" RCP
139 LF
@ 0.99%

SS2-16
DI-3A
TOP=107.98
INV IN=99.92 (2-17)
INV OUT=99.92 (2-15)
D=8.06'

24" RCP 148 LF @ 1.00%

6" PVC
TO DRAIN

6" CAST IRON
CLEANOUT
TOP=109.0±

6" CLEANOUT
TOP=108.6±

15" RCP
144 LF
@ 1.61%

2-STANDARD 6'x4'
FILTERRA BOX FILTERS
W/4" SDR-35 PVC
UNDERDRAIN
TOP=108.5

18" RCP
63 LF
@ 2.80%

24" RCP
56 LF
@ 1.00%

18" RCP
91 LF
@ 1.75%

15" RCP
129 LF
@ 1.61%

SS2-37
DI-3A
TOP=109.96
INV OUT=106.04 (2-35)
D=3.92'

15" RCP
234 LF
@ 0.50%

SS2-36
DI-3C, L=8'
TOP=109.05
INV OUT=105.13 (2-35)
D=3.92'

SS2-35
DI-3A, L=2.5'
TOP=109.84
INV IN=103.96 (2-36)
INV IN=103.96 (2-37)
INV OUT=103.96 (2-18)
D=5.88'

117 LF OF 23"x14"
ELLIPTICAL RCP
W/2 ES-1A'S
@ 0.26% SLOPE
INV UP=108.00
INV DN=107.69

TO BE REMOVED

TO BE ABANDONED IN PLACE

FUTURE RETAIL
FF=113.75

N/F
THOMAS C. & CAROL A. CHESTNUTT
PIN# 2430300001
6678 RICHMOND ROAD
ZONED M1: LIMITED BUSINESS/INDUSTRIAL

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

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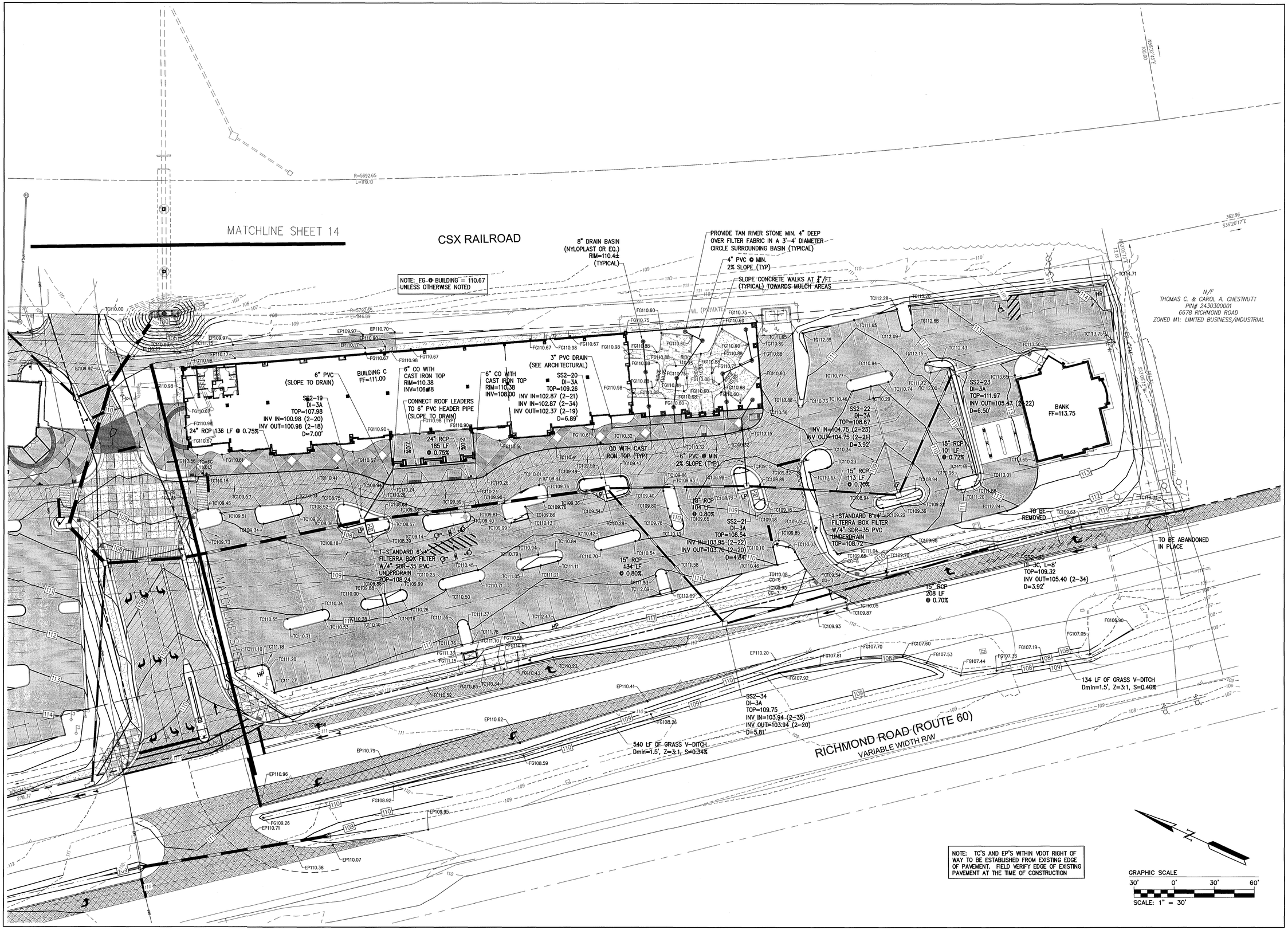
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Grading Plan

Sheet Number
10



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Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Grading Plan
Sheet Number	10

MATCHLINE SHEET 14

CSX RAILROAD

NOTE: FG @ BUILDING = 110.67 UNLESS OTHERWISE NOTED

27 LF 6" TRENCH DRAIN (ZURN 2886 OR EQUIVALENT) TOP=110.55 INV UP=110.26 INV DN=110.11

27 LF 6" TRENCH DRAIN (ZURN 2886 OR EQUIVALENT) TOP=110.55 INV UP=110.26 INV DN=109.87

6" HP PIPE 32 LF @ 0.75%

WARP CONCRETE TO DRAIN AWAY FROM BUILDING C DOORS

BUILDING C FF=111.00

6" PVC (SLOPE TO DRAIN)

SS2-19 DI-3A TOP=107.98 INV IN=100.98 (2-20) INV OUT=100.98 (2-18) D=7.00'

24" RCP 136 LF @ 0.75%

6" CO WITH CAST IRON TOP RIM=110.38 INV=106.78

CONNECT ROOF LEADERS TO 6" PVC HEADER PIPE (SLOPE TO DRAIN)

6" CO WITH CAST IRON TOP RIM=110.38 INV=108.00

SS2-20 DI-3A TOP=109.26 INV IN=102.87 (2-21) INV IN=102.87 (2-34) INV OUT=102.37 (2-19) D=6.89'

24" RCP 185 LF @ 0.75%

6" PVC TO DRAIN

SS2-22 DI-3A TOP=108.67 INV IN=104.75 (2-23) INV OUT=104.75 (2-21) D=3.92'

SS2-23 DI-3A TOP=111.97 INV OUT=105.47 (2-22) D=6.50'

BANK FF=113.75

N/F THOMAS C. & CAROL A. CHESTNUTT PIN# 2430300001 667B RICHMOND ROAD ZONED M1: LIMITED BUSINESS/INDUSTRIAL

15" RCP 101 LF @ 0.72%

15" RCP 113 LF @ 0.70%

18" RCP 104 LF @ 0.80%

SS2-21 DI-3A TOP=108.54 INV IN=103.95 (2-22) INV OUT=103.70 (2-20) D=4.84'

1-STANDARD 6'x4' FILTERRA BOX FILTER W/4" SDR-35 PVC UNDERDRAIN TOP=108.77

1-STANDARD 6'x4' FILTERRA BOX FILTER W/4" SDR-35 PVC UNDERDRAIN TOP=108.24

15" RCP 134 LF @ 0.80%

15" RCP 208 LF @ 0.70%

TO BE REMOVED

TO BE ABANDONED IN PLACE

SS2-35 DI-3C, L=8' TOP=109.32 INV OUT=105.40 (2-34) D=3.92'

134 LF OF GRASS V-DITCH Dmin=1.5', Z=3:1, S=0.40%

SS2-34 DI-3A TOP=109.75 INV IN=103.94 (2-35) INV OUT=103.94 (2-20) D=5.81'

540 LF OF GRASS V-DITCH Dmin=1.5', Z=3:1, S=0.34%

RICHMOND ROAD (ROUTE 60) VARIABLE WIDTH R/W

MATCHLINE SHEET 15

NOTE: TC'S AND EP'S WITHIN VDOT RIGHT OF WAY TO BE ESTABLISHED FROM EXISTING EDGE OF PAVEMENT. FIELD VERIFY EDGE OF EXISTING PAVEMENT AT THE TIME OF CONSTRUCTION

GRAPHIC SCALE

30' 0' 30' 60'

SCALE: 1" = 30'

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1	10/20/10	Revised for Staff Comments	MJR

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Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title: Grading Plan

Sheet Number 10

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3	12/15/10	Revised for Staff Comments	MJR
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1	10/20/10	Revised for Staff Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Drainage Plan

Sheet Number
11

Rev.	Date	Description	Revised By
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9	11/9/11	Revised Plans per Owner Request	MJR
8	10/27/11	Hazelnoe Detail Revision Per Client	GRR
7	9/9/11	Revised NW Intersection Design to VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Drainage Plan

Sheet Number
11

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1	10/26/10	Revised for Staff Comments	MJR

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Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Drainage Plan
Sheet Number	11

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Rev.	Date	Description	Revised By
3	12/16/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Project Number:	9510-04
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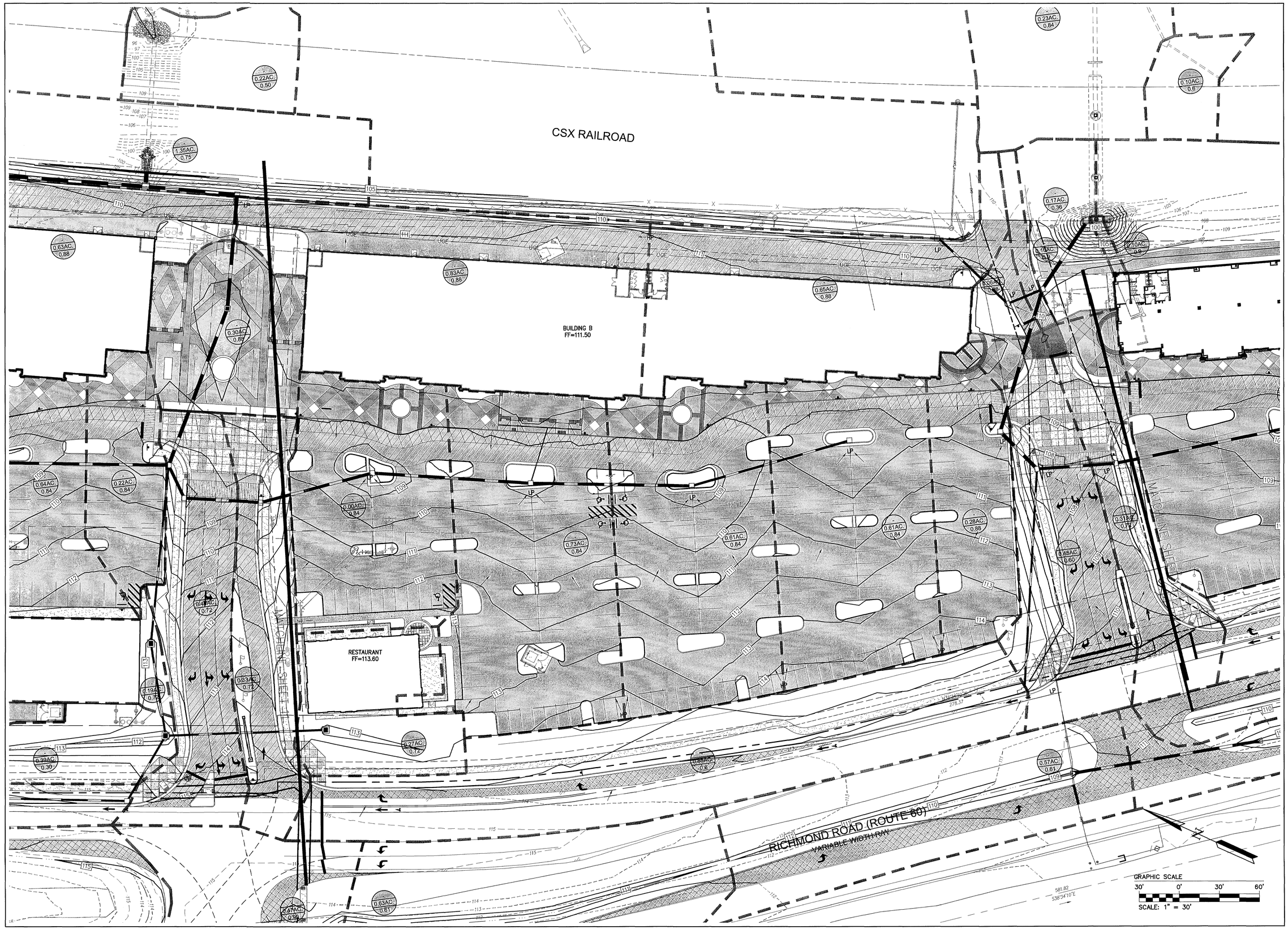
Sheet Title:
Drainage Plan

Sheet Number
12



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Project Contacts: RAC/MJR/SVC
Project Number: 9510-04
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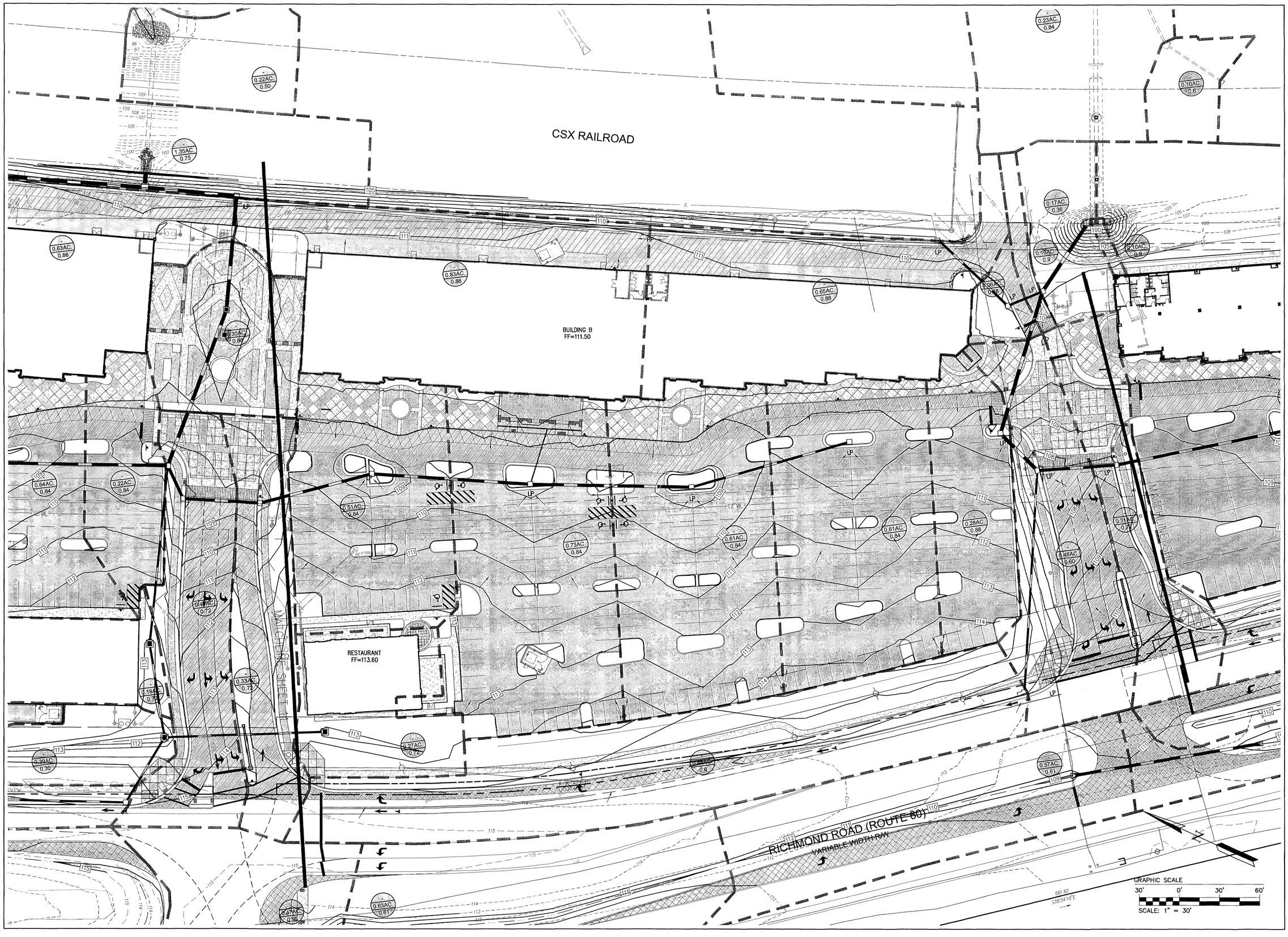
Sheet Title: Drainage Plan

Sheet Number
12



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Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Drainage Plan

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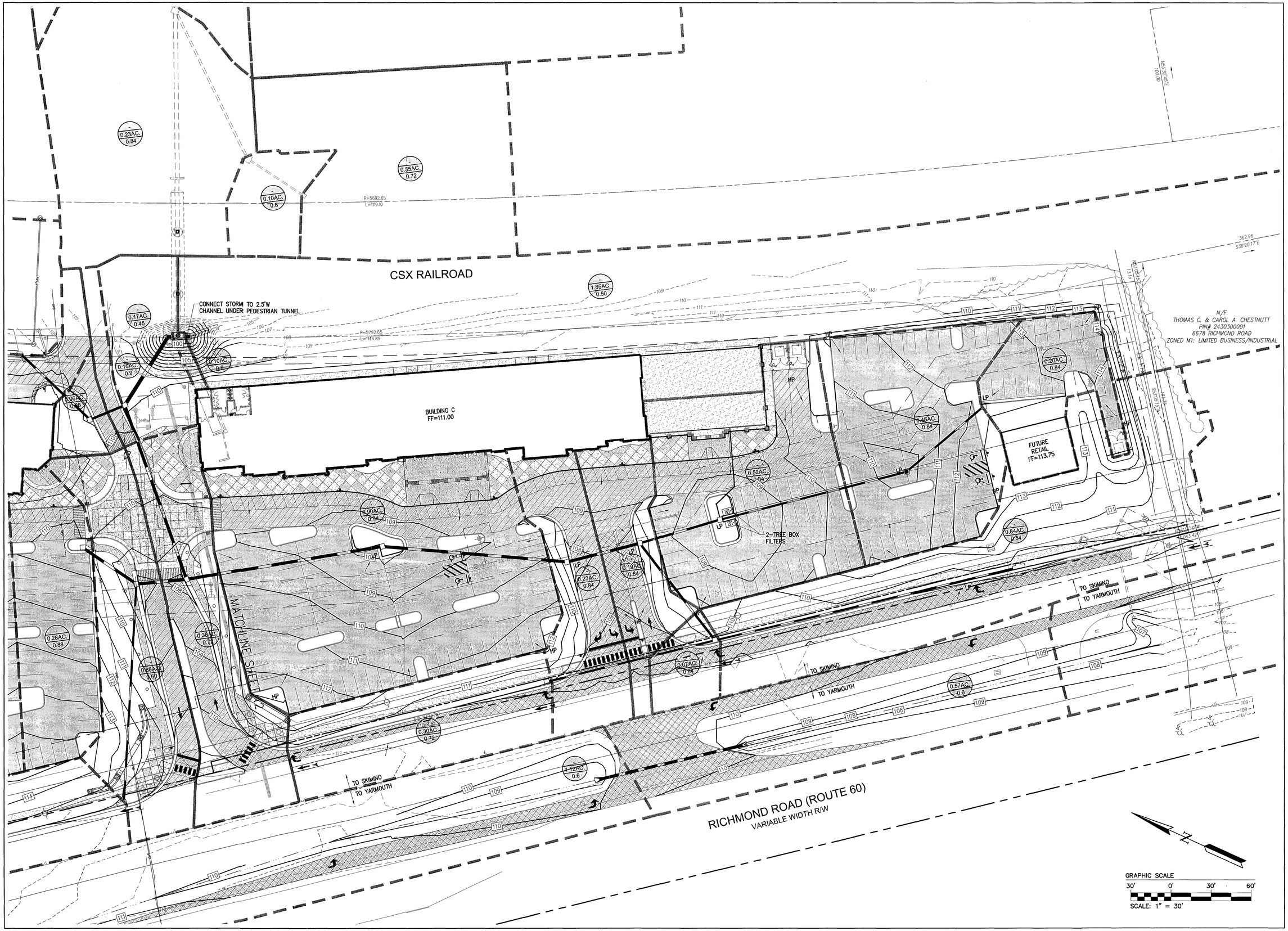
12



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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=50'	Date: 9/3/2010

Sheet Title:
Offsite Grading & Drainage Plan

Sheet Number
14

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
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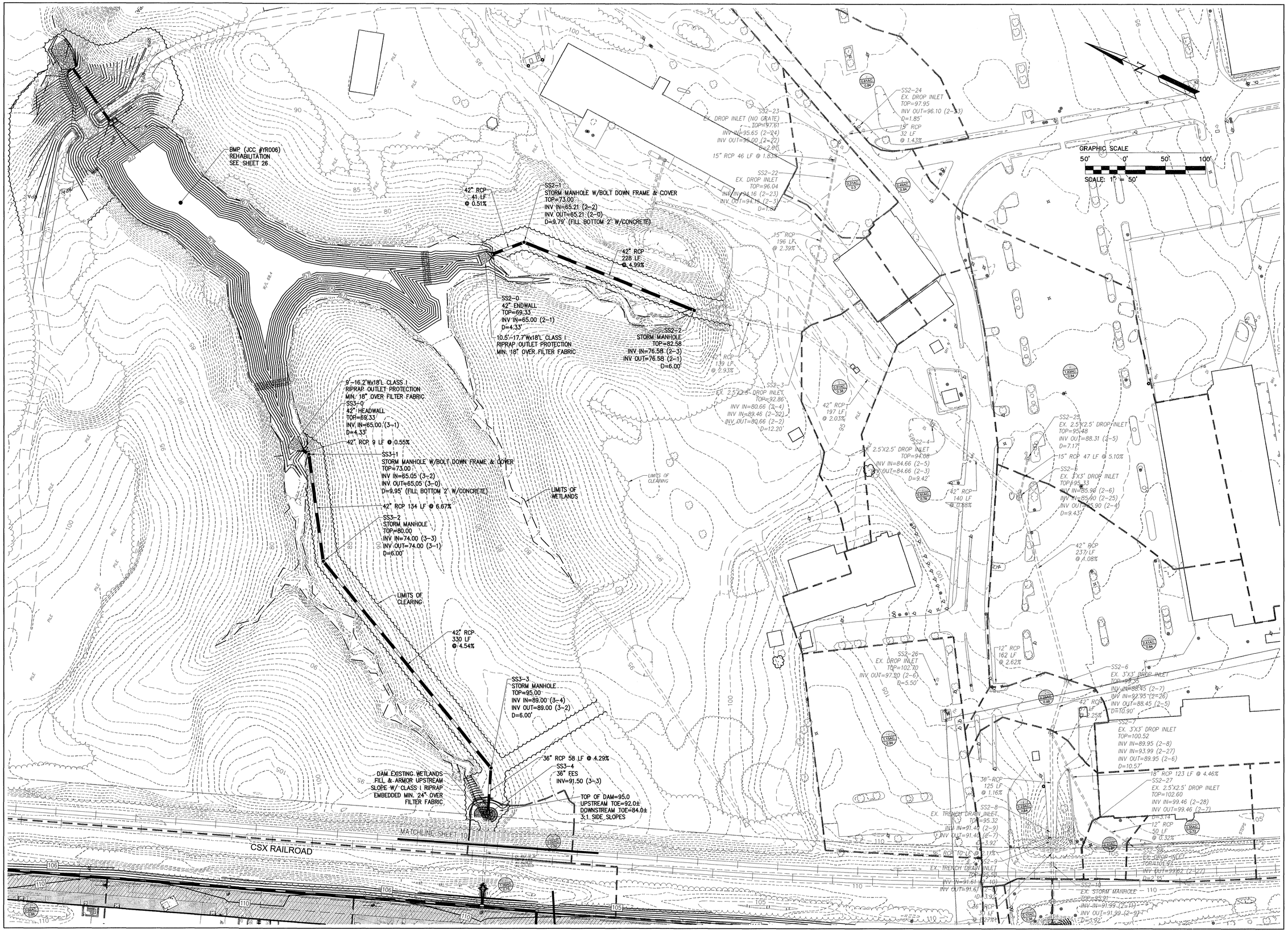
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=50'	Date: 8/3/2010

Sheet Title:
Offsite Grading & Drainage Plan

Sheet Number
14



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4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/19/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=50'	Date: 9/3/2010

Sheet Title:
Offsite Grading & Drainage Plan

Sheet Number
14

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NOTE:
SEE SHEET 18 FOR TEMPORARY SEDIMENT TRAP SCHEDULE

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

NOTES:
1. DEWATERING STRUCTURES MEETING THE REQUIREMENTS OF VESCH STD. 3.26 ARE REQUIRED FOR THE DEWATERING ACTIVITIES INCLUDED WITH THE INSTALLATION OF UTILITIES (JACK AND BORE), SEDIMENT TRAP CLOSE OUT, BMP (PER GEOTECHNICAL REPORT), AND OTHER CONSTRUCTION PRACTICES THROUGHOUT THE SITE.
2. ALL CONSTRUCTION TRAFFIC SHALL USE THE SOUTHERN OR NORTHERN ENTRANCES ONLY.
3. DUE TO THE PROXIMITY OF WORK ALONG ROUTE 60, DUST CONTROL IN ACCORDANCE WITH MINIMUM STANDARD 3.39 MAY BE WARRANTED TO ENSURE TRAFFIC SAFETY.

EROSION AND SEDIMENTATION CONTROL LEGEND

- SAF — SAFETY FENCE (SPEC. 3.01)
- DD — DIVERSION DIKE (SPEC. 3.09)
- SF — SILT FENCE (SPEC. 3.05)
- SSF — SILT FENCE (SPEC. 3.05)
- CD — ROCK CHECK DAM (SPEC. 3.20)
- TP — TREE PROTECTION (SPEC. 3.38)
- DC — DUST CONTROL (SPEC. 3.39)

EROSION AND SEDIMENTATION CONTROL LEGEND

- IP — INLET PROTECTION (SPEC. 3.07)
- CIP — CULVERT INLET PROTECTION (SPEC. 3.08)
- CE — CONSTRUCTION ENTRANCE (SPEC. 3.02)
- OP — OUTLET PROTECTION (SPEC. 3.18)
- ST — TEMPORARY SEDIMENT TRAP (SPEC. 3.13)
- DS — DEWATERING STRUCTURE (SPEC. 3.26)

NOTE:
SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.).

PHASE 1 EROSION CONTROL SEQUENCE OF CONSTRUCTION

1. INSTALL SAFETY FENCE AND GATES TO BARRICADE ENTRANCES AND INSTALL SIGNAGE AS ALLOWED BY JAMES CITY COUNTY PLANNING TO DIRECT TRAFFIC THROUGH CONSTRUCTION SITE.
2. INSTALL PERIMETER SILT FENCE, SUPER SILT FENCE, TREE PROTECTION AND CONSTRUCTION ENTRANCE. *VERIFY THAT MEASURES CONSTRUCTED DURING DEMOLITION PHASE ARE CLEANED OF SEDIMENT AND DEBRIS AND IN GOOD WORKING ORDER.

   *THIS NARRATIVE ASSUMES THAT THE EXISTING SITE HAS PREVIOUSLY BEEN DEMOLISHED IN ACCORDANCE WITH THE DEMOLITION PLAN PREPARED BY AES DATED 9/20/10 AND THE SITE IS READY TO COMMENCE WITH LAND DISTURBING ACTIVITIES.
3. COMPLETE POND RESTORATION AS DEPICTED ON SHEETS 26 & 27. PROPOSED BMP TO FUNCTION AS SEDIMENT BASIN DURING LAND DISTURBING ACTIVITIES. ONCE SITE HAS BEEN STABILIZED THE SEDIMENT BASIN IS TO BE CONVERTED TO BMP AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO JAMES CITY COUNTY RELEASING EROSION & SEDIMENT CONTROL BOND.
4. CONSTRUCT DIVERSION DIKE ALONG REAR PROPERTY LINE DIRECTING RUNOFF TO THE SUPER CHECK DAM CONSTRUCTED DURING THE DEMOLITION PHASE OF THIS PROJECT.
5. CONSTRUCT THE TRUNK STORM SEWER AS DEPICTED ON SHEETS 8, 9, 10, AND 14. INSTALL INLET PROTECTION AROUND ALL CONSTRUCTED DROP INLETS.
6. CONSTRUCT SEDIMENT TRAPS AS DEPICTED IN PARKING AREAS. TRAPS ARE TO DRAIN TO THE ADJACENT STORM STRUCTURES.
7. CONSTRUCT DIVERSIONS DIRECTING STORMWATER RUNOFF TOWARD SEDIMENT TRAPPING DEVICES.
8. WITH RUNOFF DIRECTED TOWARDS TRAPS, BEGIN SITE CONSTRUCTION. GRADE SITE TO PROPOSED SUBGRADE ELEVATIONS.
9. INSTALL PROPOSED SANITARY SEWER LINES AND WATERLINES. COMPLETE INSTALLATION OF STORM SEWER SYSTEM.
10. INSTALL INLET PROTECTION ON ALL STORM SEWER DROP INLETS. BLOCK ENTRANCES TO FILTERRA BOXES TO PREVENT THEM FROM COLLECTING SEDIMENT LADEN RUNOFF.
11. BUILD CURB AND GUTTER AS DEPICTED ON THE SITE & UTILITY PLAN SHEETS. CONSTRUCT PAVEMENT TO PROPOSED FINISHED GRADES.

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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12/15/10
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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
Phase 1 Erosion & Sediment Control Plan

Sheet Number
15

NOTE:
SEE SHEET 18 FOR TEMPORARY SEDIMENT TRAP SCHEDULE

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

NOTES:
1. DEWATERING STRUCTURES MEETING THE REQUIREMENTS OF VESCH STD. 3.26 ARE REQUIRED FOR THE DEWATERING ACTIVITIES INCLUDED WITH THE INSTALLATION OF UTILITIES (JACK AND BORE), SEDIMENT TRAP CLOSE OUT, BMP (PER GEOTECHNICAL REPORT), AND OTHER CONSTRUCTION PRACTICES THROUGHOUT THE SITE.
2. ALL CONSTRUCTION TRAFFIC SHALL USE THE SOUTHERN OR NORTHERN ENTRANCES ONLY.
3. DUE TO THE PROXIMITY OF WORK ALONG ROUTE 60, DUST CONTROL IN ACCORDANCE WITH MINIMUM STANDARD 3.39 MAY BE WARRANTED TO ENSURE TRAFFIC SAFETY.

EROSION AND SEDIMENTATION CONTROL LEGEND

SAF	SAFETY FENCE (SPEC. 3.01)
DD	DIVERSION DIKE (SPEC. 3.09)
SF	SILT FENCE (SPEC. 3.05)
SSF	SILT FENCE (SPEC. 3.05)
CD	ROCK CHECK DAM (SPEC. 3.20)
TP	TREE PROTECTION (SPEC. 3.38)
DC	DUST CONTROL (SPEC. 3.39)

EROSION AND SEDIMENTATION CONTROL LEGEND

IP	INLET PROTECTION (SPEC. 3.07)
CIP	CULVERT INLET PROTECTION (SPEC. 3.08)
CE	CONSTRUCTION ENTRANCE (SPEC. 3.02)
OP	OUTLET PROTECTION (SPEC. 3.18)
ST	TEMPORARY SEDIMENT TRAP (SPEC. 3.13)
DS	DEWATERING STRUCTURE (SPEC. 3.26)

NOTE:
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PHASE 1 EROSION CONTROL SEQUENCE OF CONSTRUCTION

1. INSTALL SAFETY FENCE AND GATES TO BARRICADE ENTRANCES AND INSTALL SIGNAGE AS ALLOWED BY JAMES CITY COUNTY PLANNING TO DIRECT TRAFFIC THROUGH CONSTRUCTION SITE.
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*THIS NARRATIVE ASSUMES THAT THE EXISTING SITE HAS PREVIOUSLY BEEN DEMOLISHED IN ACCORDANCE WITH THE DEMOLITION PLAN PREPARED BY AES DATED 9/20/10 AND THE SITE IS READY TO COMMENCE WITH LAND DISTURBING ACTIVITIES.

3. COMPLETE POND RESTORATION AS DEPICTED ON SHEETS 26 & 27. PROPOSED BMP TO FUNCTION AS SEDIMENT BASIN DURING LAND DISTURBING ACTIVITIES. ONCE SITE HAS BEEN STABILIZED THE SEDIMENT BASIN IS TO BE CONVERTED TO BMP AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO JAMES CITY COUNTY RELEASING EROSION & SEDIMENT CONTROL BOND.
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10. INSTALL INLET PROTECTION ON ALL STORM SEWER DROP INLETS. BLOCK ENTRANCES TO FILTERRA BOXES TO PREVENT THEM FROM COLLECTING SEDIMENT LADEN RUNOFF.
11. BUILD CURB AND GUTTER AS DEPICTED ON THE SITE & UTILITY PLAN SHEETS. CONSTRUCT PAVEMENT TO PROPOSED FINISHED GRADES.

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/8/11	Revised Plans per Owner Request	GSR
8	10/07/11	Hardscape Detail Revision Per Client	GSR
7	9/9/11	Revised RIN Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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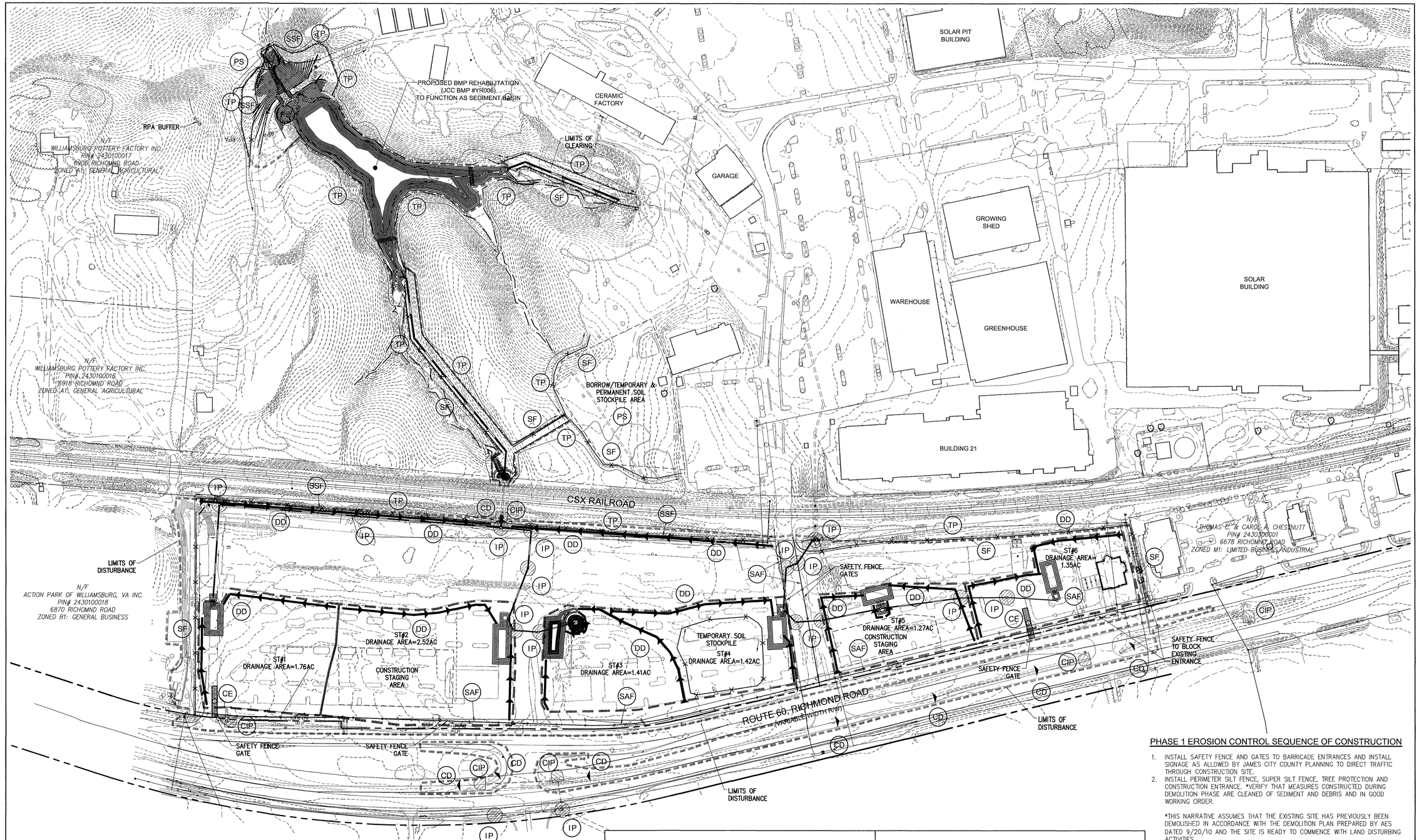
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
Phase 1 Erosion & Sediment Control Plan

Sheet Number
15



NOTES:
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EROSION AND SEDIMENTATION CONTROL LEGEND

SAF	SAFETY FENCE (SPEC. 3.01)
DD	DIVERSION DIKE (SPEC. 3.09)
SF	SILT FENCE (SPEC. 3.05)
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DC	DUST CONTROL (SPEC. 3.39)

EROSION AND SEDIMENTATION CONTROL LEGEND

IP	INLET PROTECTION (SPEC. 3.07)
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OP	OUTLET PROTECTION (SPEC. 3.18)
ST	TEMPORARY SEDIMENT TRAP (SPEC. 3.13)
DS	DEWATERING STRUCTURE (SPEC. 3.26)

NOTE:
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PHASE 1 EROSION CONTROL SEQUENCE OF CONSTRUCTION

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Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Williamsburg Pottery

Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SV
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
Phase 1 Erosion & Sediment Control Plan

Sheet Number
15

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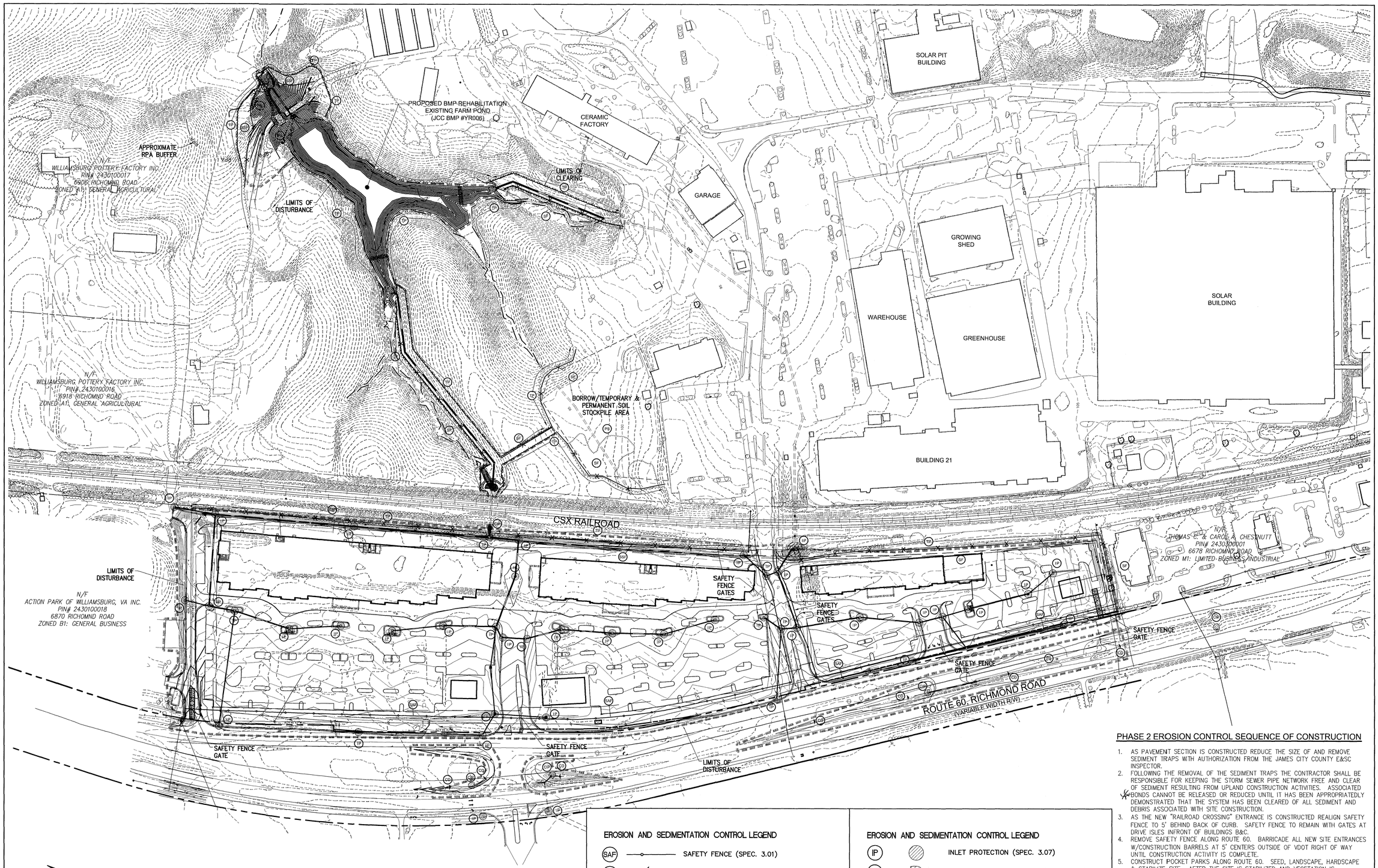

EROSION AND SEDIMENTATION CONTROL LEGEND

SAF	SAFETY FENCE (SPEC. 3.01)
DD	DIVERSION DIKE (SPEC. 3.09)
SF	SILT FENCE (SPEC. 3.05)
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EROSION AND SEDIMENTATION CONTROL LEGEND

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ST	TEMPORARY SEDIMENT TRAP (SPEC. 3.13)
DS	DEWATERING STRUCTURE (SPEC. 3.26)

NOTE:
SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.).

PHASE 2 EROSION CONTROL SEQUENCE OF CONSTRUCTION

1. AS PAVEMENT SECTION IS CONSTRUCTED REDUCE THE SIZE OF AND REMOVE SEDIMENT TRAPS WITH AUTHORIZATION FROM THE JAMES CITY COUNTY E&SC INSPECTOR.
2. FOLLOWING THE REMOVAL OF THE SEDIMENT TRAPS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE STORM SEWER PIPE NETWORK FREE AND CLEAR OF SEDIMENT RESULTING FROM UPLAND CONSTRUCTION ACTIVITIES. ASSOCIATED BONDS CANNOT BE RELEASED OR REDUCED UNTIL IT HAS BEEN APPROPRIATEDLY DEMONSTRATED THAT THE SYSTEM HAS BEEN CLEARED OF ALL SEDIMENT AND DEBRIS ASSOCIATED WITH SITE CONSTRUCTION.
3. AS THE NEW "RAILROAD CROSSING" ENTRANCE IS CONSTRUCTED REALIGN SAFETY FENCE TO 5' BEHIND BACK OF CURB. SAFETY FENCE TO REMAIN WITH GATES AT DRIVE ISLES INFRONT OF BUILDINGS B&C.
4. REMOVE SAFETY FENCE ALONG ROUTE 60. BARRICADE ALL NEW SITE ENTRANCES W/CONSTRUCTION BARRELS AT 5' CENTERS OUTSIDE OF VDOT RIGHT OF WAY UNTIL CONSTRUCTION ACTIVITY IS COMPLETE.
5. CONSTRUCT POCKET PARKS ALONG ROUTE 60. SEED, LANDSCAPE, HARDSCAPE & STABILIZE SITE. AFTER THE SITE IS STABILIZED AND VEGETATION IS ESTABLISHED, AND WITH THE WRITTEN AUTHORIZATION FROM THE JAMES CITY COUNTY EROSION AND SEDIMENT CONTROL INSPECTOR, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AND ANY DEBRIS IS TO BE CLEANED FROM THE SITE.

NOTES:
1. DEWATERING STRUCTURES MEETING THE REQUIREMENTS OF VESCH STD. 3.26 ARE REQUIRED FOR THE DEWATERING ACTIVITIES INCLUDED WITH THE INSTALLATION OF UTILITIES (JACK AND BORE), SEDIMENT TRAP CLOSE OUT, BMP (PER GEOTECHNICAL REPORT), AND OTHER CONSTRUCTION PRACTICES THROUGHOUT THE SITE.
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Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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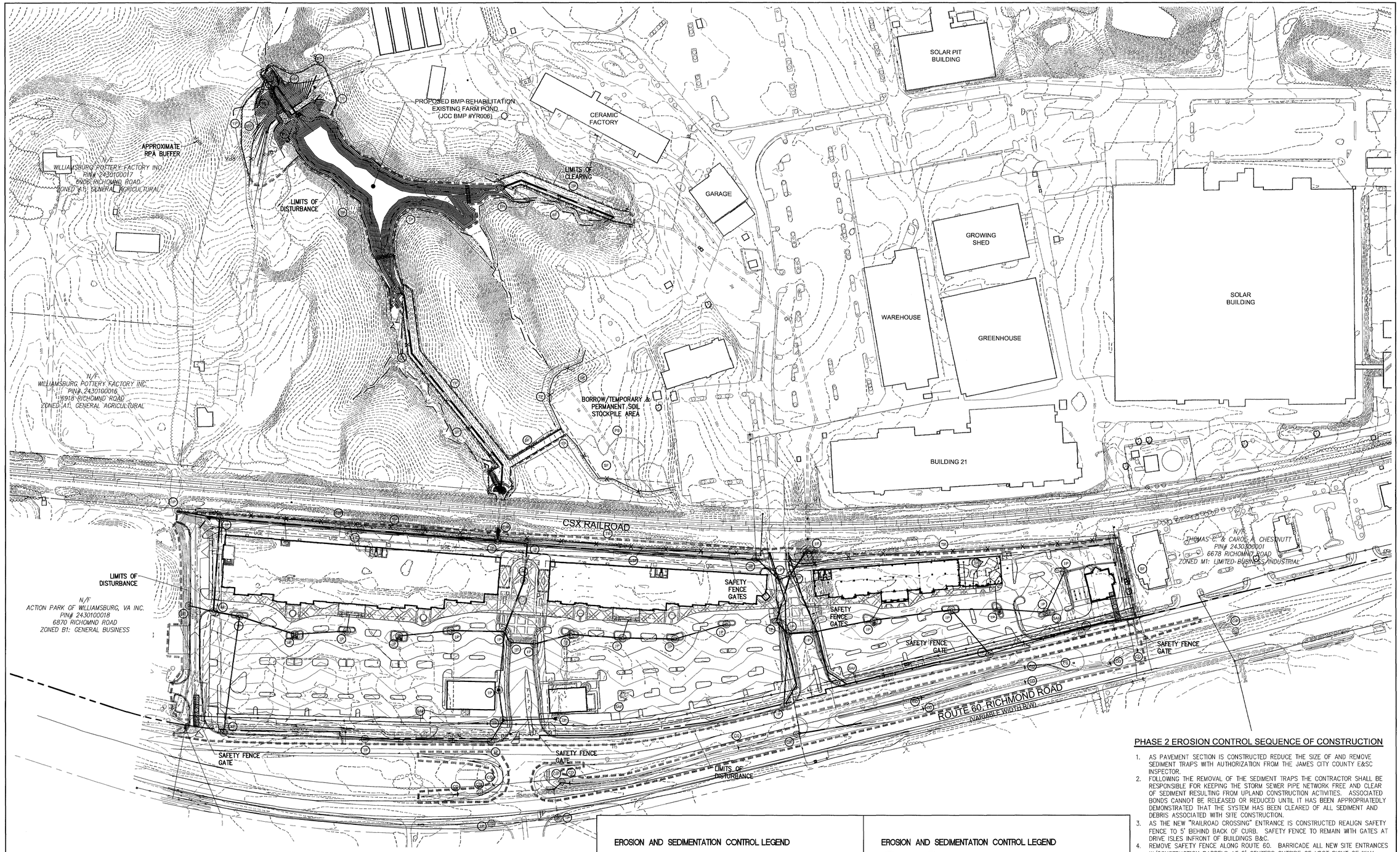
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
Phase 2 Erosion & Sediment Control Plan

Sheet Number
16



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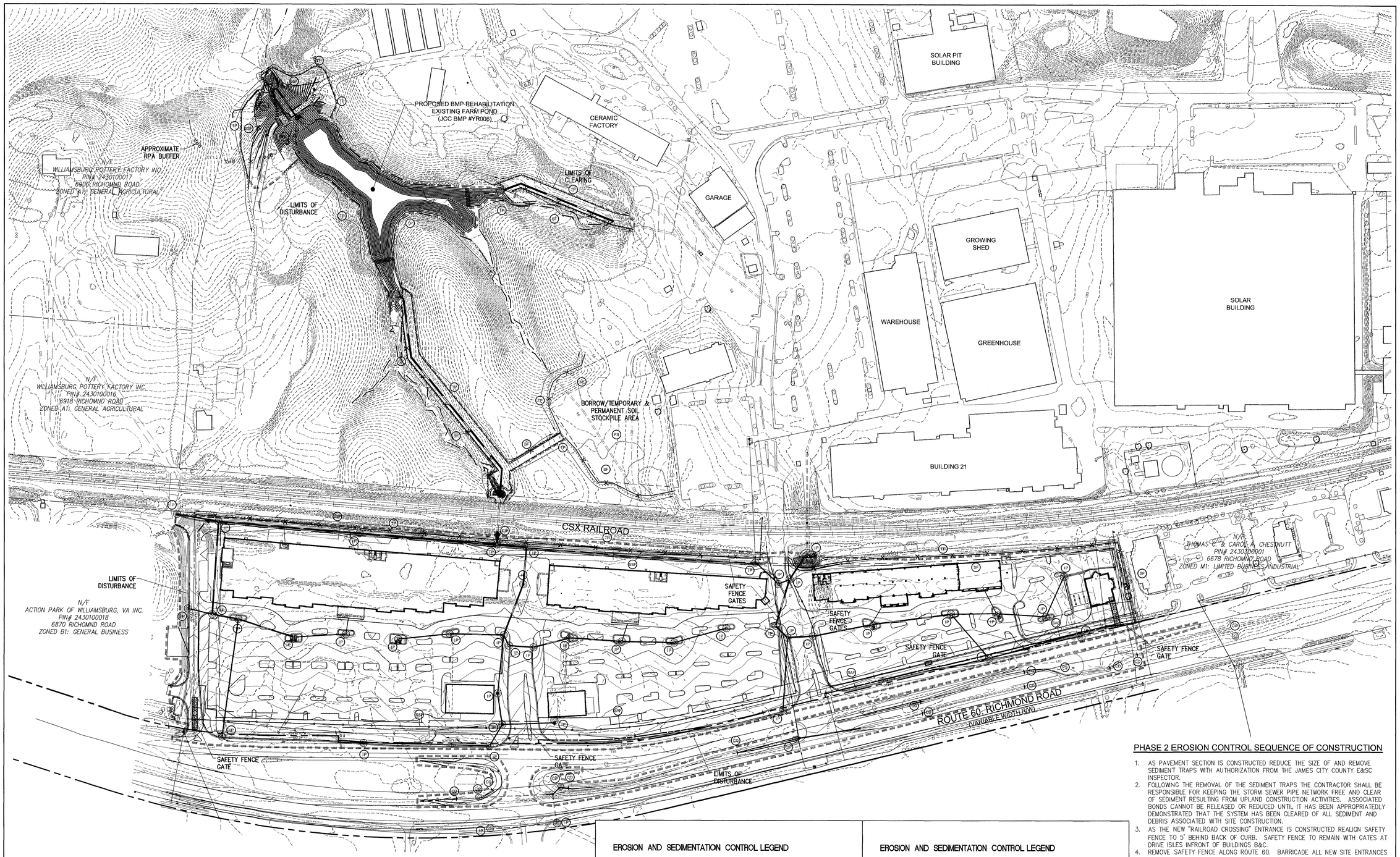
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
Phase 2 Erosion & Sediment Control Plan

Sheet Number
16



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DC	DUST CONTROL (SPEC. 3.39)

EROSION AND SEDIMENTATION CONTROL LEGEND

IP	INLET PROTECTION (SPEC. 3.07)
CIP	CULVERT INLET PROTECTION (SPEC. 3.08)
CE	CONSTRUCTION ENTRANCE (SPEC. 3.02)
OP	OUTLET PROTECTION (SPEC. 3.18)
ST	TEMPORARY SEDIMENT TRAP (SPEC. 3.13)
DS	DEWATERING STRUCTURE (SPEC. 3.26)

NOTE:
SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.).

PHASE 2 EROSION CONTROL SEQUENCE OF CONSTRUCTION

1. AS PAVEMENT SECTION IS CONSTRUCTED REDUCE THE SIZE OF AND REMOVE SEDIMENT TRAPS WITH AUTHORIZATION FROM THE JAMES CITY COUNTY E&SC INSPECTOR.
2. FOLLOWING THE REMOVAL OF THE SEDIMENT TRAPS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE STORM SEWER PIPE NETWORK FREE AND CLEAR OF SEDIMENT RESULTING FROM UPLAND CONSTRUCTION ACTIVITIES. ASSOCIATED BONDS CANNOT BE RELEASED OR REDUCED UNTIL IT HAS BEEN APPROPRIATEDLY DEMONSTRATED THAT THE SYSTEM HAS BEEN CLEARED OF ALL SEDIMENT AND DEBRIS ASSOCIATED WITH SITE CONSTRUCTION.
3. AS THE NEW "RAILROAD CROSSING" ENTRANCE IS CONSTRUCTED REALIGN SAFETY FENCE TO 5' BEHIND BACK OF CURB. SAFETY FENCE TO REMAIN WITH GATES AT DRIVE ISLES INFRONT OF BUILDINGS B&C.
4. REMOVE SAFETY FENCE ALONG ROUTE 60. BARRICADE ALL NEW SITE ENTRANCES W/CONSTRUCTION BARRELS AT 5' CENTERS OUTSIDE OF VDOT RIGHT OF WAY UNTIL CONSTRUCTION ACTIVITY IS COMPLETE.
5. CONSTRUCT POCKET PARKS ALONG ROUTE 60. SEED, LANDSCAPE, HARDSCAPE & STABILIZE SITE. AFTER THE SITE IS STABILIZED AND VEGETATION IS ESTABLISHED, AND WITH THE WRITTEN AUTHORIZATION FROM THE JAMES CITY COUNTY EROSION AND SEDIMENT CONTROL INSPECTOR, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AND ANY DEBRIS IS TO BE CLEANED FROM THE SITE.

NOTES:
1. DEWATERING STRUCTURES MEETING THE REQUIREMENTS OF VESCH STD. 3.26 ARE REQUIRED FOR THE DEWATERING ACTIVITIES INCLUDED WITH THE INSTALLATION OF UTILITIES (JACK AND BORE), SEDIMENT TRAP CLOSE OUT, BMP (PER GEOTECHNICAL REPORT), AND OTHER CONSTRUCTION PRACTICES THROUGHOUT THE SITE.
2. ALL CONSTRUCTION TRAFFIC SHALL USE THE SOUTHERN OR NORTHERN ENTRANCES ONLY.
3. DUE TO THE PROXIMITY OF WORK ALONG ROUTE 60, DUST CONTROL IN ACCORDANCE WITH MINIMUM STANDARD 3.39 MAY BE WARRANTED TO ENSURE TRAFFIC SAFETY.

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
Phase 2 Erosion & Sediment Control Plan

Sheet Number
16

JAMES CITY COUNTY ENVIRONMENTAL DIVISION
EROSION AND SEDIMENT CONTROL NOTES
REVISED 7/6/01

THE PURPOSE OF THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE TO PRECLUDE THE TRANSPORT OF ALL WATERBORNE SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES OR STATE WATERS. IF FIELD INSPECTION REVEALS THE INADEQUACY OF THE PLAN TO CONFINE SEDIMENT TO THE PROJECT SITE, ALL APPROPRIATE MODIFICATIONS WILL BE MADE TO CORRECT ANY PLAN DEFICIENCIES. IN ADDITION TO THESE NOTES, ALL PROVISIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL APPLY TO THIS PROJECT.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION, 1992. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN THAT MAY BE PERTINENT TO THIS PROJECT, INCLUDING MINIMUM STANDARDS 1 THROUGH 19. IF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS FOUND TO BE INADEQUATE IN THE FIELD, THE MINIMUM STANDARDS WILL APPLY IN ADDITION TO THE PROVISIONS OF THE APPROVED PLAN.

2. AS A PREREQUISITE TO APPROVAL OF AN EROSION AND SEDIMENT CONTROL PLAN FOR LAND-DISTURBING ACTIVITIES, THE NAME OF A RESPONSIBLE LAND-DISTURBER SHALL BE PROVIDED. THE RESPONSIBLE LAND-DISTURBER SHALL BE AN INDIVIDUAL WHO HOLDS A VALID CERTIFICATE OF COMPETENCE ISSUED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND IS DEFINED AS THE PERSON IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITY. PERMITS OR PLANS WITHOUT THIS INFORMATION ARE DEEMED INCOMPLETE AND WILL NOT BE APPROVED UNTIL PROPER NOTIFICATION IS RECEIVED. ALSO, IF THE PERSON DESIGNATED AS RESPONSIBLE LAND-DISTURBER CHANGES BETWEEN THE TIME OF PLAN APPROVAL AND THE SCHEDULED PRECONSTRUCTION MEETING, THE ENVIRONMENTAL DIVISION SHALL BE INFORMED OF THE CHANGE, IN WRITING, 24-HOURS IN ADVANCE OF THE PRECONSTRUCTION MEETING.

3. A PRECONSTRUCTION MEETING SHALL BE HELD ON SITE BETWEEN THE COUNTY, THE DEVELOPER, THE PROJECT ENGINEER, THE RESPONSIBLE LAND-DISTURBER AND THE CONTRACTOR PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION TO THE COUNTY FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING. THE DESIGNATED RESPONSIBLE LAND-DISTURBER IS REQUIRED TO ATTEND THE PRECONSTRUCTION MEETING FOR THE PROJECT.

4. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED BY A TEMPORARY CONSTRUCTION ENTRANCE TO PREVENT TRACKING OF MUD ONTO PUBLIC RIGHT-OF-WAYS. AN ENTRANCE PERMIT FROM VDOT IS REQUIRED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN STATE RIGHT-OF-WAYS. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE THOROUGHLY CLEANED AT THE END OF EACH DAY (STD & SPEC 3.02).

5. SEDIMENT BASINS AND TRAPS (STD & SPEC 3.13 AND 3.14), PERIMETER DIKES (STD & SPEC 3.09 AND 3.12), SEDIMENT FILTER BARRIERS (STD. & AND SPEC 3.05) AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON-SITE MUST BE CONSTRUCTED AS A FIRST STEP IN GRADING AND MUST BE MADE FUNCTIONAL PRIOR TO ANY UPSLOPE LAND DISTURBANCE TAKING PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER INSTALLATION.
PERIODIC INSPECTIONS OF THE EROSION CONTROL MEASURES BY THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE MADE TO ASSESS THEIR CONDITION. ANY NECESSARY MAINTENANCE OF THE MEASURES SHALL BE ACCOMPLISHED IMMEDIATELY AND SHALL INCLUDE THE REPAIR OF MEASURES DAMAGED BY ANY SUBCONTRACTOR INCLUDING THOSE OF THE PUBLIC UTILITY COMPANIES.

6. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRANSVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY LOWER WATER DOWNSLOPE WITHOUT CAUSING EROSION. A TEMPORARY FILL DIVERSION (STD. & SPEC. 3.10) AND SLOPE DRAIN (STD. & SPEC. 3.15) SHALL BE INSTALLED PRIOR TO THE END OF EACH WORKING DAY.

7. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT TIME OF CONSTRUCTION TO INSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. ENVIRONMENTAL DIVISION APPROVAL WILL BE REQUIRED FOR OTHER DEVIATIONS FROM THE APPROVED PLAN.

8. THE CONTRACTOR SHALL PLACE SOIL STOCKPILES AT THE LOCATIONS SHOWN ON THE PLAN. SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. OFF-SITE WASTE OR BORROW AREAS SHALL BE APPROVED BY THE ENVIRONMENTAL DIVISION PRIOR TO THE IMPORT OF ANY BORROW OR EXPORT OF ANY WASTE TO OR FROM THE PROJECT SITE.

9. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT. THE INSTALLATION OF DRAINAGE FACILITIES SHALL TAKE PRECEDENCE OVER ALL UNDERGROUND UTILITIES. OUTFALL DITCHES FROM DRAINAGE STRUCTURES SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION OF THE SAME (STD & SPEC 3.18). THIS INCLUDES INSTALLATION OF EROSION CONTROL STONE OR PAVED DITCHES WHERE REQUIRED. ANY DRAINAGE OUTFALLS REQUIRED FOR A STREET MUST BE COMPLETED BEFORE STREET GRADING OR UTILITY INSTALLATION BEGINS.

10. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAT 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

11. NO MORE THAN 300 FEET OF SANITARY SEWER, STORM DRAIN, WATER OR UNDERGROUND UTILITY LINES ARE TO BE OPEN AT ONE TIME. FOLLOWING INSTALLATION OF ANY PORTION OF THESE ITEMS, ALL DISTURBED AREAS ARE TO BE IMMEDIATELY STABILIZED (I.E., THE SAME DAY).

12. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING (STD & SPEC 3.35). SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.

13. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION ON THIS PLAN SHALL MEAN THE SUCCESSFUL GERMINATION AND ESTABLISHMENT OF A STABLE GRASS COVER FROM A PROPERLY PREPARED SEEDBED CONTAINING THE SPECIFIED AMOUNTS OF SEED, LIME AND FERTILIZER (STD & SPEC 3.32). IRRIGATION SHALL BE REQUIRED AS NECESSARY TO ENSURE ESTABLISHMENT OF GRASS COVER.

14. ALL SLOPES STEEPER THAN 3H:1V SHALL REQUIRE THE USE OF EROSION CONTROL BLANKETS AND MATTINGS TO AID IN THE ESTABLISHMENT OF A VEGETATIVE COVER. INSTALLATION SHALL BE IN ACCORDANCE WITH STD. & SPEC. 3.35, MULCHING, STD. & SPEC. 3.36, SOIL STABILIZATION BLANKETS AND MATTING AND MANUFACTURER=S INSTRUCTIONS. NO SLOPES SHALL BE CREATED STEEPER THAN 2H:1V.

15. INLET PROTECTION (STD & SPEC 3.07 AND 3.08) SHALL BE PROVIDED FOR ALL STORM DRAIN AND CULVERT INLETS FOLLOWING CONSTRUCTION OF THE SAME.

16. TEMPORARY LINERS, SUCH AS POLYETHYLENE SHEETS, SHALL BE PROVIDED FOR ALL PAVED DITCHES UNTIL THE PERMANENT CONCRETE LINER IS INSTALLED.

17. PAVED DITCHES SHALL BE REQUIRED WHEREVER ACCELERATED EROSION IS EVIDENT. PARTICULAR ATTENTION SHALL BE PAID TO THOSE AREAS WHERE GRADES EXCEED 3 PERCENT.

18. TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. TRAPPED SEDIMENT SHALL BE SPREAD, SEEDED AND MULCHED. AFTER THE PROJECT AND STABILIZATION IS COMPLETE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS.

19. NO SEDIMENT TRAP OR SEDIMENT BASIN SHALL BE REMOVED UNTIL A) AT LEAST 75 PERCENT OF THE LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN SOLD TO A THIRD PARTY (UNRELATED TO THE DEVELOPER) FOR THE CONSTRUCTION OF HOMES AND/OR B) 60 PERCENT OF THE SINGLE FAMILY LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN COMPLETED AND THE SOIL STABILIZED. A BULK SALE OF THE LOTS TO ANOTHER BUILDER DOES NOT SATISFY THIS PROVISION. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL NOT BE REMOVED WITHOUT THE EXPRESS AUTHORIZATION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.

20. RECORD DRAWINGS (AS-BUILTS) AND CONSTRUCTION CERTIFICATIONS ARE BOTH REQUIRED FOR NEWLY CONSTRUCTED OR MODIFIED STORMWATER MANAGEMENT/BMP FACILITIES. CERTIFICATION ACTIVITIES SHALL BE ADEQUATELY COORDINATED AND PERFORMED BEFORE, DURING AND FOLLOWING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER MANAGEMENT/BMP FACILITIES, RECORD DRAWING AND CONSTRUCTION CERTIFICATION, STANDARD FORMS & INSTRUCTIONS.

21. DESIGN AND CONSTRUCTION OF PRIVATE-TYPE SITE DRAINAGE SYSTEMS OUTSIDE VDOT RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER DRAINAGE CONVEYANCE SYSTEMS (NON-BMP RELATED), GENERAL DESIGN AND CONSTRUCTION GUIDELINES.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF THE REDEVELOPMENT OF THE 18.78 ACRE RETAIL PARCEL OWNED BY THE WILLIAMSBURG POTTERY FACTORY, INC. LOCATED BETWEEN THE CSX RAILROAD AND RICHMOND ROAD (ROUTE 60) RIGHT OF WAY. THE REDEVELOPMENT PLAN CALLS FOR 3 RETAIL BUILDINGS AND FUTURE BANK, RESTAURANT, AND AN ADDITIONAL RETAIL BUILDING.

EXISTING SITE CONDITIONS:
THE EXISTING SITE IS A FULLY DEVELOPED SHOPPING CENTER WHICH NOW SITS VACANT. SLOPES ARE MILD TO MODERATE FROM THE RICHMOND ROAD RIGHT OF WAY TOWARDS THE CSX RAILROAD. THE SITE IS CURRENTLY 78.8% IMPERVIOUS.

ADJACENT AREAS:
THE SITE IS BOUND BY RICHMOND ROAD (ROUTE 60) TO THE WEST, THE CSX RAILROAD TO THE EAST, ACTION PARK OF WILLIAMSBURG, VA INC. TO THE NORTH AND THOMAS C. AND CAROL A. CHESTNUTT PROPERTY TO THE SOUTH.

OFF-SITE AREAS:
IN ADDITION TO THE REDEVELOPMENT OF THE 18.78 ACRE RETAIL SPACE THIS PLAN CALLS FOR THE REHABILITATION OF THE WILLIAMSBURG POTTERY'S EXISTING FARM POND AS REQUIRED BY THE PROFFERS DATED MARCH 19, 2007. THE PROPOSED BMP WILL OCCUPY THE SAME SPACE AS THE EXISTING FARM POND, BUT DESIGNED TO CURRENT COUNTY AND STATE STANDARDS FOR WATER QUALITY AND QUANTITY CONTROLS AS WELL AS STREAM CHANNEL PROTECTION VOLUME.

CRITICAL AREAS:
THE EXISTING SUBJECT PARCEL IS LARGELY IMPERVIOUS AS EXISTING WITH RELATIVELY MILD SLOPES. CARE SHOULD BE TAKEN WHEN WHILE WORKING NEAR THE CSX RIGHT OF WAY AND THE STORMWATER CONVEYANCES BENEATH THE RAILROAD TO PROTECT AGAINST SEDIMENTATION AND CLOGGING.

THE BMP RESTORATION HAS MORE CRITICAL ITEMS TO PROTECT. THE EXISTING POND IS FED BY 2 ERODED STREAM CHANNELS. THIS PROJECT SHALL NOT ALLOW ANY ADDITIONAL RUNOFF TO ENTER THESE CHANNELS, AND AS PROPOSED WILL OFFLOAD THE MAJOR CONTRIBUTING RUNOFF INTO PIPED STORM SEWER SYSTEMS TO THE POND.

CARE SHOULD ALSO BE TAKEN WHEN WORKING ON THE EXISTING AND PROPOSED DAM EMBANKMENT TO PROTECT THE RPA BUFFER AND WETLANDS SURROUNDING THE WORK AREA.

EROSION AND SEDIMENT CONTROL MEASURES:
FOR MAXIMUM EROSION AND SEDIMENT CONTROL PROTECTION, ALL DISTURBED AREAS ON-SITE WILL DRAIN TO EITHER THE PROPOSED SEDIMENT BASIN FACILITY, PROPOSED SEDIMENT TRAPPING FACILITY, SILT FENCE OR SUPER SILT FENCE. IN ADDITION, TREE PROTECTION, DIVERSION DIKES, INLET PROTECTION, PERMANENT SEEDING AND A CONSTRUCTION ENTRANCE WILL BE UTILIZED AND INSTALLED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK TO MINIMIZE THE TRANSPORTATION OF SEDIMENT OFF-SITE.

PERMANENT STABILIZATION:
PERMANENT SEEDING WILL BE USED TO STABILIZE THE SITE AFTER CONSTRUCTION IS COMPLETE.

STORMWATER RUNOFF CONSIDERATIONS:
STORMWATER MANAGEMENT FOR THE PROPOSED PROJECT WILL BE ACHIEVED BY THE PROPOSED BMP REHABILITATION. THE BASIN IS TO FUNCTION AS AN A-1 WET POND (MODIFIED) WITH 50% POLLUTION REMOVAL EFFICIENCY. 6 FILTERRA FILTER BOXES ARE PROPOSED AS REQUIRED BY THE PROFFERS TO TREAT THE RUNOFF OF APPROXIMATELY 1.5 ACRES.

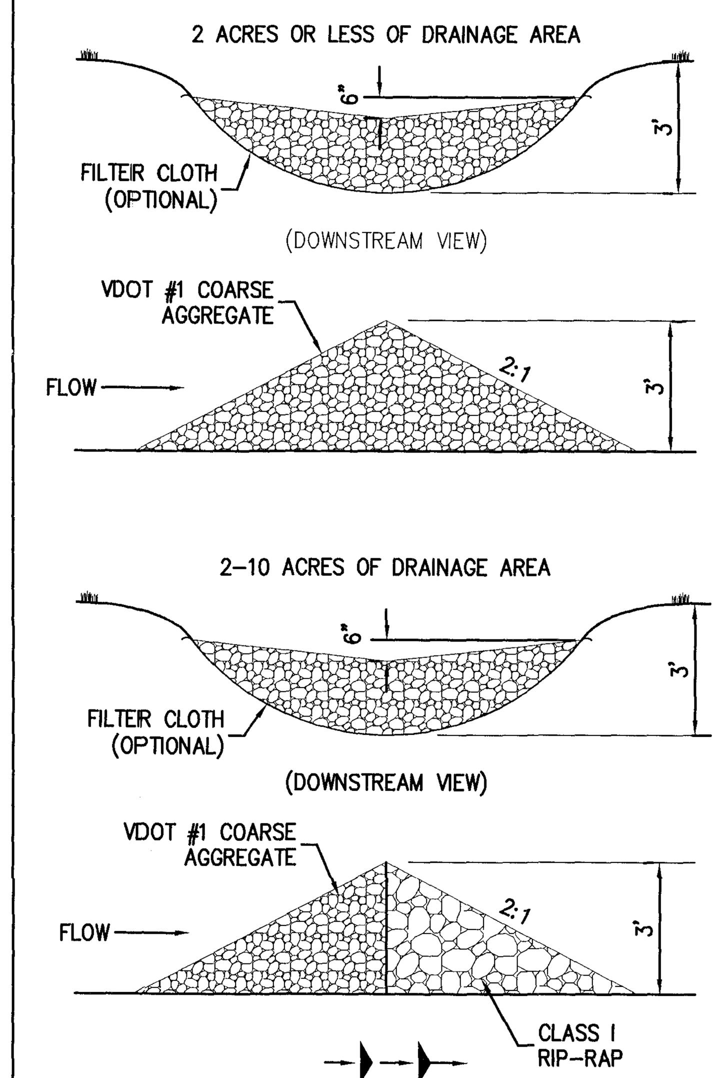
	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	
COMMERCIAL OR RESIDENTIAL	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	175-200 LBS.
OR	
-COMMON BERMUDA GRASS **	75 LBS.
HIGH-MAINTENANCE LAWN	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	200-250 LBS.
OR	
-HYBRID BERMUDAGRASS (SEED)**	40 LBS. (UNHALLED)
OR	
-HYBRID BERMUDAGRASS (BY OTHER VEGETATIVE ESTABLISHMENT METHOD, SEE STD. & SPEC. 3.34)	30 LBS. (HULLED)
GENERAL SLOPE (3:1 OR LESS)	
-KENTUCKY 31 FESCUE	128 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
	150 LBS.
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
-KENTUCKY 31 TALL FESCUE	93-108 LBS.
-COMMON BERMUDAGRASS **	0-15 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
-SERICEA LESPEDEZA **	20 LBS.
	150 LBS.

(PS) VA DSWC PG. III - 304

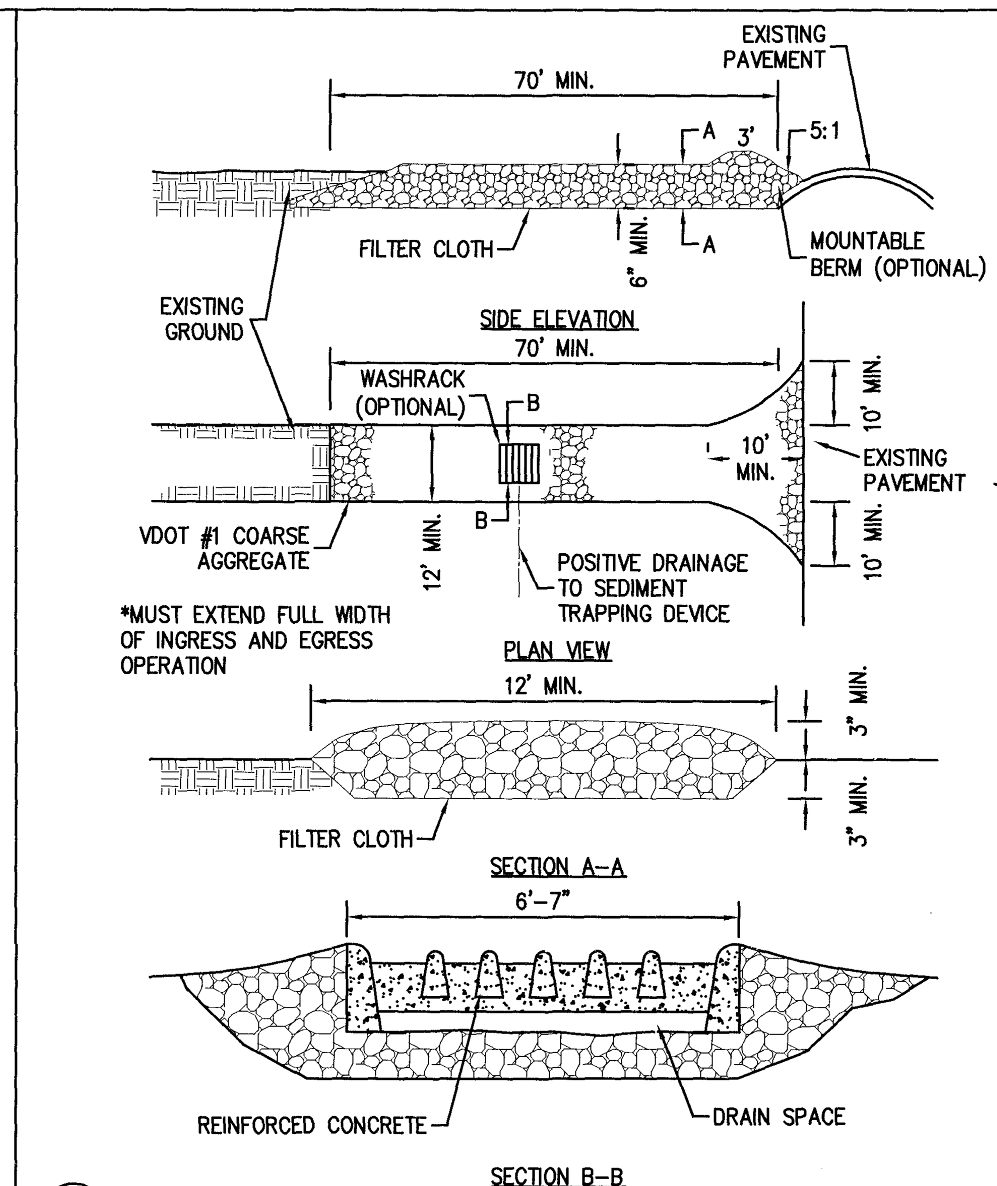
* USE SEASONAL CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
FEBRUARY, MARCH THROUGH APRIL....ANNUAL RYE
MAY 1ST THROUGH AUGUST....FOXTAIL MILLET
SEPTEMBER, OCTOBER THROUGH NOVEMBER 15TH....ANNUAL RYE
NOVEMBER 16TH THROUGH JANUARY....WINTER RYE

** MAY THROUGH OCTOBER, USE HULLED SEED. ALL OTHER SEEDING PERIODS, USE UNHULLED SEED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

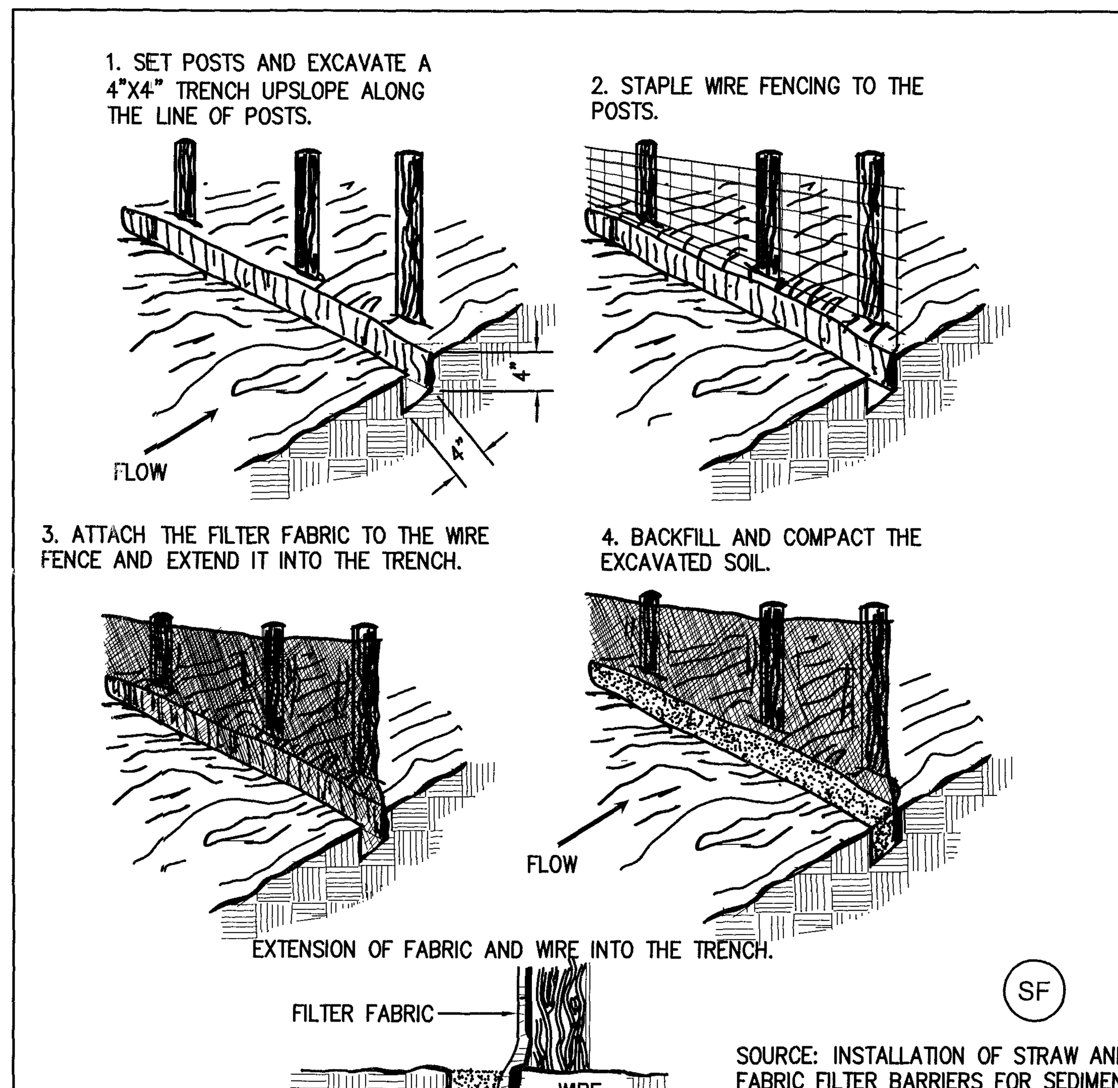
SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA



(CD) ROCK CHECK DAM
SOURCE: VA. DSWC PLATE. 3.20-1 N.T.S.

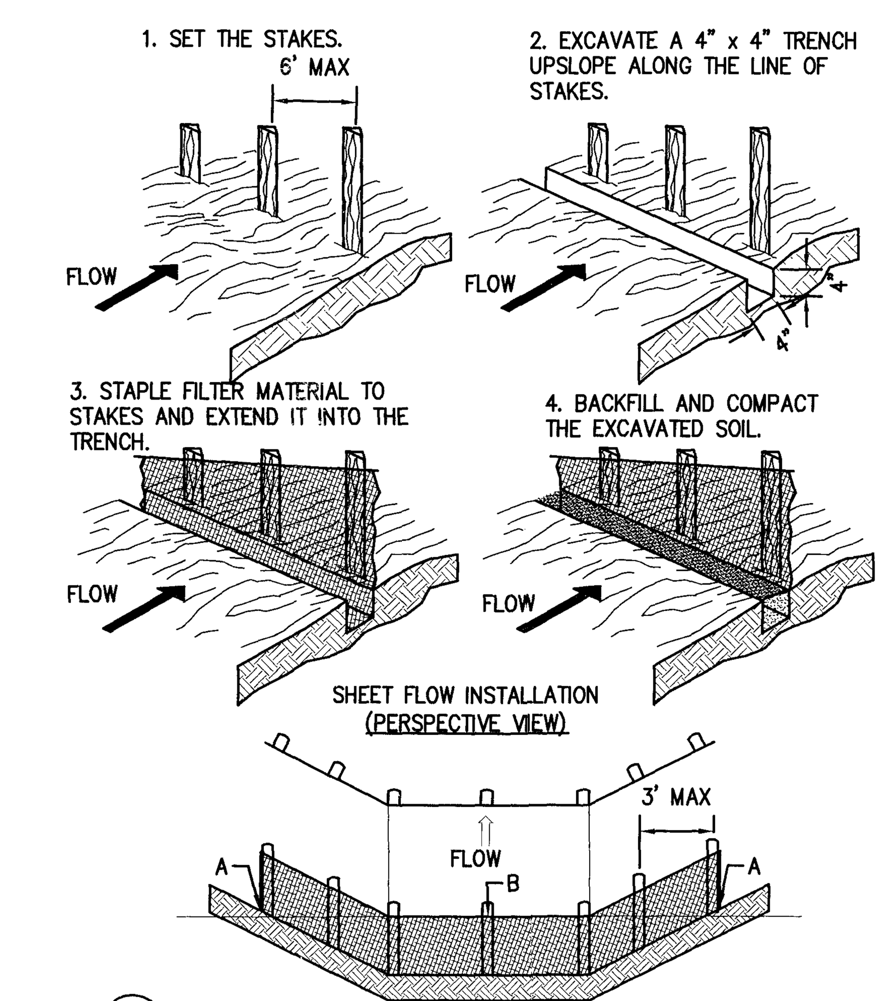


(CE) STONE CONSTRUCTION ENTRANCE
SOURCE: VA. DSWC PLATE. 3.02-1 N.T.S.



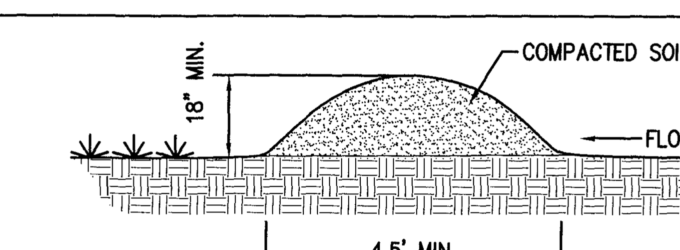
(SF) SOURCE: INSTALLATION OF STRAW AND FABRIC FILTER BARRIERS FOR SEDIMENT CONTROL, SHERWOOD AND WYANT PLATE. 3.05-1

CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)
N.T.S.



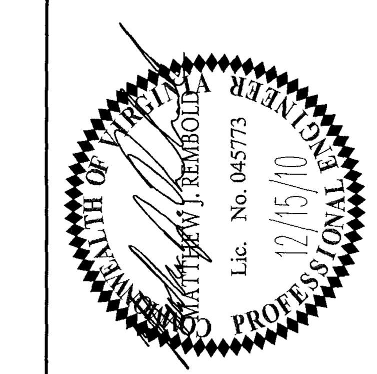
(SF) SOURCE: VA. DSWC PLATE. 3.05-2

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)
N.T.S.



(DD) TEMPORARY DIVERSION DIKE
N.T.S.
SOURCE: VA. DSWC PLATE. 3.09-1

Rev.	Date	Description	Revised By
1	10/20/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR



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Project Contacts: RAC/MJR/SVC	
Project Number: 9510-04	
Scale: 1"=30'	Date: 9/3/2010
Sheet Title: Erosion & Sediment Control Notes & Details	
Sheet Number 17	

JAMES CITY COUNTY ENVIRONMENTAL DIVISION
EROSION AND SEDIMENT CONTROL NOTES
REVISED 7/6/01

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5. SEDIMENT BASINS AND TRAPS (STD & SPEC 3.13 AND 3.14), PERIMETER DIKES (STD & SPEC 3.09 AND 3.12), SEDIMENT FILTER BARRIERS (STD. & AND SPEC 3.05) AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON-SITE MUST BE CONSTRUCTED AS A FIRST STEP IN GRADING AND MUST BE MADE FUNCTIONAL PRIOR TO ANY UPSLOPE LAND DISTURBANCE TAKING PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER INSTALLATION.
PERIODIC INSPECTIONS OF THE EROSION CONTROL MEASURES BY THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE MADE TO ASSESS THEIR CONDITION. ANY NECESSARY MAINTENANCE OF THE MEASURES SHALL BE ACCOMPLISHED IMMEDIATELY AND SHALL INCLUDE THE REPAIR OF MEASURES DAMAGED BY ANY SUBCONTRACTOR INCLUDING THOSE OF THE PUBLIC UTILITY COMPANIES.

6. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRANSVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY LOWER WATER DOWNSLOPE WITHOUT CAUSING EROSION. A TEMPORARY FILL DIVERSION (STD. & SPEC. 3.10) AND SLOPE DRAIN (STD. & SPEC. 3.15) SHALL BE INSTALLED PRIOR TO THE END OF EACH WORKING DAY.

7. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT TIME OF CONSTRUCTION TO INSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. ENVIRONMENTAL DIVISION APPROVAL WILL BE REQUIRED FOR OTHER DEVIATIONS FROM THE APPROVED PLAN.

8. THE CONTRACTOR SHALL PLACE SOIL STOCKPILES AT THE LOCATIONS SHOWN ON THE PLAN. SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. OFF-SITE WASTE OR BORROW AREAS SHALL BE APPROVED BY THE ENVIRONMENTAL DIVISION PRIOR TO THE IMPORT OF ANY BORROW OR EXPORT OF ANY WASTE TO OR FROM THE PROJECT SITE.

9. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT. THE INSTALLATION OF DRAINAGE FACILITIES SHALL TAKE PRECEDENCE OVER ALL UNDERGROUND UTILITIES. OUTFALL DITCHES FROM DRAINAGE STRUCTURES SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION OF THE SAME (STD & SPEC 3.18). THIS INCLUDES INSTALLATION OF EROSION CONTROL STONE OR PAVED DITCHES WHERE REQUIRED. ANY DRAINAGE OUTFALLS REQUIRED FOR A STREET MUST BE COMPLETED BEFORE STREET GRADING OR UTILITY INSTALLATION BEGINS.

10. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAT 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

11. NO MORE THAN 300 FEET OF SANITARY SEWER, STORM DRAIN, WATER OR UNDERGROUND UTILITY LINES ARE TO BE OPEN AT ONE TIME. FOLLOWING INSTALLATION OF ANY PORTION OF THESE ITEMS, ALL DISTURBED AREAS ARE TO BE IMMEDIATELY STABILIZED (I.E., THE SAME DAY).

12. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING (STD & SPEC 3.35). SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.

13. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION ON THIS PLAN SHALL MEAN THE SUCCESSFUL GERMINATION AND ESTABLISHMENT OF A STABLE GRASS COVER FROM A PROPERLY PREPARED SEEDBED CONTAINING THE SPECIFIED AMOUNTS OF SEED, LIME AND FERTILIZER (STD & SPEC 3.32). IRRIGATION SHALL BE REQUIRED AS NECESSARY TO ENSURE ESTABLISHMENT OF GRASS COVER.

14. ALL SLOPES STEEPER THAN 3H:1V SHALL REQUIRE THE USE OF EROSION CONTROL BLANKETS AND MATTINGS TO AID IN THE ESTABLISHMENT OF A VEGETATIVE COVER. INSTALLATION SHALL BE IN ACCORDANCE WITH STD. & SPEC. 3.35, MULCHING, STD. & SPEC. 3.36, SOIL STABILIZATION BLANKETS AND MATTING AND MANUFACTURER=S INSTRUCTIONS. NO SLOPES SHALL BE CREATED STEEPER THAN 2H:1V.

15. INLET PROTECTION (STD & SPEC 3.07 AND 3.08) SHALL BE PROVIDED FOR ALL STORM DRAIN AND CULVERT INLETS FOLLOWING CONSTRUCTION OF THE SAME.

16. TEMPORARY LINERS, SUCH AS POLYETHYLENE SHEETS, SHALL BE PROVIDED FOR ALL PAVED DITCHES UNTIL THE PERMANENT CONCRETE LINER IS INSTALLED.

17. PAVED DITCHES SHALL BE REQUIRED WHEREVER ACCELERATED EROSION IS EVIDENT. PARTICULAR ATTENTION SHALL BE PAID TO THOSE AREAS WHERE GRADES EXCEED 3 PERCENT.

18. TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. TRAPPED SEDIMENT SHALL BE SPREAD, SEEDED AND MULCHED. AFTER THE PROJECT AND STABILIZATION IS COMPLETE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS.

19. NO SEDIMENT TRAP OR SEDIMENT BASIN SHALL BE REMOVED UNTIL A) AT LEAST 75 PERCENT OF THE LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN SOLD TO A THIRD PARTY (UNRELATED TO THE DEVELOPER) FOR THE CONSTRUCTION OF HOMES AND/OR B) 60 PERCENT OF THE SINGLE FAMILY LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN COMPLETED AND THE SOIL STABILIZED. A BULK SALE OF THE LOTS TO ANOTHER BUILDER DOES NOT SATISFY THIS PROVISION. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL NOT BE REMOVED WITHOUT THE EXPRESS AUTHORIZATION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.

20. RECORD DRAWINGS (AS-BUILTS) AND CONSTRUCTION CERTIFICATIONS ARE BOTH REQUIRED FOR NEWLY CONSTRUCTED OR MODIFIED STORMWATER MANAGEMENT/BMP FACILITIES. CERTIFICATION ACTIVITIES SHALL BE ADEQUATELY COORDINATED AND PERFORMED BEFORE, DURING AND FOLLOWING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER MANAGEMENT/BMP FACILITIES, RECORD DRAWING AND CONSTRUCTION CERTIFICATION, STANDARD FORMS & INSTRUCTIONS.

21. DESIGN AND CONSTRUCTION OF PRIVATE-TYPE SITE DRAINAGE SYSTEMS OUTSIDE VDOT RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER DRAINAGE CONVEYANCE SYSTEMS (NON-BMP RELATED), GENERAL DESIGN AND CONSTRUCTION GUIDELINES.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF THE REDEVELOPMENT OF THE 18.78 ACRE RETAIL PARCEL OWNED BY THE WILLIAMSBURG POTTERY FACTORY, INC. LOCATED BETWEEN THE CSX RAILROAD AND RICHMOND ROAD (ROUTE 60) RIGHT OF WAY. THE REDEVELOPMENT PLAN CALLS FOR 3 RETAIL BUILDINGS AND FUTURE BANK, RESTAURANT, AND AN ADDITIONAL RETAIL BUILDING.

EXISTING SITE CONDITIONS:
THE EXISTING SITE IS A FULLY DEVELOPED SHOPPING CENTER WHICH NOW SITS VACANT. SLOPES ARE MILD TO MODERATE FROM THE RICHMOND ROAD RIGHT OF WAY TOWARDS THE CSX RAILROAD. THE SITE IS CURRENTLY 78.8% IMPERVIOUS.

ADJACENT AREAS:
THE SITE IS BOUND BY RICHMOND ROAD (ROUTE 60) TO THE WEST, THE CSX RAILROAD TO THE EAST, ACTION PARK OF WILLIAMSBURG, VA INC. TO THE NORTH AND THOMAS C. AND CAROL A. CHESTNUTT PROPERTY TO THE SOUTH.

OFF-SITE AREAS:
IN ADDITION TO THE REDEVELOPMENT OF THE 18.78 ACRE RETAIL SPACE THIS PLAN CALLS FOR THE REHABILITATION OF THE WILLIAMSBURG POTTERY'S EXISTING FARM POND AS REQUIRED BY THE PROFFERS DATED MARCH 19, 2007. THE PROPOSED BMP WILL OCCUPY THE SAME SPACE AS THE EXISTING FARM POND, BUT DESIGNED TO CURRENT COUNTY AND STATE STANDARDS FOR WATER QUALITY AND QUANTITY CONTROLS AS WELL AS STREAM CHANNEL PROTECTION VOLUME.

CRITICAL AREAS:
THE EXISTING SUBJECT PARCEL IS LARGELY IMPERVIOUS AS EXISTING WITH RELATIVELY MILD SLOPES. CARE SHOULD BE TAKEN WHEN WHILE WORKING NEAR THE CSX RIGHT OF WAY AND THE STORMWATER CONVEYANCES BENEATH THE RAILROAD TO PROTECT AGAINST SEDIMENTATION AND CLOGGING.

THE BMP RESTORATION HAS MORE CRITICAL ITEMS TO PROTECT. THE EXISTING POND IS FED BY 2 ERODED STREAM CHANNELS. THIS PROJECT SHALL NOT ALLOW ANY ADDITIONAL RUNOFF TO ENTER THESE CHANNELS, AND AS PROPOSED WILL OFFLOAD THE MAJOR CONTRIBUTING RUNOFF INTO PIPED STORM SEWER SYSTEMS TO THE POND.

CARE SHOULD ALSO BE TAKEN WHEN WORKING ON THE EXISTING AND PROPOSED DAM EMBANKMENT TO PROTECT THE RPA BUFFER AND WETLANDS SURROUNDING THE WORK AREA.

EROSION AND SEDIMENT CONTROL MEASURES:
FOR MAXIMUM EROSION AND SEDIMENT CONTROL PROTECTION, ALL DISTURBED AREAS ON-SITE WILL DRAIN TO EITHER THE PROPOSED SEDIMENT BASIN FACILITY, PROPOSED SEDIMENT TRAPPING FACILITY, SILT FENCE OR SUPER SILT FENCE. IN ADDITION, TREE PROTECTION, DIVERSION DIKES, INLET PROTECTION, PERMANENT SEEDING AND A CONSTRUCTION ENTRANCE WILL BE UTILIZED AND INSTALLED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK TO MINIMIZE THE TRANSPORTATION OF SEDIMENT OFF-SITE.

PERMANENT STABILIZATION:
PERMANENT SEEDING WILL BE USED TO STABILIZE THE SITE AFTER CONSTRUCTION IS COMPLETE.

STORMWATER RUNOFF CONSIDERATIONS:
STORMWATER MANAGEMENT FOR THE PROPOSED PROJECT WILL BE ACHIEVED BY THE PROPOSED BMP REHABILITATION. THE BASIN IS TO FUNCTION AS AN A-1 WET POND (MODIFIED) WITH 50% POLLUTION REMOVAL EFFICIENCY. 6 FILTERRA FILTER BOXES ARE PROPOSED AS REQUIRED BY THE PROFFERS TO TREAT THE RUNOFF OF APPROXIMATELY 1.5 ACRES.

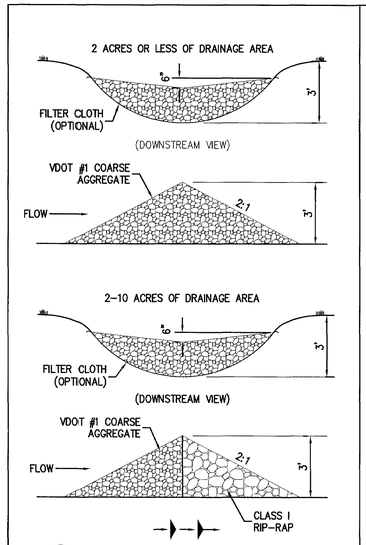
	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	
COMMERCIAL OR RESIDENTIAL	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	175-200 LBS.
OR	
-COMMON BERMUDA GRASS **	75 LBS.
HIGH-MAINTENANCE LAWN	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	200-250 LBS.
OR	
-HYBRID BERMUDAGRASS (SEED)**	40 LBS. (UNHALLED)
OR	
-HYBRID BERMUDAGRASS (BY OTHER VEGETATIVE ESTABLISHMENT METHOD, SEE STD. & SPEC. 3.34)	30 LBS. (HULLED)
GENERAL SLOPE (3:1 OR LESS)	
-KENTUCKY 31 FESCUE	128 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
	150 LBS.
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
-KENTUCKY 31 TALL FESCUE	93-108 LBS.
-COMMON BERMUDAGRASS **	0-15 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
-SERICEA LESPEDEZA **	20 LBS.
	150 LBS.

(PS) VA DSWC PG. III - 304

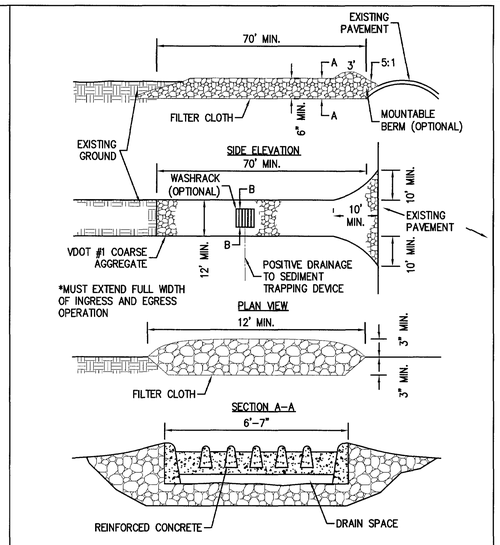
* USE SEASONAL CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
FEBRUARY, MARCH THROUGH APRIL.....ANNUAL RYE
MAY 1ST THROUGH AUGUST.....FOXTAIL MILLET
SEPTEMBER, OCTOBER THROUGH NOVEMBER 15TH.....ANNUAL RYE
NOVEMBER 16TH THROUGH JANUARY.....WINTER RYE

** MAY THROUGH OCTOBER, USE HULLED SEED. ALL OTHER SEEDING PERIODS, USE UNHULLED SEED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

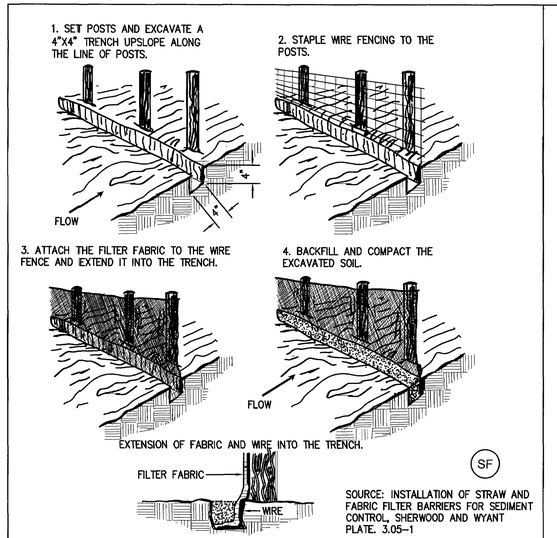
SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA



(CD) ROCK CHECK DAM
SOURCE: VA. DSWC PLATE. 3.20-1 N.T.S.

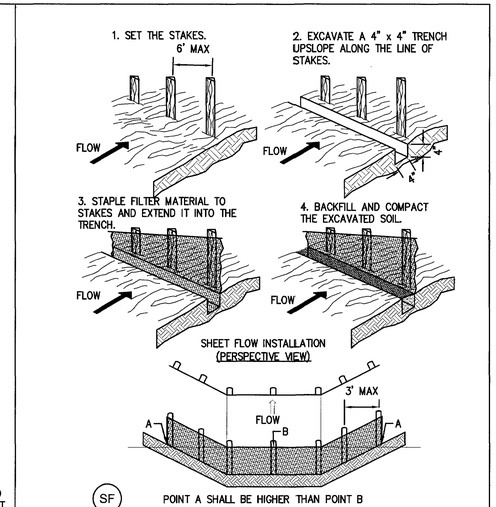


(CE) STONE CONSTRUCTION ENTRANCE
SOURCE: VA. DSWC PLATE. 3.02-1 N.T.S.



(SF) SOURCE: INSTALLATION OF STRAW AND FABRIC FILTER BARRIERS FOR SEDIMENT CONTROL, SHERWOOD AND WYANT PLATE. 3.05-1

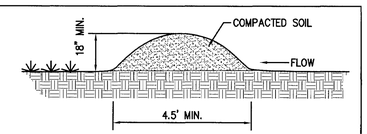
CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)
N.T.S.



(SF) SOURCE: VA. DSWC PLATE. 3.05-2

POINT A SHALL BE HIGHER THAN POINT B
DRAINAGEWAY INSTALLATION (FRONT ELEVATION)

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)
N.T.S.



(DD) TEMPORARY DIVERSION DIKE
SOURCE: VA. DSWC PLATE. 3.09-1 N.T.S.

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Residential	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised SWM Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

COMMONWEALTH OF VIRGINIA
MATTHEW J. REMBOLD
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7/25/12
PROFESSIONAL ENGINEER

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Williamsburg Pottery
Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Erosion & Sediment Control Notes & Details

Sheet Number
17

JAMES CITY COUNTY ENVIRONMENTAL DIVISION
EROSION AND SEDIMENT CONTROL NOTES
REVISED 7/6/01

THE PURPOSE OF THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE TO PRECLUDE THE TRANSPORT OF ALL WATERBORNE SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES OR STATE WATERS. IF FIELD INSPECTION REVEALS THE INADEQUACY OF THE PLAN TO CONFINE SEDIMENT TO THE PROJECT SITE, ALL APPROPRIATE MODIFICATIONS WILL BE MADE TO CORRECT ANY PLAN DEFICIENCIES. IN ADDITION TO THESE NOTES, ALL PROVISIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL APPLY TO THIS PROJECT.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION, 1992. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN THAT MAY BE PERTINENT TO THIS PROJECT, INCLUDING MINIMUM STANDARDS 1 THROUGH 19. IF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS FOUND TO BE INADEQUATE IN THE FIELD, THE MINIMUM STANDARDS WILL APPLY IN ADDITION TO THE PROVISIONS OF THE APPROVED PLAN.

2. AS A PREREQUISITE TO APPROVAL OF AN EROSION AND SEDIMENT CONTROL PLAN FOR LAND-DISTURBING ACTIVITIES, THE NAME OF A RESPONSIBLE LAND-DISTURBER SHALL BE PROVIDED. THE RESPONSIBLE LAND-DISTURBER SHALL BE AN INDIVIDUAL WHO HOLDS A VALID CERTIFICATE OF COMPETENCE ISSUED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND IS DEFINED AS THE PERSON IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITY. PERMITS OR PLANS WITHOUT THIS INFORMATION ARE DEEMED INCOMPLETE AND WILL NOT BE APPROVED UNTIL PROPER NOTIFICATION IS RECEIVED. ALSO, IF THE PERSON DESIGNATED AS RESPONSIBLE LAND-DISTURBER CHANGES BETWEEN THE TIME OF PLAN APPROVAL AND THE SCHEDULED PRECONSTRUCTION MEETING, THE ENVIRONMENTAL DIVISION SHALL BE INFORMED OF THE CHANGE, IN WRITING, 24-HOURS IN ADVANCE OF THE PRECONSTRUCTION MEETING.

3. A PRECONSTRUCTION MEETING SHALL BE HELD ON SITE BETWEEN THE COUNTY, THE DEVELOPER, THE PROJECT ENGINEER, THE RESPONSIBLE LAND-DISTURBER AND THE CONTRACTOR PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION TO THE COUNTY FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING. THE DESIGNATED RESPONSIBLE LAND-DISTURBER IS REQUIRED TO ATTEND THE PRECONSTRUCTION MEETING FOR THE PROJECT.

4. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED BY A TEMPORARY CONSTRUCTION ENTRANCE TO PREVENT TRACKING OF MUD ONTO PUBLIC RIGHT-OF-WAYS. AN ENTRANCE PERMIT FROM VDOT IS REQUIRED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN STATE RIGHT-OF-WAYS. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE THOROUGHLY CLEANED AT THE END OF EACH DAY (STD & SPEC 3.02).

5. SEDIMENT BASINS AND TRAPS (STD & SPEC 3.13 AND 3.14), PERIMETER DIKES (STD & SPEC 3.09 AND 3.12), SEDIMENT FILTER BARRIERS (STD. & AND SPEC 3.05) AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON-SITE MUST BE CONSTRUCTED AS A FIRST STEP IN GRADING AND MUST BE MADE FUNCTIONAL PRIOR TO ANY UPSLOPE LAND DISTURBANCE TAKING PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER INSTALLATION.
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EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF THE REDEVELOPMENT OF THE 18.78 ACRE RETAIL PARCEL OWNED BY THE WILLIAMSBURG POTTERY FACTORY, INC. LOCATED BETWEEN THE CSX RAILROAD AND RICHMOND ROAD (ROUTE 60) RIGHT OF WAY. THE REDEVELOPMENT PLAN CALLS FOR 3 RETAIL BUILDINGS AND FUTURE BANK, RESTAURANT, AND AN ADDITIONAL RETAIL BUILDING.

EXISTING SITE CONDITIONS:
THE EXISTING SITE IS A FULLY DEVELOPED SHOPPING CENTER WHICH NOW SITS VACANT. SLOPES ARE MILD TO MODERATE FROM THE RICHMOND ROAD RIGHT OF WAY TOWARDS THE CSX RAILROAD. THE SITE IS CURRENTLY 78.8% IMPERVIOUS.

ADJACENT AREAS:
THE SITE IS BOUND BY RICHMOND ROAD (ROUTE 60) TO THE WEST, THE CSX RAILROAD TO THE EAST, ACTION PARK OF WILLIAMSBURG, VA INC. TO THE NORTH AND THOMAS C. AND CAROL A. CHESTNUTT PROPERTY TO THE SOUTH.

OFF-SITE AREAS:
IN ADDITION TO THE REDEVELOPMENT OF THE 18.78 ACRE RETAIL SPACE THIS PLAN CALLS FOR THE REHABILITATION OF THE WILLIAMSBURG POTTERY'S EXISTING FARM POND AS REQUIRED BY THE PROFFERS DATED MARCH 19, 2007. THE PROPOSED BMP WILL OCCUPY THE SAME SPACE AS THE EXISTING FARM POND, BUT DESIGNED TO CURRENT COUNTY AND STATE STANDARDS FOR WATER QUALITY AND QUANTITY CONTROLS AS WELL AS STREAM CHANNEL PROTECTION VOLUME.

CRITICAL AREAS:
THE EXISTING SUBJECT PARCEL IS LARGELY IMPERVIOUS AS EXISTING WITH RELATIVELY MILD SLOPES. CARE SHOULD BE TAKEN WHEN WHILE WORKING NEAR THE CSX RIGHT OF WAY AND THE STORMWATER CONVEYANCES BENEATH THE RAILROAD TO PROTECT AGAINST SEDIMENTATION AND CLOGGING.

THE BMP RESTORATION HAS MORE CRITICAL ITEMS TO PROTECT. THE EXISTING POND IS FED BY 2 ERODED STREAM CHANNELS. THIS PROJECT SHALL NOT ALLOW ANY ADDITIONAL RUNOFF TO ENTER THESE CHANNELS, AND AS PROPOSED WILL OFFLOAD THE MAJOR CONTRIBUTING RUNOFF INTO PIPED STORM SEWER SYSTEMS TO THE POND.

CARE SHOULD ALSO BE TAKEN WHEN WORKING ON THE EXISTING AND PROPOSED DAM EMBANKMENT TO PROTECT THE RPA BUFFER AND WETLANDS SURROUNDING THE WORK AREA.

EROSION AND SEDIMENT CONTROL MEASURES:
FOR MAXIMUM EROSION AND SEDIMENT CONTROL PROTECTION, ALL DISTURBED AREAS ON-SITE WILL DRAIN TO EITHER THE PROPOSED SEDIMENT BASIN FACILITY, PROPOSED SEDIMENT TRAPPING FACILITY, SILT FENCE OR SUPER SILT FENCE. IN ADDITION, TREE PROTECTION, DIVERSION DIKES, INLET PROTECTION, PERMANENT SEEDING AND A CONSTRUCTION ENTRANCE WILL BE UTILIZED AND INSTALLED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK TO MINIMIZE THE TRANSPORTATION OF SEDIMENT OFF-SITE.

PERMANENT STABILIZATION:
PERMANENT SEEDING WILL BE USED TO STABILIZE THE SITE AFTER CONSTRUCTION IS COMPLETE.

STORMWATER RUNOFF CONSIDERATIONS:
STORMWATER MANAGEMENT FOR THE PROPOSED PROJECT WILL BE ACHIEVED BY THE PROPOSED BMP REHABILITATION. THE BASIN IS TO FUNCTION AS AN A-1 WET POND (MODIFIED) WITH 50% POLLUTION REMOVAL EFFICIENCY. 6 FILTERRA FILTER BOXES ARE PROPOSED AS REQUIRED BY THE PROFFERS TO TREAT THE RUNOFF OF APPROXIMATELY 1.5 ACRES.

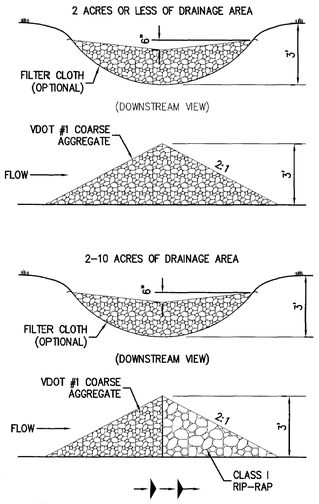
	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	
COMMERCIAL OR RESIDENTIAL	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	175-200 LBS.
OR	
-COMMON BERMUDA GRASS **	75 LBS.
HIGH-MAINTENANCE LAWN	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	200-250 LBS.
OR	
-HYBRID BERMUDAGRASS (SEED)**	40 LBS. (UNHALLED)
OR	
-HYBRID BERMUDAGRASS (BY OTHER VEGETATIVE ESTABLISHMENT METHOD, SEE STD. & SPEC. 3.34)	30 LBS. (HULLED)
GENERAL SLOPE (3:1 OR LESS)	
-KENTUCKY 31 FESCUE	128 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
	150 LBS.
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
-KENTUCKY 31 TALL FESCUE	93-108 LBS.
-COMMON BERMUDAGRASS **	0-15 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
-SERICEA LESPEDEZA **	20 LBS.
	150 LBS.

(PS) VA DSWC PG. III - 304

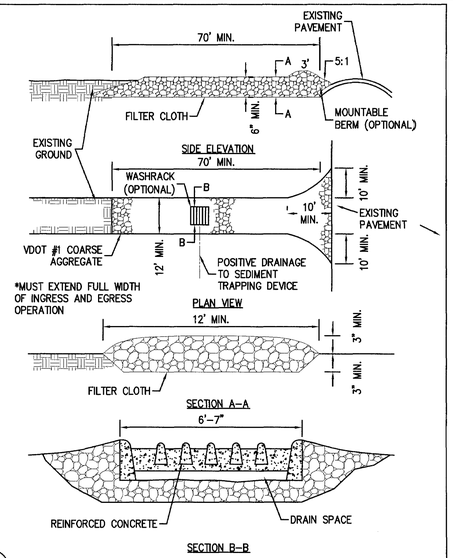
* USE SEASONAL CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
FEBRUARY, MARCH THROUGH APRIL.....ANNUAL RYE
MAY 1ST THROUGH AUGUST.....FOXTAIL MILLET
SEPTEMBER, OCTOBER THROUGH NOVEMBER 15TH.....ANNUAL RYE
NOVEMBER 16TH THROUGH JANUARY.....WINTER RYE

** MAY THROUGH OCTOBER, USE HULLED SEED. ALL OTHER SEEDING PERIODS, USE UNHULLED SEED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

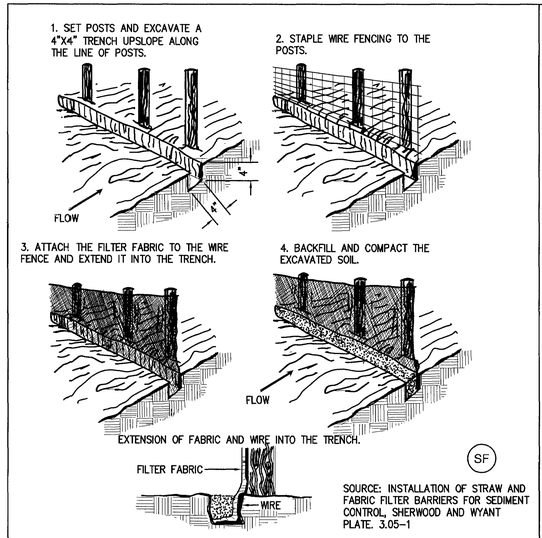
SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA



(CD) ROCK CHECK DAM
SOURCE: VA. DSWC PLATE. 3.20-1 N.T.S.

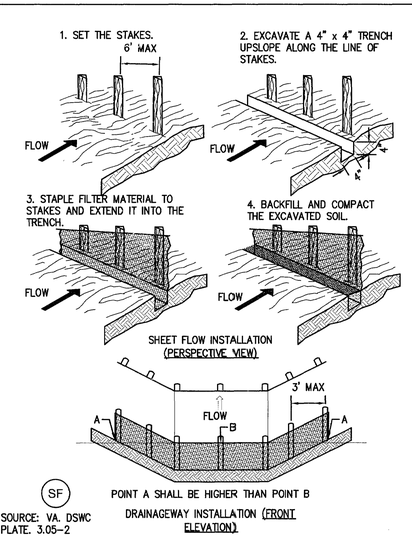


(CE) STONE CONSTRUCTION ENTRANCE
SOURCE: VA. DSWC PLATE. 3.02-1 N.T.S.



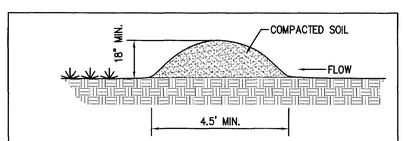
(SF) SOURCE: INSTALLATION OF STRAW AND FABRIC FILTER BARRIERS FOR SEDIMENT CONTROL, SHERWOOD AND WYANT PLATE. 3.05-1

CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)
N.T.S.



(SF) SOURCE: VA. DSWC PLATE. 3.05-2

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)
N.T.S.



(DD) TEMPORARY DIVERSION DIKE
SOURCE: VA. DSWC PLATE. 3.09-1 N.T.S.

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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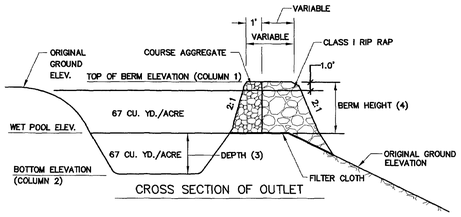
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

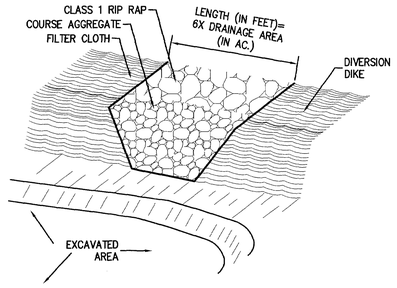
Sheet Title:
Erosion & Sediment Control Notes & Details

Sheet Number
17

S:\Jobs\9510\04-The Promenade Design\Build\Engineering\Plans\Phase 2\9510-04c17-e&sc-notes.dwg, 5/27/2011 8:27:43 AM, matt.short



CROSS SECTION OF OUTLET



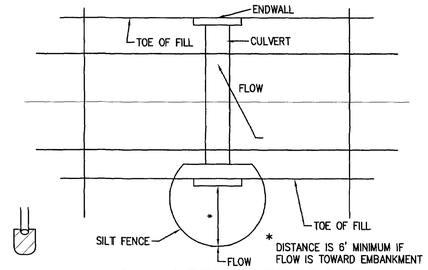
** COARSE AGGREGATE SHALL BE VDOT #3, #357 OR #5

OUTLET (PERSPECTIVE VIEW)

SEDIMENT TRAP #	TOP OF BERM (1)	BOTTOM ELEV. (2)	DEPTH (3)	BERM HEIGHT (4)	LENGTH (FT)	TOP WIDTH (FT)	DRAIN AREA (ACRES)	WET VOLUME (CU. FT.)	TOTAL VOLUME (CU. FT.)
1	110.00	106.00	2.27'	1.73"	10.56	2.5	1.76	3,184	7,416
2	110.00	106.00	2.40'	1.60'	15.12	2.5	2.52	4,585	9,576
3	110.00	106.00	2.48'	1.42'	8.46	2.5	1.41	2,551	5,112
4	110.00	107.00	1.54'	1.46'	8.88	2.5	1.48	2,677	6,336
5	109.00	106.00	1.86'	1.16'	5.88	2.5	0.98	1,773	3,582
6	109.00	106.00	1.41'	1.59'	4.20	2.0	0.70	1,286	3,582

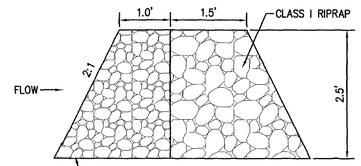
(ST) **SEDIMENT TRAP**

N.T.S.



(CIP) **SILT FENCE CULVERT INLET PROTECTION**

N.T.S.

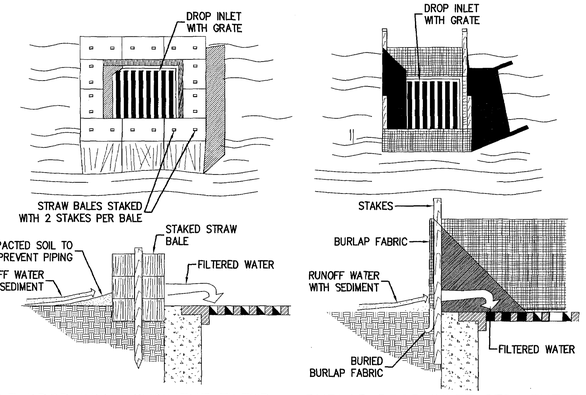


SOURCE: VA. DSWC PLATE. 3.08-1

VDOT #3, #357 OR #5 COARSE AGGREGATE TO REPLACE SILT FENCE IN "HORSESHOE" WHEN HIGH VELOCITY OF FLOW IS EXPECTED

OPTIONAL STONE COMBINATION

N.T.S.

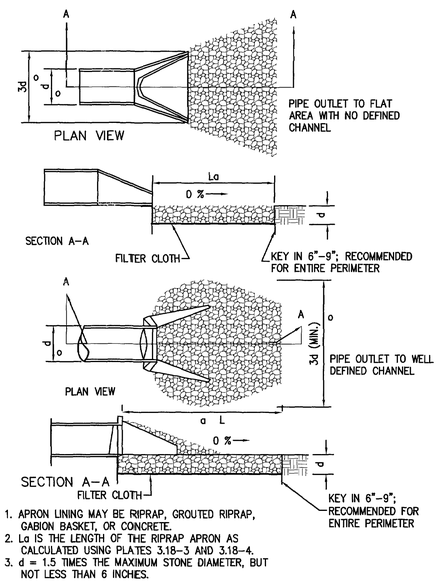


STRAW BALE DROP INLET SEDIMENT FILTER

BURLAP DROP INLET SEDIMENT FILTER

(IP) **INLET PROTECTION**

N.T.S.



NOTES:
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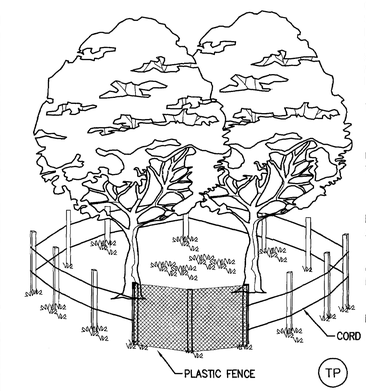
(OP)

SOURCE: VA. DSWC PLATE. 3.18-1

PIPE OUTLET CONDITIONS

N.T.S.



PLASTIC FENCING- 40" HIGH "INTERNATIONAL ORANGE" PLASTIC (POLYETHYLENE) WEB FENCING SECURED TO CONVENTIONAL METAL "T" OR "U" POSTS DRIVEN TO A MINIMUM DEPTH OF 18" ON 6' MINIMUM CENTERS SHALL BE INSTALLED AT THE LIMITS OF CLEARING. THE FENCE SHALL HAVE THE FOLLOWING MINIMUM PHYSICAL QUALITIES:

TENSILE YIELD: AVERAGE 2,000 LBS. PER 4' WIDTH (ASTM D638)

ULTIMATE TENSILE YIELD: AVERAGE 2,900 LBS. PER 4' WIDTH (ASTM D638)

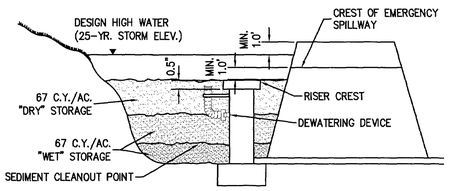
ELONGATION AT BREAK (%): GREATER THAN 1000% (ASTM D638)

CHEMICAL RESISTANCE: INERT TO MOST CHEMICALS AND ACIDS

PLACE FENCE 5' OUTSIDE DRIPLINE

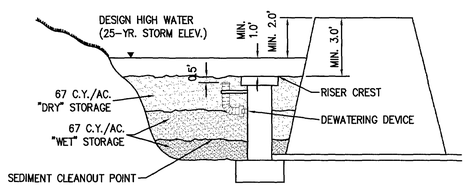
(TP) **TREE PROTECTION**

N.T.S.



("WET" STORAGE REDUCED TO 34 C.Y./ACRE)

DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY



DESIGN ELEVATIONS WITHOUT EMERGENCY SPILLWAY (RISER PASSES 25-YR. EVENT)

(SB)

SOURCE: VA. DSWC PLATE. 3.14-2

SEDIMENT BASIN SCHEMATIC ELEVATIONS

N.T.S.

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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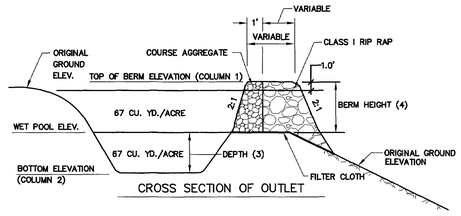
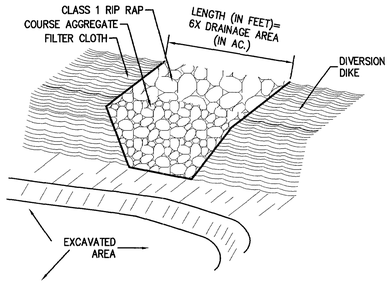
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title: Erosion & Sediment Control Notes & Details

Sheet Number 18



CROSS SECTION OF OUTLET



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OUTLET (PERSPECTIVE VIEW)

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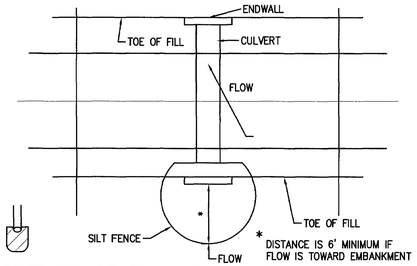
4	110.00	107.00	1.54'	1.46'	8.88	2.5	1.48	2,677	6,336
5	109.00	106.00	1.68'	1.32'	7.62	2.5	1.27	2,297	5,040
6	109.00	108.00	1.75'	1.25'	8.10	2.5	1.35	2,442	5,121

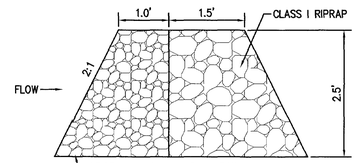
(ST) **SEDIMENT TRAP**

N.T.S.



(CIP) **SILT FENCE CULVERT INLET PROTECTION**

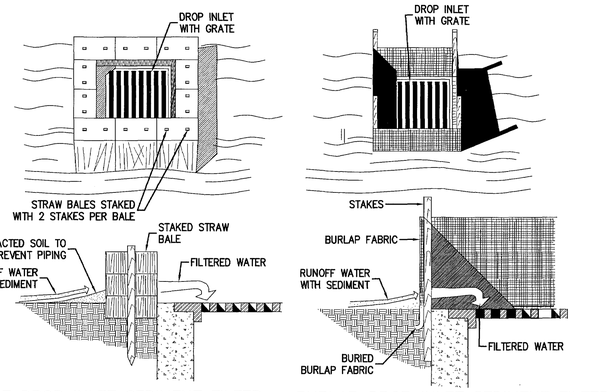
N.T.S.



SOURCE: VA. DSWC PLATE. 3.08-1

OPTIONAL STONE COMBINATION

N.T.S.



STRAW BALE DROP INLET SEDIMENT FILTER — BURLAP DROP INLET SEDIMENT FILTER

(IP) **INLET PROTECTION**

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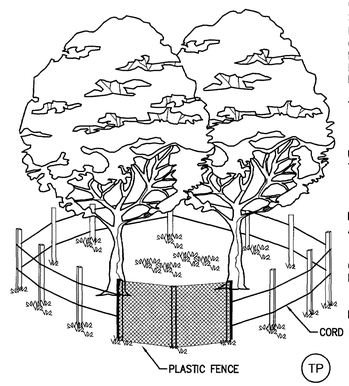

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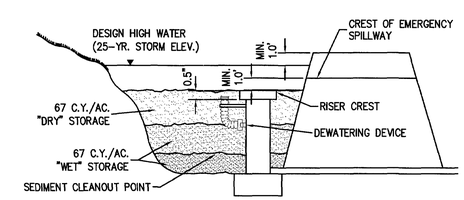
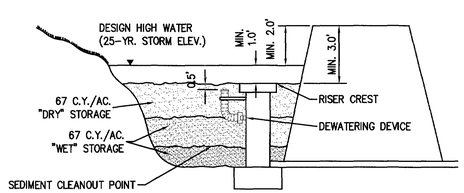


DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY

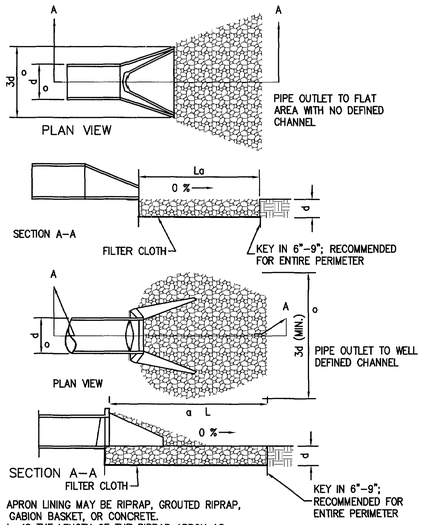


DESIGN ELEVATIONS WITHOUT EMERGENCY SPILLWAY (RISER PASSES 25-YR. EVENT)

(SB) SOURCE: VA. DSWC PLATE. 3.14-2

SEDIMENT BASIN SCHEMATIC ELEVATIONS

N.T.S.



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(OP) SOURCE: VA. DSWC PLATE. 3.18-1

PIPE OUTLET CONDITIONS

N.T.S.

Rev.	Date	Description	Revised By
11	7/26/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised RW Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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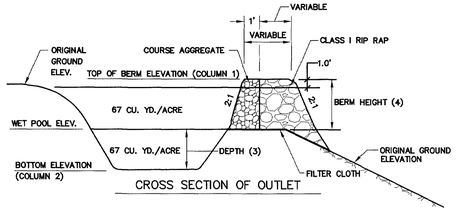
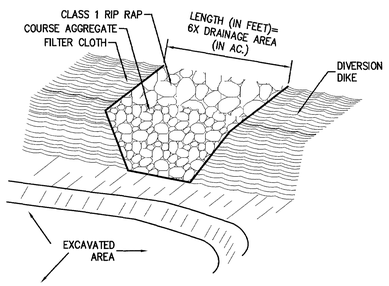


CROSS SECTION OF OUTLET



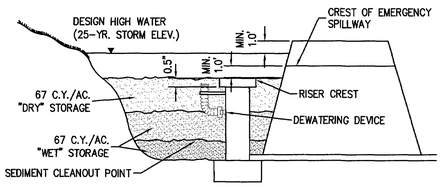
** COARSE AGGREGATE SHALL BE VDOT #3, #357 OR #5

OUTLET (PERSPECTIVE VIEW)

SEDIMENT TRAP #	TOP OF BERM (1)	BOTTOM ELEV. (2)	DEPTH (3)	BERM HEIGHT (4)	LENGTH (FT)	TOP WIDTH (FT)	DRAIN AREA (ACRES)	WET VOLUME (CU. FT.)	TOTAL VOLUME (CU. FT.)
1	110.00	106.00	2.27'	1.73"	10.56	2.5	1.76	3,184	7,416
2	110.00	106.00	2.40'	1.60'	15.12	2.5	2.52	4,565	9,576
3	110.00	106.00	2.48'	1.42'	8.46	2.5	1.41	2,551	5,112
4	110.00	107.00	1.54'	1.46'	8.88	2.5	1.48	2,677	6,336
5	109.00	106.00	1.68'	1.32'	7.62	2.5	1.27	2,297	5,040
6	109.00	106.00	1.75'	1.25'	8.10	2.5	1.35	2,442	5,121

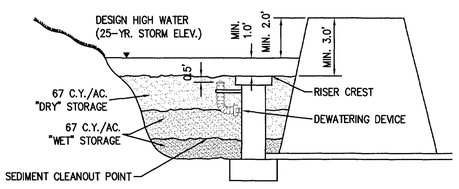
(ST) **SEDIMENT TRAP**

N.T.S.



("WET" STORAGE REDUCED TO 34 C.Y./ACRE)

DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY

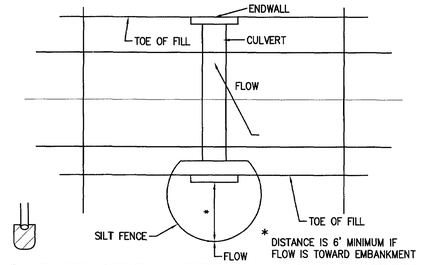


DESIGN ELEVATIONS WITHOUT EMERGENCY SPILLWAY (RISER PASSES 25-YR. EVENT)

(SB) SOURCE: VA. DSWC PLATE. 3.14-2

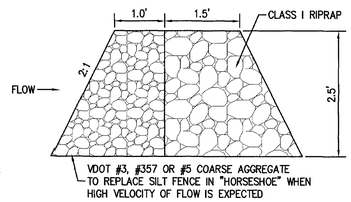
SEDIMENT BASIN SCHEMATIC ELEVATIONS

N.T.S.



(CIP) **SILT FENCE CULVERT INLET PROTECTION**

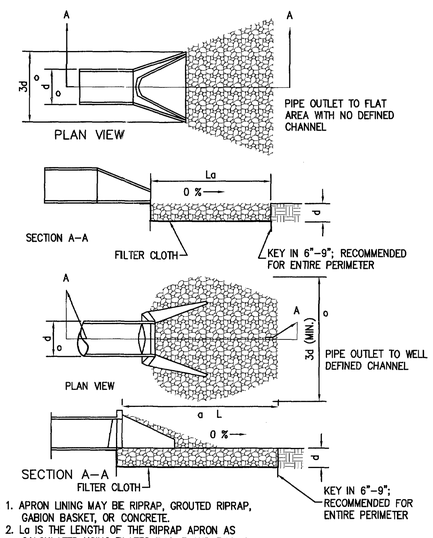
N.T.S.



SOURCE: VA. DSWC PLATE. 3.08-1

OPTIONAL STONE COMBINATION

N.T.S.

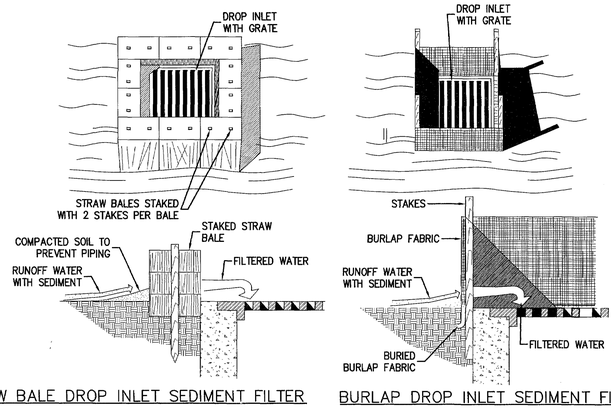


NOTES:
1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. Lo IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

(OP) SOURCE: VA. DSWC PLATE. 3.18-1

PIPE OUTLET CONDITIONS

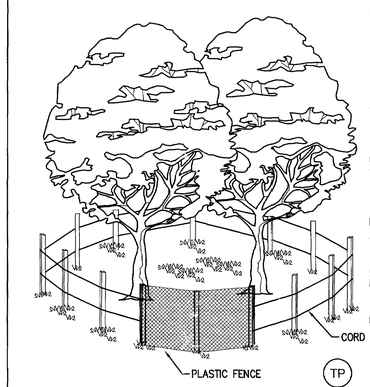
N.T.S.



STRAW BALE DROP INLET SEDIMENT FILTER — BURLAP DROP INLET SEDIMENT FILTER

(IP) **INLET PROTECTION**

N.T.S.



PLASTIC FENCING—40" HIGH "INTERNATIONAL ORANGE" PLASTIC (POLYETHYLENE) WEB FENCING SECURED TO CONVENTIONAL METAL "T" OR "U" POSTS DRIVEN TO A MINIMUM DEPTH OF 18" ON 6' MINIMUM CENTERS SHALL BE INSTALLED AT THE LIMITS OF CLEARING. THE FENCE SHALL HAVE THE FOLLOWING MINIMUM PHYSICAL QUALITIES:

TENSILE YIELD: AVERAGE 2,000 LBS. PER 4' WIDTH (ASTM D638)

ULTIMATE TENSILE YIELD: AVERAGE 2,900 LBS. PER 4' WIDTH (ASTM D638)

ELONGATION AT BREAK (%): GREATER THAN 1000% (ASTM D638)

CHEMICAL RESISTANCE: INERT TO MOST CHEMICALS AND ACIDS

PLACE FENCE 5' OUTSIDE DRIPLINE

(TP) **TREE PROTECTION**

N.T.S.

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
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COMMONWEALTH OF VIRGINIA — MATTHEW J. REMBOLD — Lic. No. 045773 — PROFESSIONAL ENGINEER — 5/27/11

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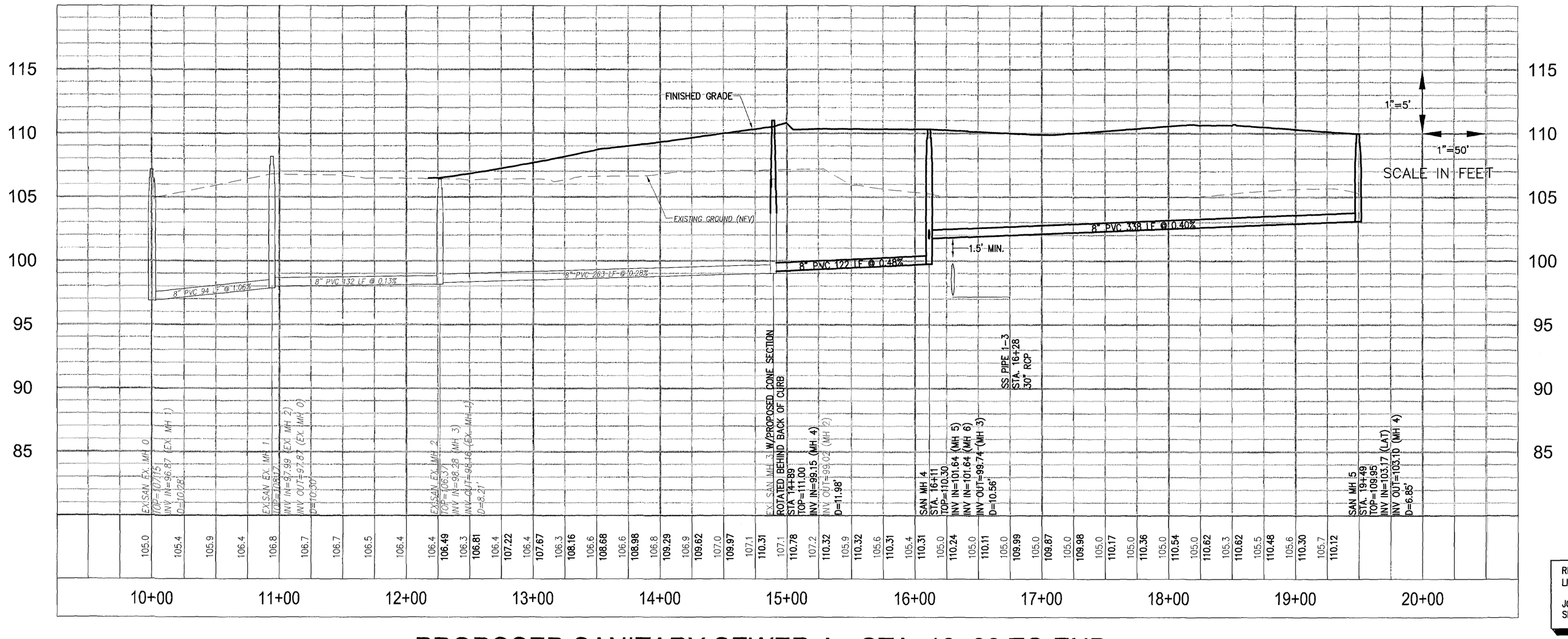
Stonehouse District — James City County — Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title: Erosion & Sediment Control Notes & Details

Sheet Number 18

S:\Jobs\9510\04-The Promenade Design\Build\Engineering\Plans\Phase 2\9510-04c18-e&sc-notes.dwg, 5/27/2011 8:27:52 AM, matt.short

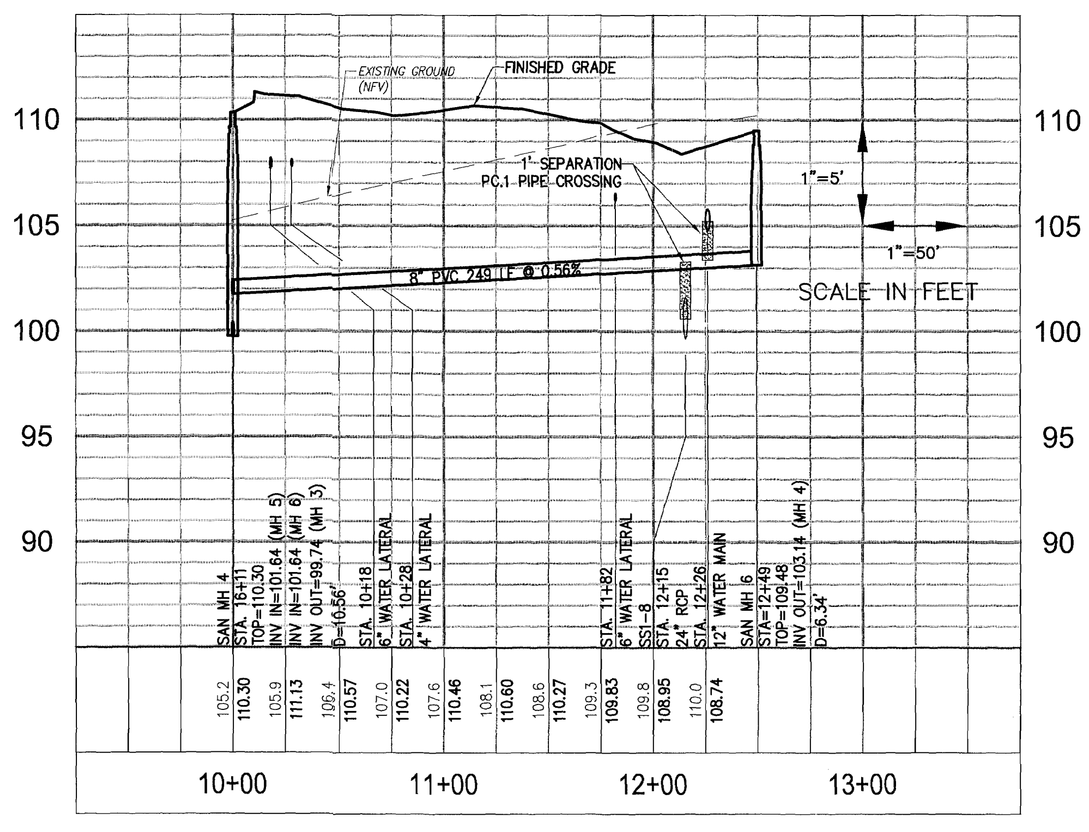


PROPOSED SANITARY SEWER A - STA. 10+00 TO END

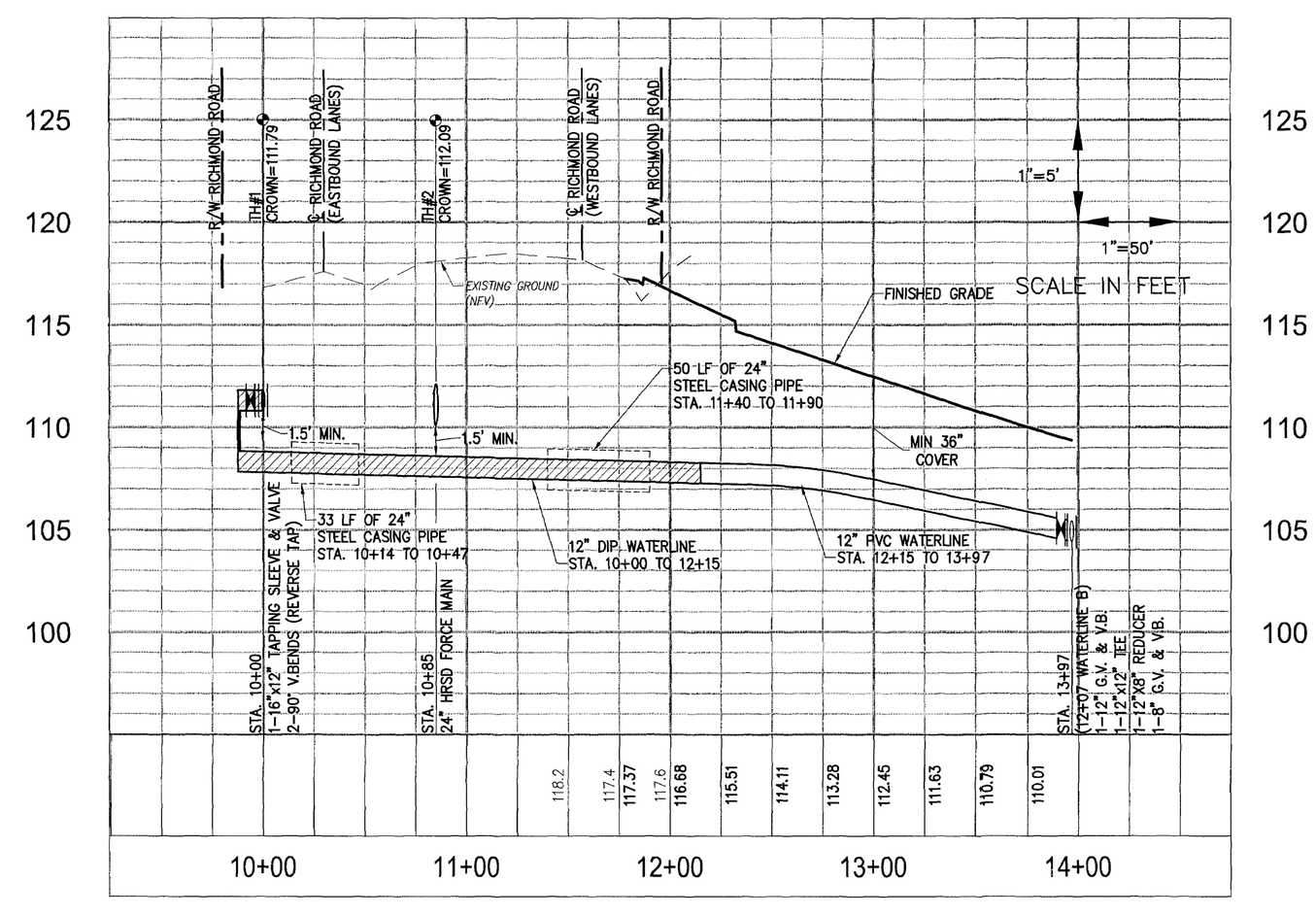
ANY WATER LINE INSTALLED IN A FILL AREA SHALL BE RESTRAINED JOINT PIPE.

REQUIRED JOINT RESTRAINT FOR DIP WATER LINE FITTINGS. (SEE SHEET 21)

JOINT RESTRAINT TO BE PROVIDED ON BOTH SIDES OF ALL LOOPED LINES.



PROPOSED SANITARY SEWER B - STA. 10+00 TO END



PROPOSED WATERLINE A - STA. 10+00 TO END

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
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1	10/20/10	Revised for Staff Comments	MJR

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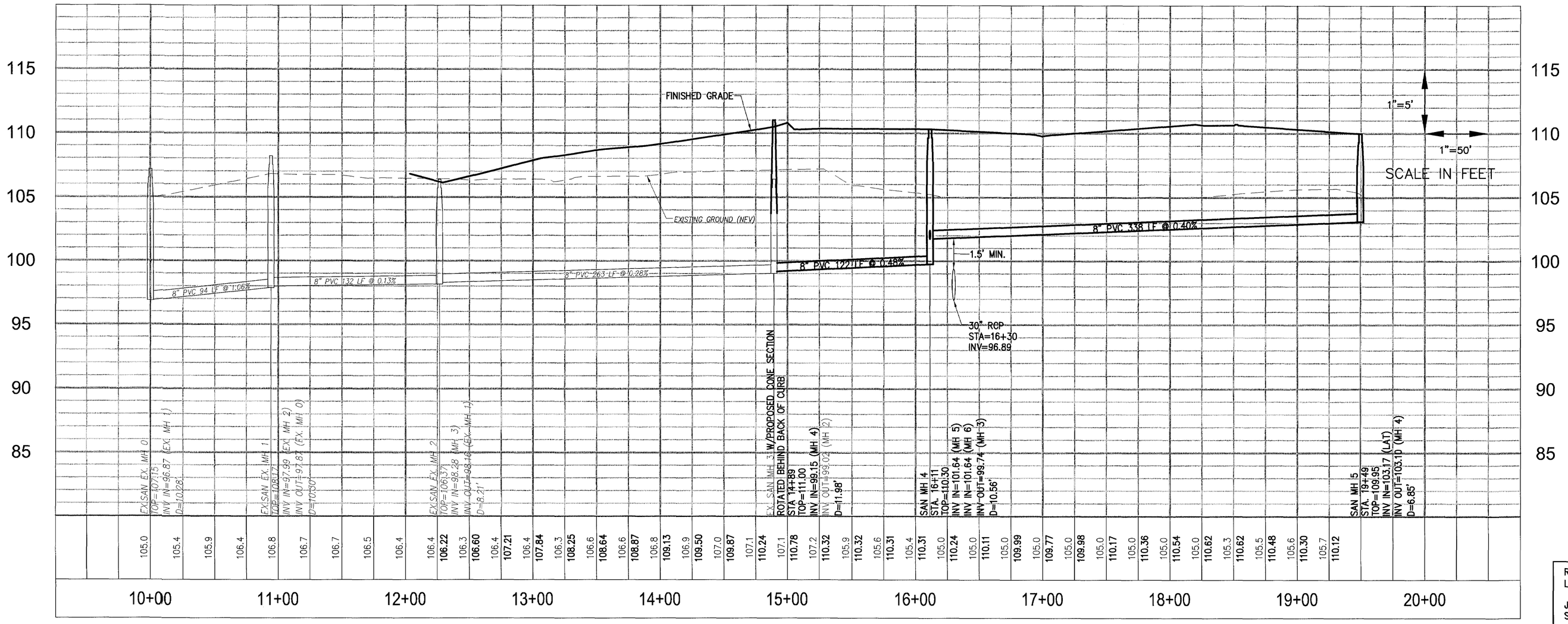
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: Noted	Date: 9/3/2010
Sheet Title:	Utility Profiles
Sheet Number	19



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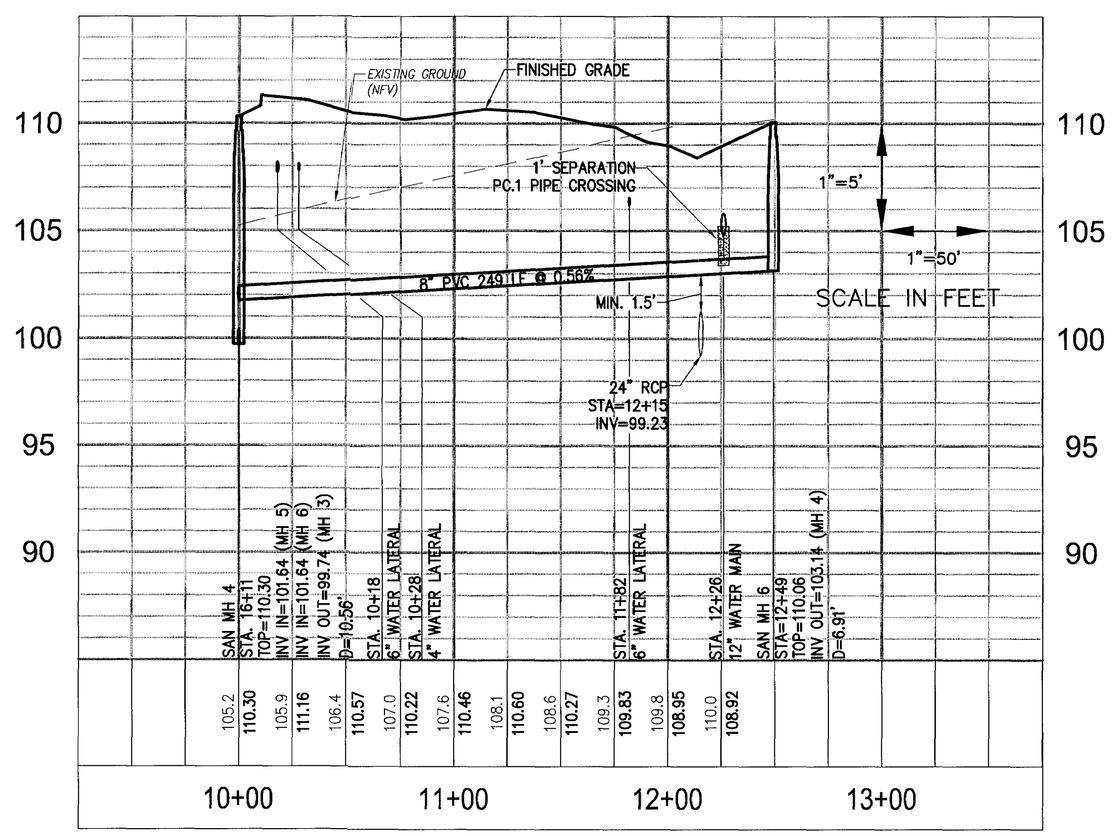
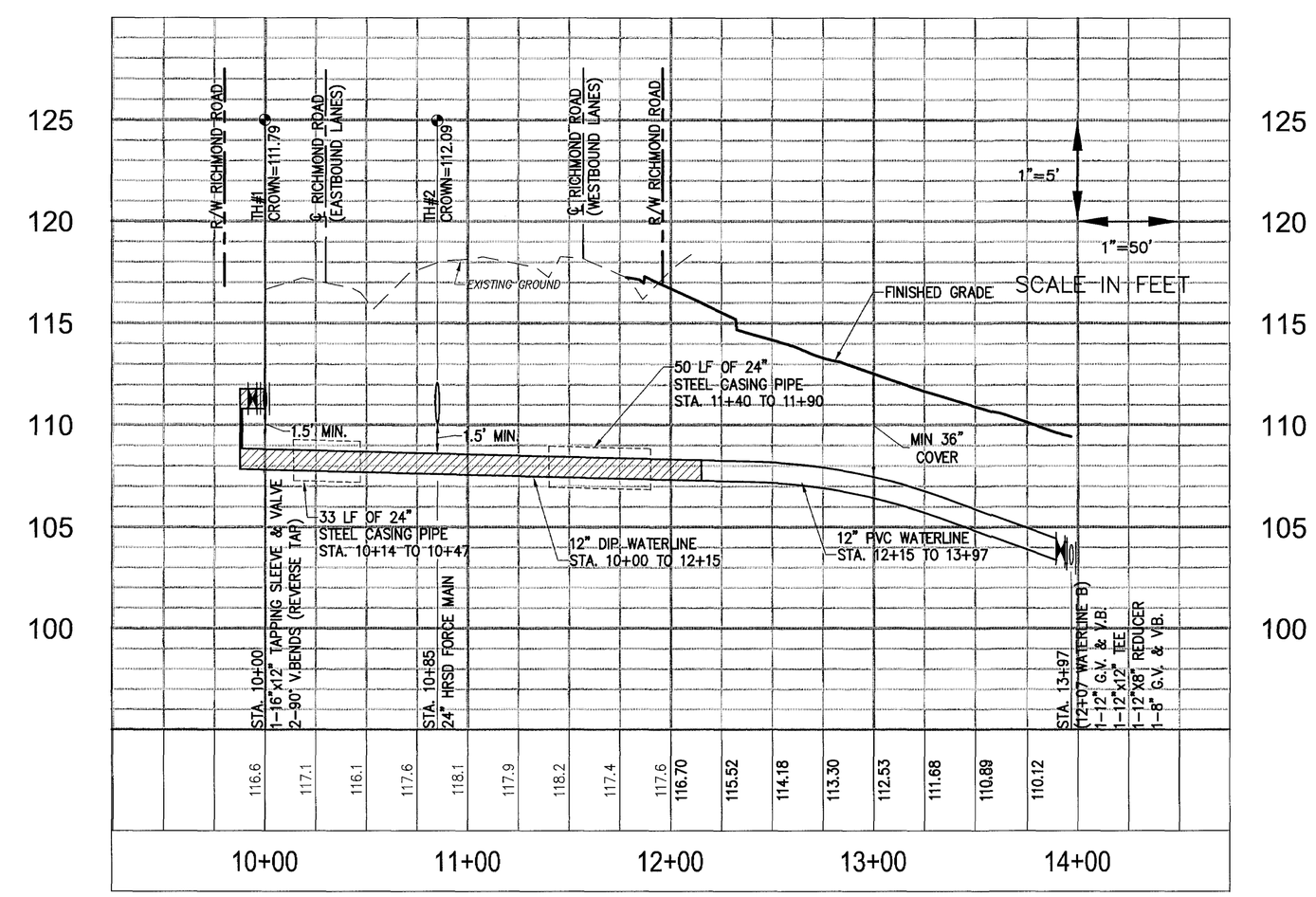


PROPOSED SANITARY SEWER B - STA. 10+00 TO END



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Sheet Title:
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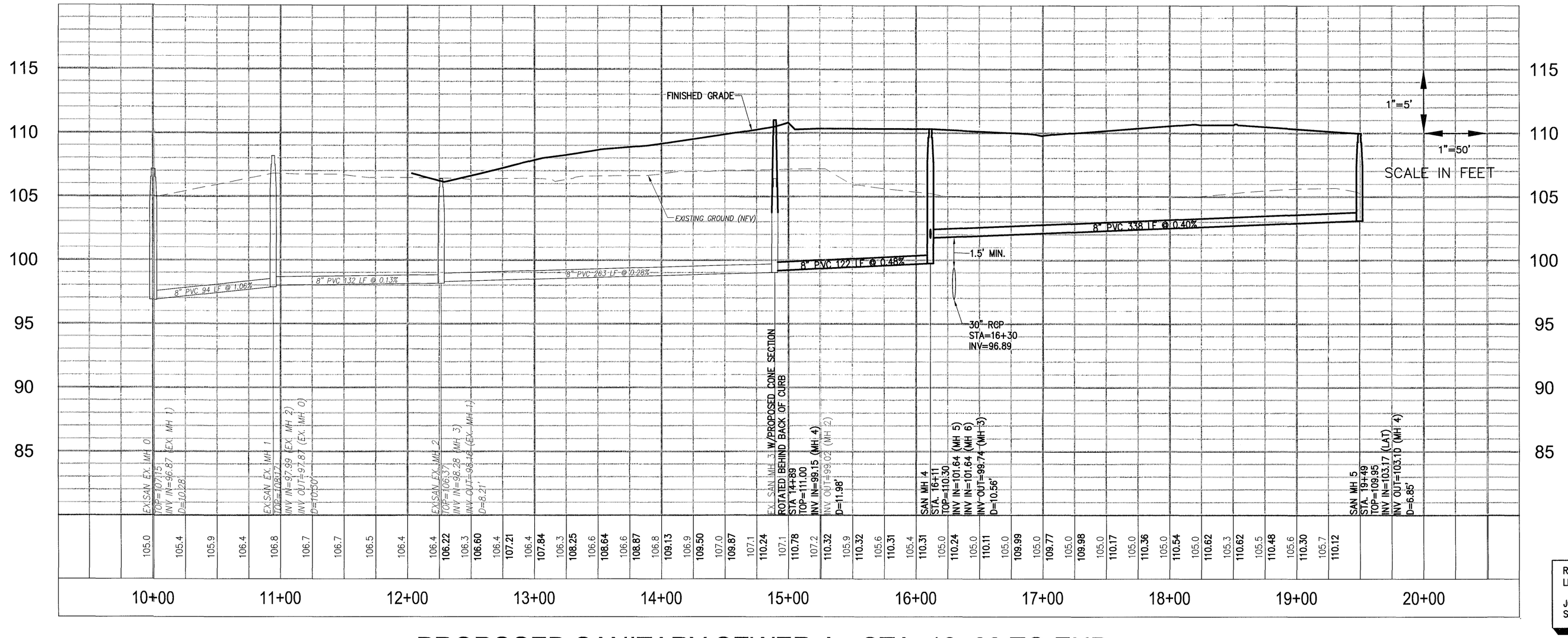

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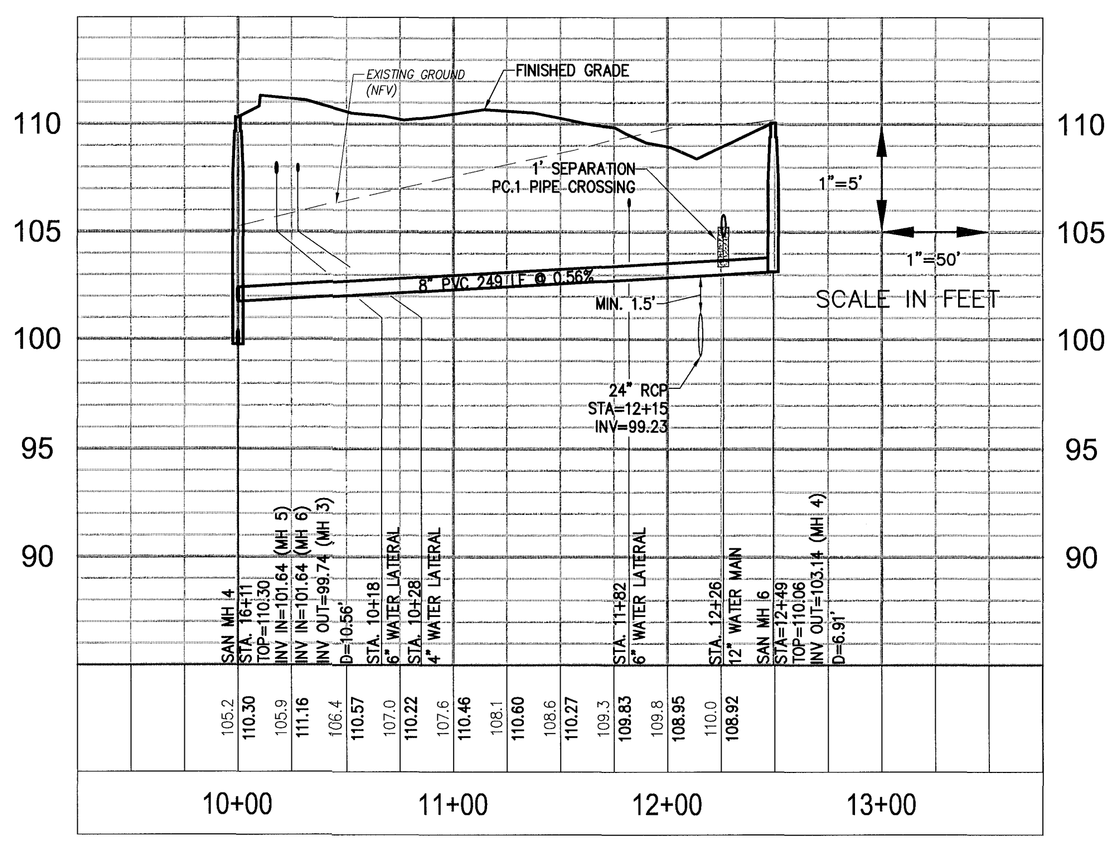

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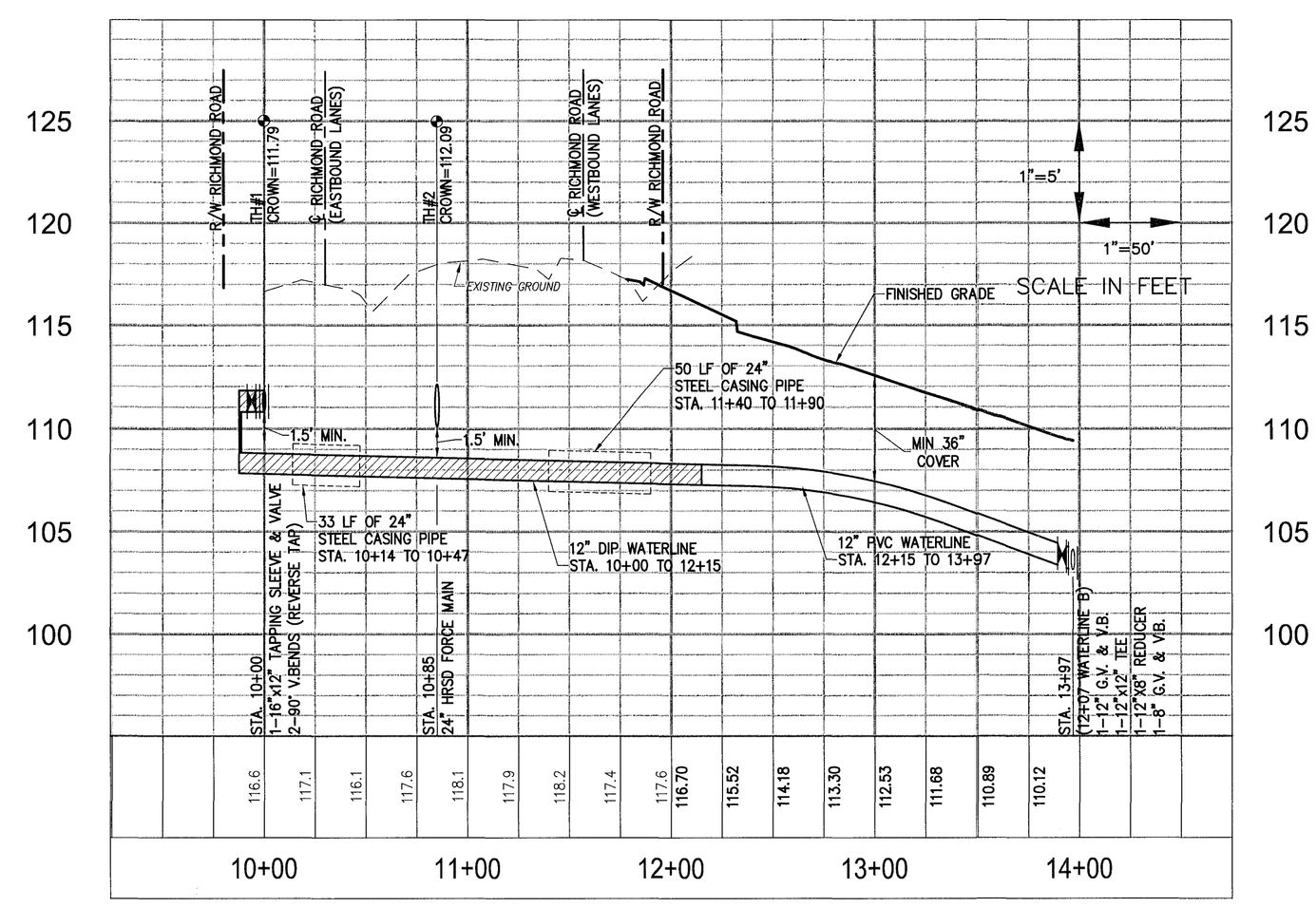

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Scale: Noted	Date: 9/3/2010
Sheet Title: Utility Profiles	

Sheet Number
19

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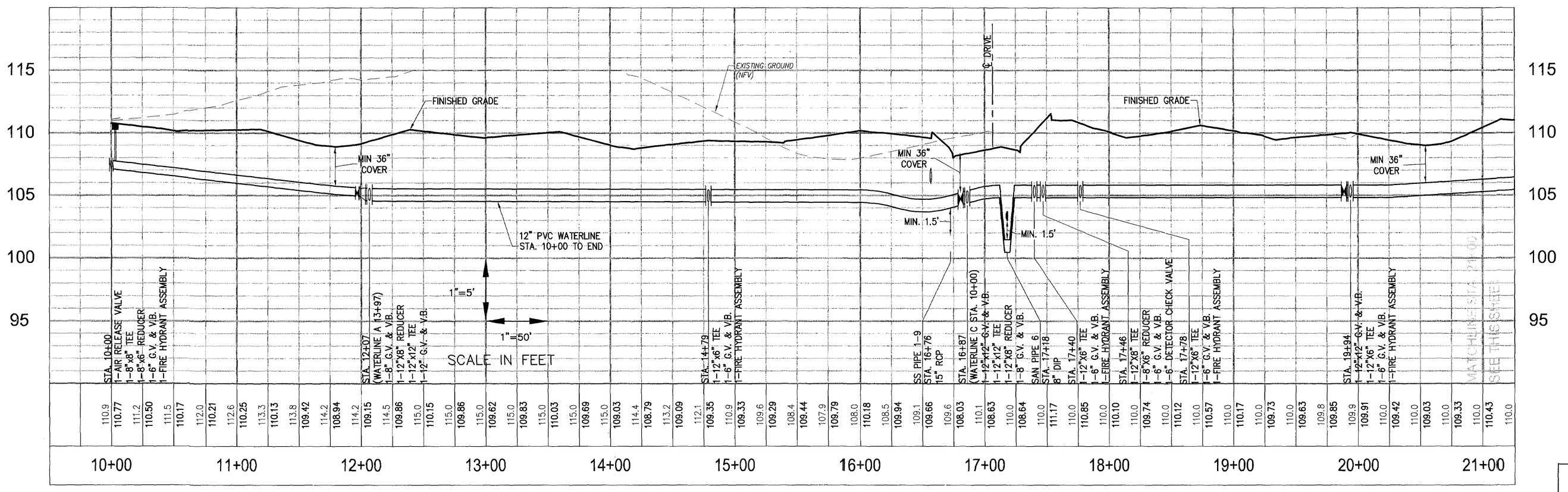

PROPOSED WATERLINE B - STA. 10+00 TO 21+00

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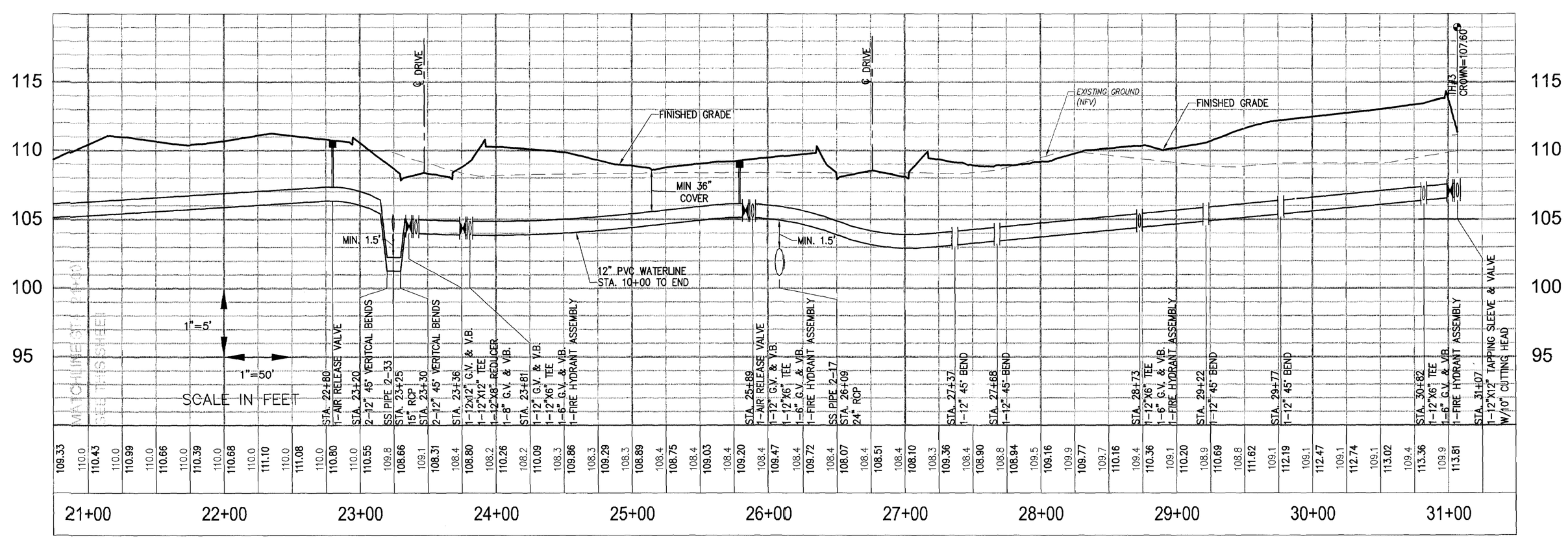

PROPOSED WATERLINE B - STA. 21+00 TO END

Rev.	Date	Description	Revised By
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
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2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Sheet Title:
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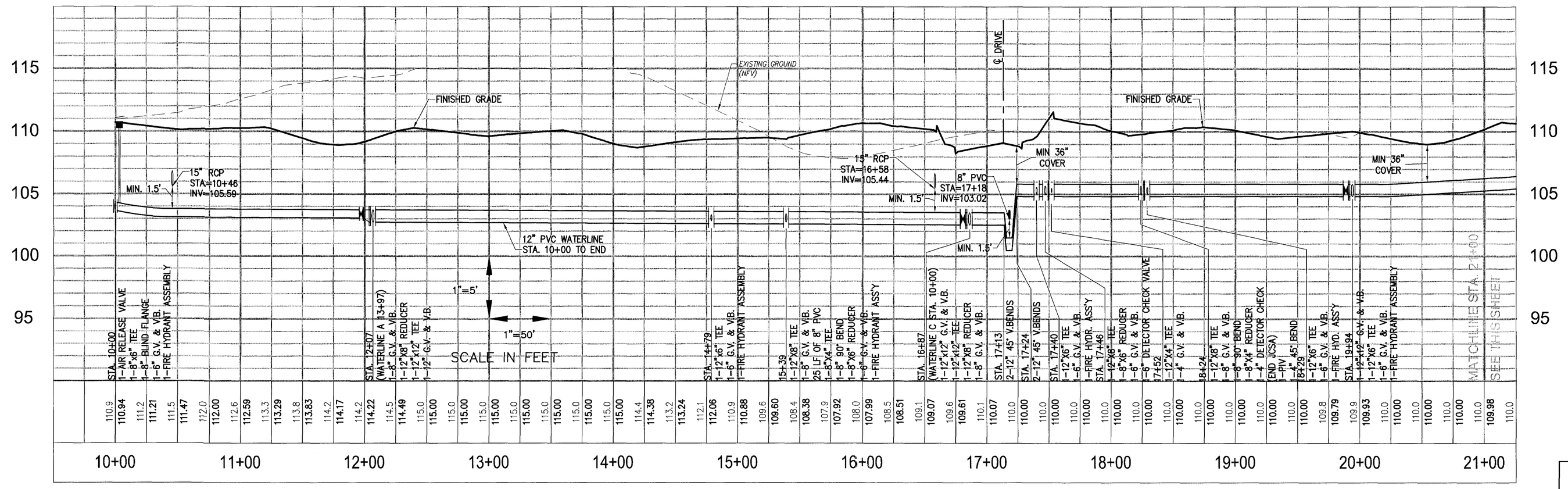
20



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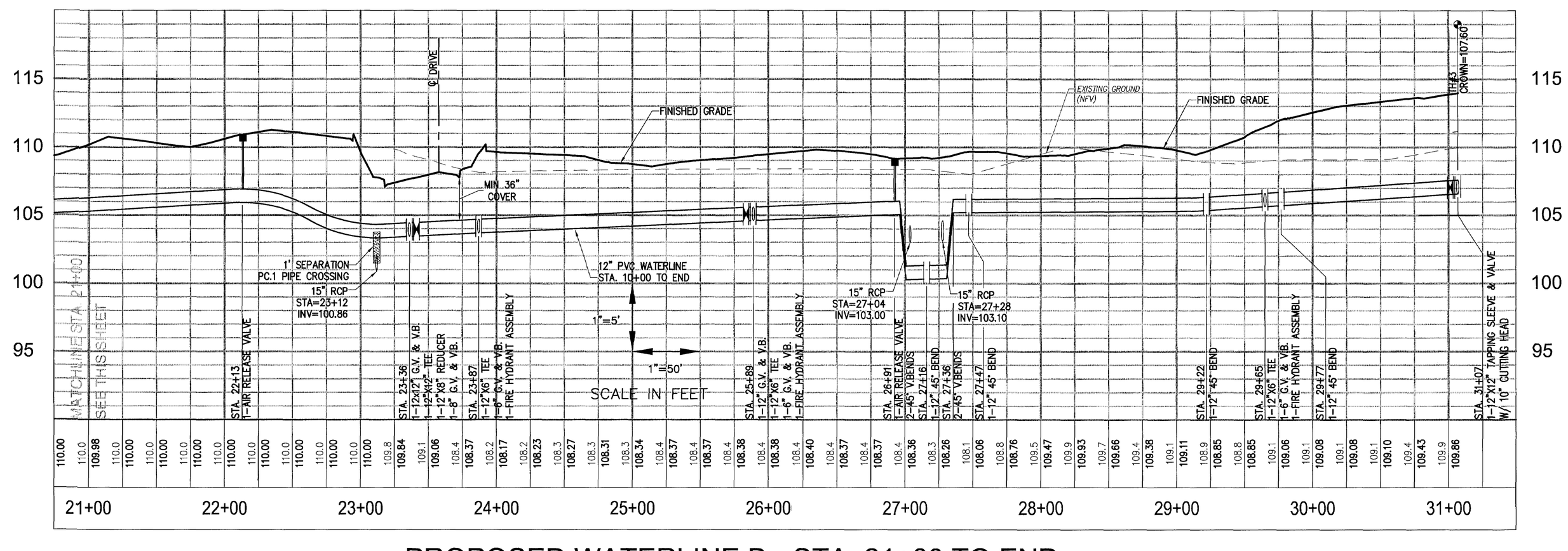

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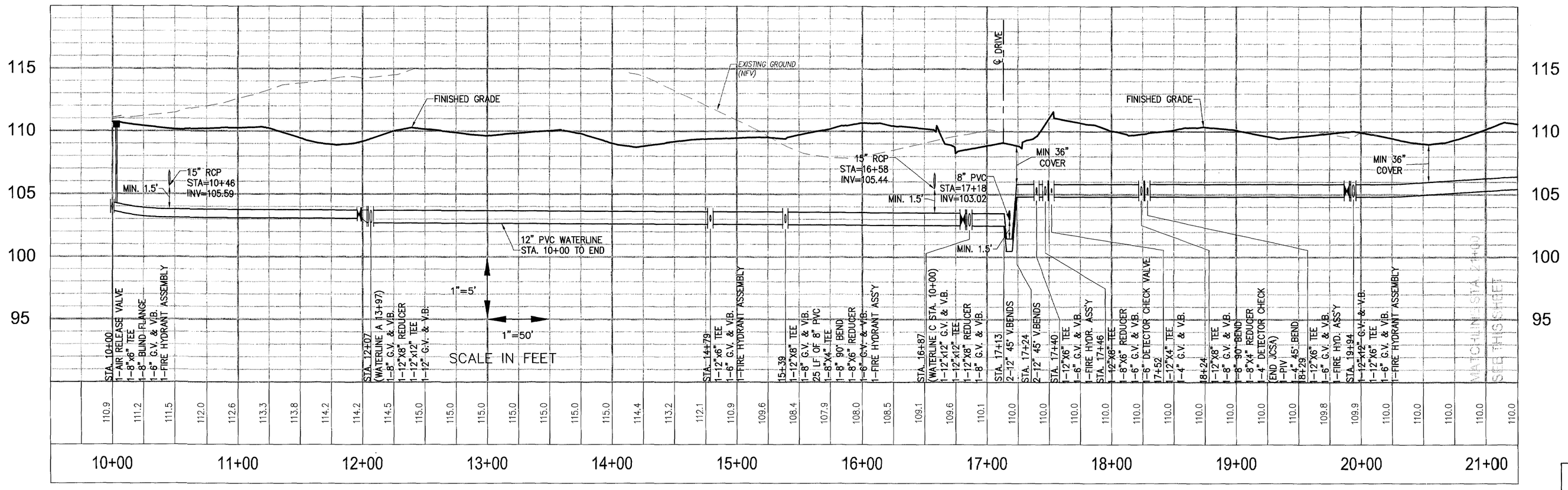
20



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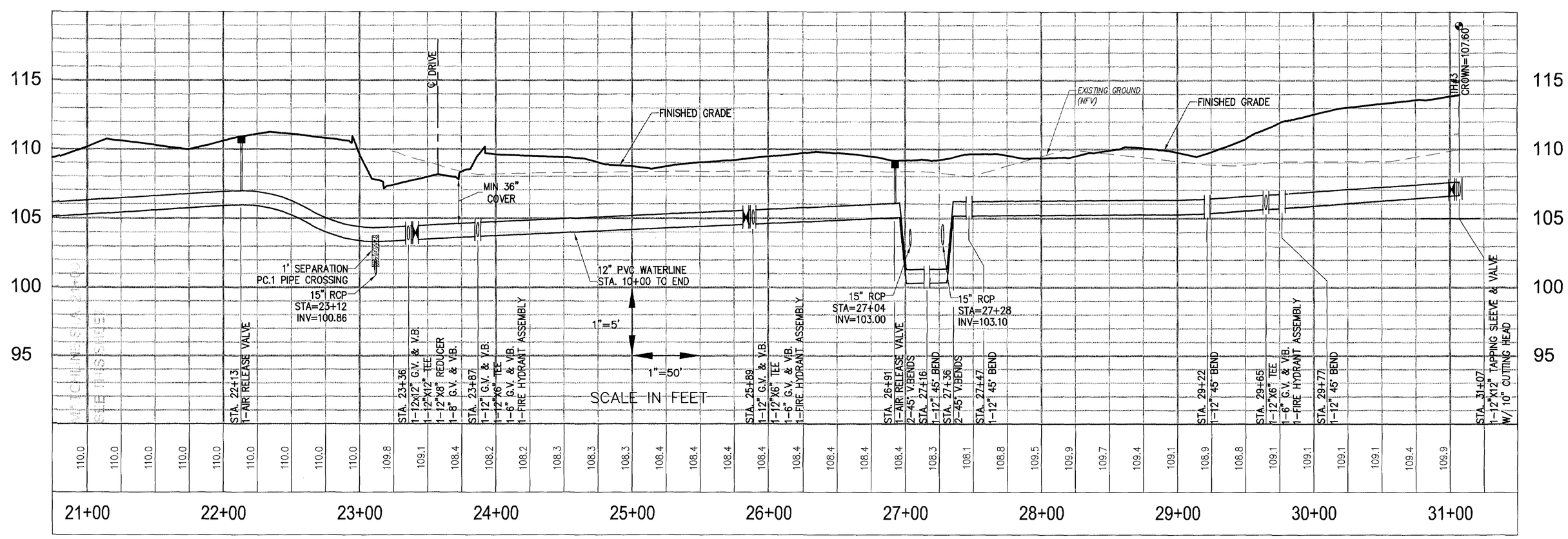

PROPOSED WATERLINE B - STA. 21+00 TO END

Rev.	Date	Description	Revised By
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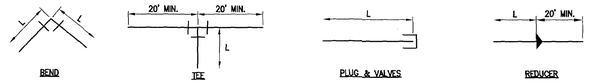

NOTE: L = CORRESPONDING LENGTH BELOW

RESTRAINED JOINT LENGTHS FOR WATER LINE FITTINGS

FITTING	11.25°	22.5°	45°	90°	PLUG/VALVE	REDUCER
8" HORIZONTAL	4'	8'	16'	38'	80'	–
12" HORIZONTAL	5'	11'	22'	53'	113'	–
16x12	–	–	–	–	–	61'
12x12	–	–	–	–	–	–
12x8	–	–	–	–	–	60'
12x6	–	–	–	–	–	82'
8x8	–	–	–	–	–	–
8x6	–	–	–	–	–	33'
8" VERTICAL	8'	16'	33'	80'	–	–
12" VERTICAL	11'	22'	47'	113'	–	–

ASSUME: 150 PSI TEST PRESSURE
LAYING CONDITION 3
BARE PIPE (NO POLYETHYLENE WRAP)
SILT 2 SOILS
3' MIN. COVER
1.5 SAFETY FACTOR

RESTRAINED JOINT LENGTHS FIRE LINE FITTINGS

FITTING	11.25°	22.5°	45°	90°	DEAD END/G.V./ BLOWOFF	8" x _ TEE	6" x _ TEE	4" x _ TEE
8" HORIZONTAL	5'	10'	21'	51'	106'	95'	–	–
6" HORIZONTAL	4'	8'	16'	40'	82'	68'	72'	–
4" HORIZONTAL	3'	6'	12'	28'	58'	37'	42'	47'

ASSUME: 200 PSI TEST PRESSURE
DUCTILE IRON PIPE
BARE PIPE (NO POLYETHYLENE WRAP)
LAYING CONDITION 3
SILT 2 SOILS
3' MIN. COVER

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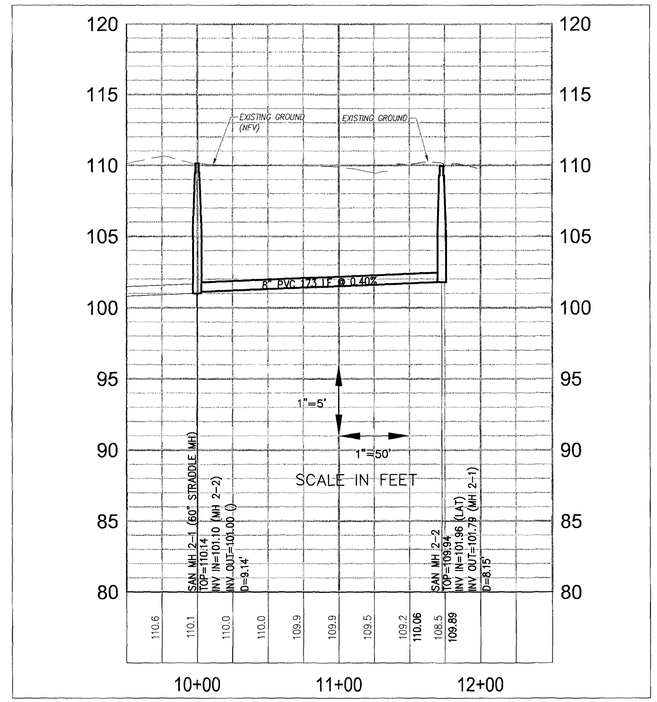
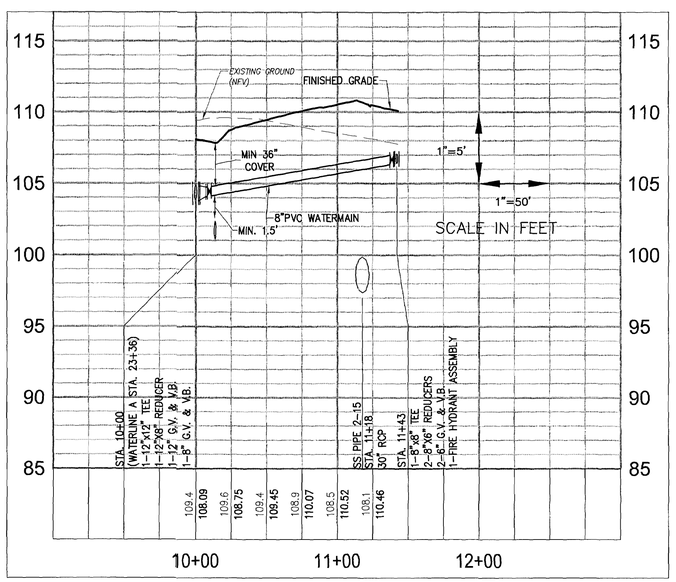
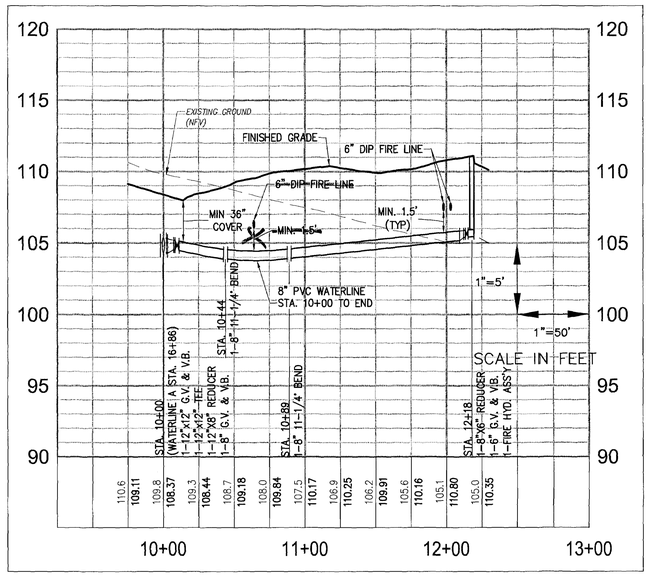
JOINT RESTRAINT TO BE PROVIDED ON BOTH SIDES OF ALL LOOPED LINES.



PROPOSED SANITARY SEWER C - STA. 10+00 TO END



PROPOSED WATERLINE D - STA. 10+00 TO END



PROPOSED WATERLINE C - STA. 10+00 TO END

Rev.	Date	Description	Revised by
4	3/2/2011	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/15/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
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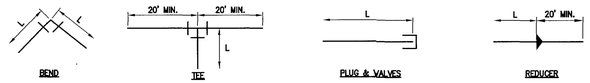


NOTE: L = CORRESPONDING LENGTH BELOW

RESTRAINED JOINT LENGTHS FOR WATER LINE FITTINGS

FITTING	11.25°	22.5°	45°	90°	PLUG/VALVE	REDUCER
8" HORIZONTAL	4'	8'	16'	38'	80'	–
12" HORIZONTAL	5'	11'	22'	53'	113'	–
16x12	–	–	–	–	–	61'
12x12	–	–	–	–	–	–
12x8	–	–	–	–	–	60'
12x6	–	–	–	–	–	82'
8x8	–	–	–	–	–	–
8x6	–	–	–	–	–	33'
8" VERTICAL	8'	16'	33'	80'	–	–
12" VERTICAL	11'	22'	47'	113'	–	–

ASSUME: 150 PSI TEST PRESSURE
LAYING CONDITION 3
BARE PIPE (NO POLYETHYLENE WRAP)
SILT 2 SOILS
3' MIN. COVER
1.5 SAFETY FACTOR

RESTRAINED JOINT LENGTHS FIRE LINE FITTINGS

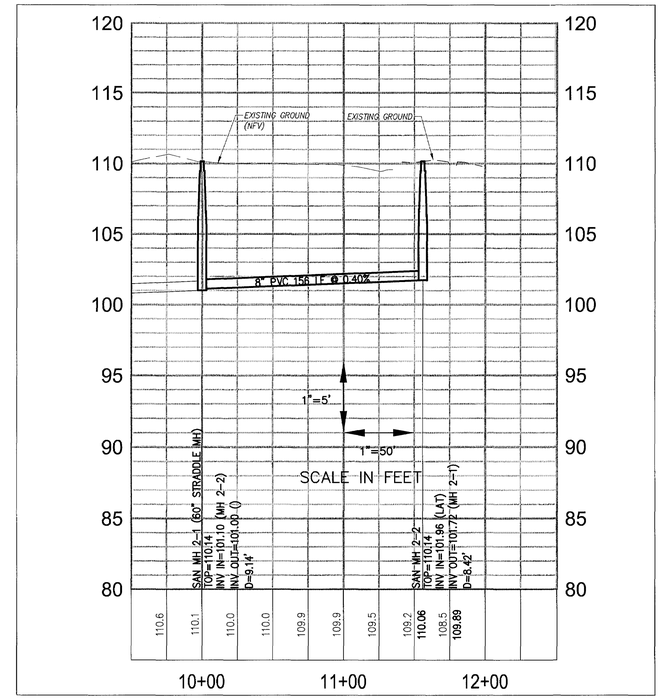
FITTING	11.25°	22.5°	45°	90°	DEAD END/G.V./ BLOWOFF	8" x _ TEE	6" x _ TEE	4" x _ TEE
8" HORIZONTAL	5'	10'	21'	51'	106'	95'	–	–
6" HORIZONTAL	4'	8'	16'	40'	82'	68'	72'	–
4" HORIZONTAL	3'	6'	12'	28'	58'	37'	42'	47'

ASSUME: 200 PSI TEST PRESSURE
DUCTILE IRON PIPE
BARE PIPE (NO POLYETHYLENE WRAP)
LAYING CONDITION 3
SILT 2 SOILS
3' MIN. COVER

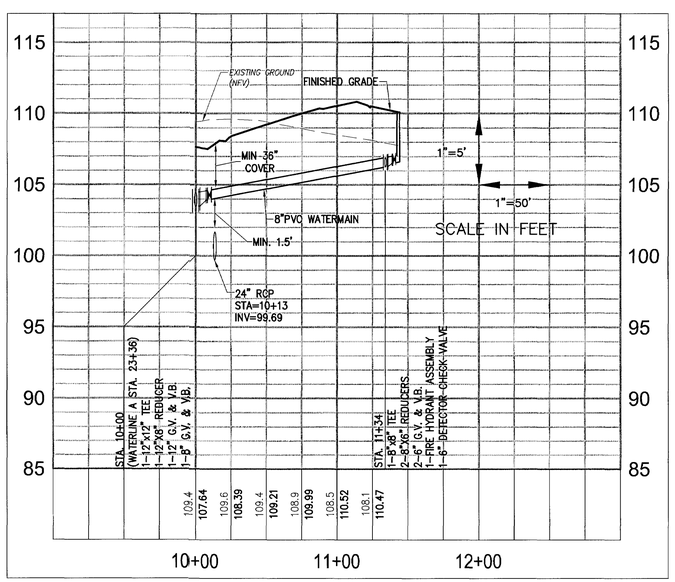
ANY WATER LINE INSTALLED IN A FILL AREA SHALL BE RESTRAINED JOINT PIPE.

REQUIRED JOINT RESTRAINT FOR DIP WATER LINE FITTINGS.

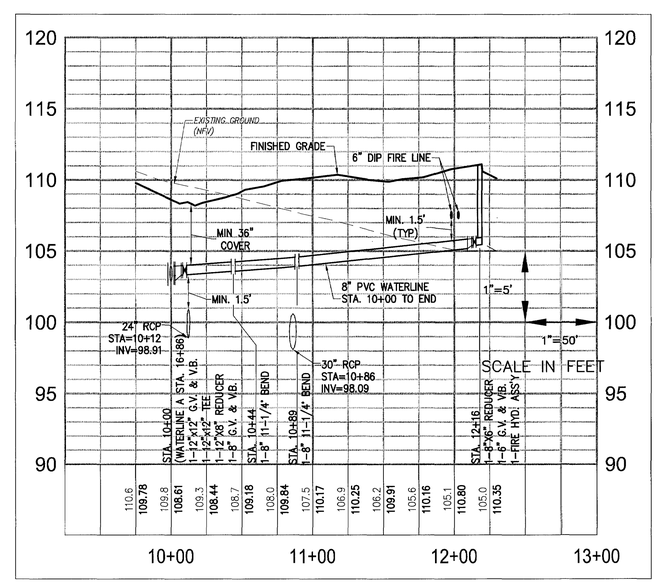
JOINT RESTRAINT TO BE PROVIDED ON BOTH SIDES OF ALL LOOPED LINES.



PROPOSED SANITARY SEWER C - STA. 10+00 TO END



PROPOSED WATERLINE D - STA. 10+00 TO END



PROPOSED WATERLINE C - STA. 10+00 TO END

Rev.	Date	Description	Reviewed By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GBR
8	10/07/11	Hardscape Detail Revision Per Client	GBR
7	9/9/11	Revised R/W Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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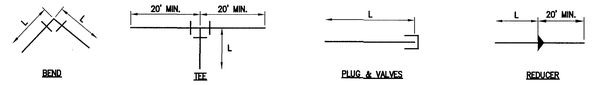
21



NOTE: L = CORRESPONDING LENGTH BELOW

RESTRAINED JOINT LENGTHS FOR WATER LINE FITTINGS

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12" HORIZONTAL	5'	11'	22'	53'	113'	–
16x12	–	–	–	–	–	61'
12x12	–	–	–	–	–	–
12x8	–	–	–	–	–	60'
12x6	–	–	–	–	–	82'
8x8	–	–	–	–	–	–
8x6	–	–	–	–	–	33'
8" VERTICAL	8'	16'	33'	80'	–	–
12" VERTICAL	11'	22'	47'	113"	–	–

ASSUME: 150 PSI TEST PRESSURE
LAYING CONDITION 3
BARE PIPE (NO POLYETHYLENE WRAP)
SILT 2 SOILS
3' MIN. COVER
1.5 SAFETY FACTOR

RESTRAINED JOINT LENGTHS FIRE LINE FITTINGS

FITTING	11.25°	22.5°	45°	90°	DEAD END/G.V./ BLOWOFF	8" x _ TEE	6" x _ TEE	4" x _ TEE
8" HORIZONTAL	5'	10'	21'	51'	106'	95'	–	–
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4" HORIZONTAL	3'	6'	12'	28'	58'	37'	42'	47'

ASSUME: 200 PSI TEST PRESSURE
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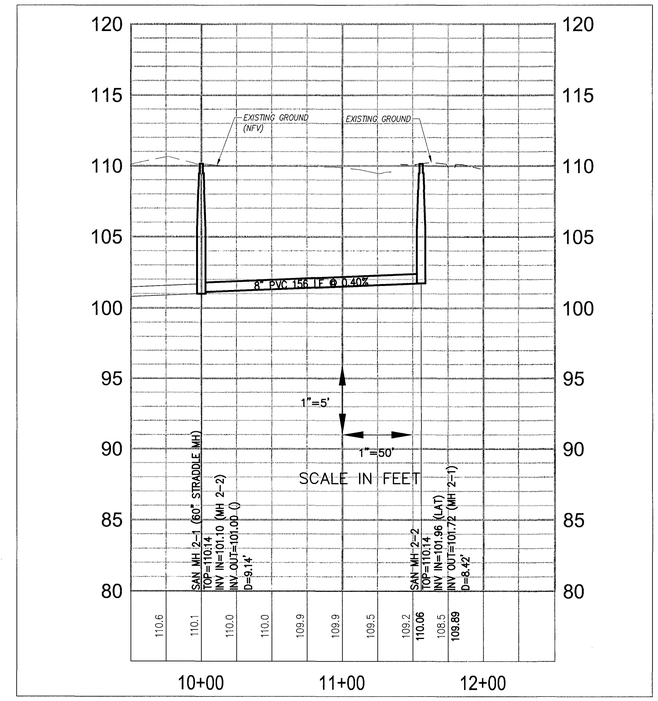
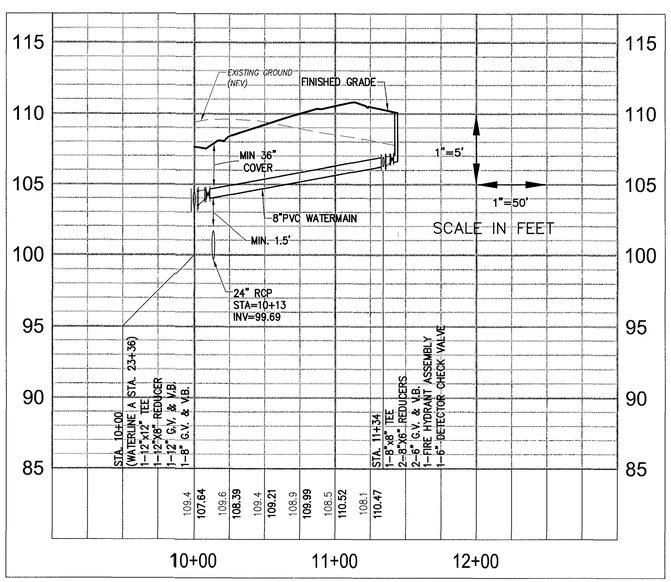
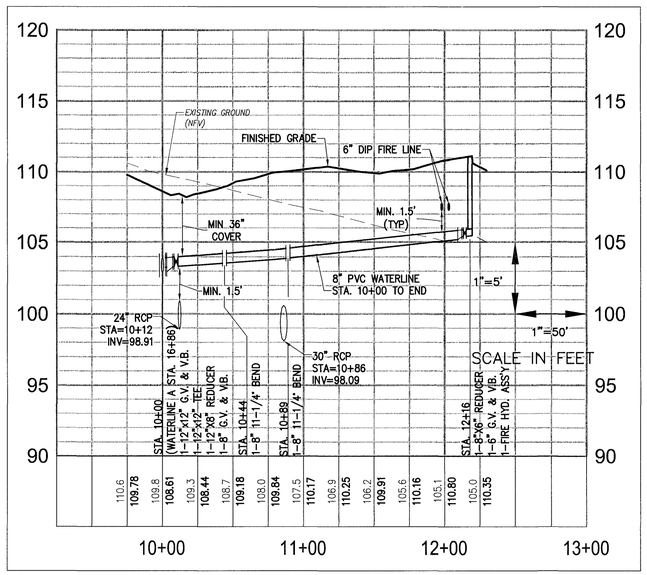


PROPOSED SANITARY SEWER C - STA. 10+00 TO END



PROPOSED WATERLINE D - STA. 10+00 TO END



PROPOSED WATERLINE C - STA. 10+00 TO END

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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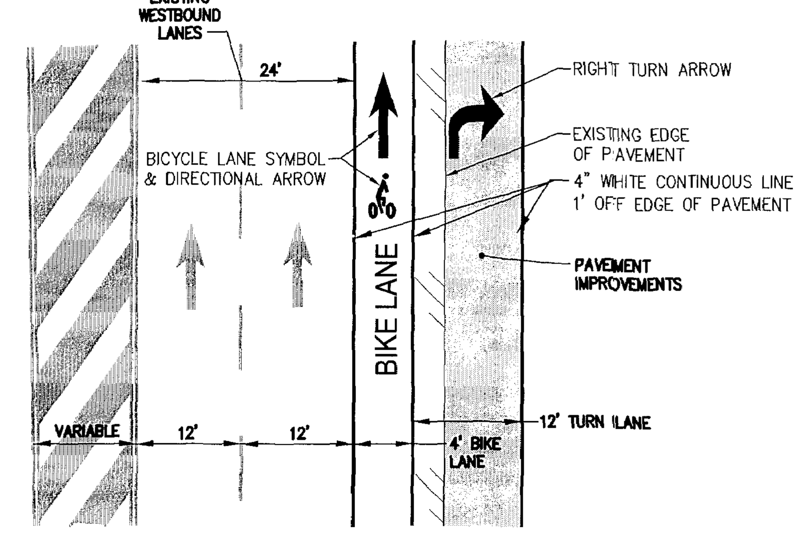
RICHMOND ROAD LANE CONFIGURATION

N.T.S.

NOTE:
CONTACT MR. SAL SIBLIA AT (757) 925-1679, 72 HOURS IN ADVANCE OF ALL PAVEMENT MARKINGS/SIGN INSTALLATIONS. FAILURE TO DO SO MAY RESULT IN ADDITIONAL COSTS TO THE DEVELOPER.



NOTE:
ERADICATE EXISTING CONFLICTING PAVEMENT MARKINGS

STATIONARY OPERATION ON SHOULDER

N.T.S.

TYPICAL TRAFFIC CONTROL
STATIONARY OPERATION ON SHOULDER
NOTES

1. ON DIVIDED HIGHWAYS HAVING A MEDIAN WIDER THAN 8', LEFT AND RIGHT SIGN ASSEMBLIES SHALL BE REQUIRED.
2. SIGN SPACING DISTANCE SHOULD BE 1000'-1500' FOR LIMITED ACCESS HIGHWAYS, AND ON ALL OTHER ROADWAYS 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.
3. CONE SPACING SHALL BE AT THE FOLLOWING:

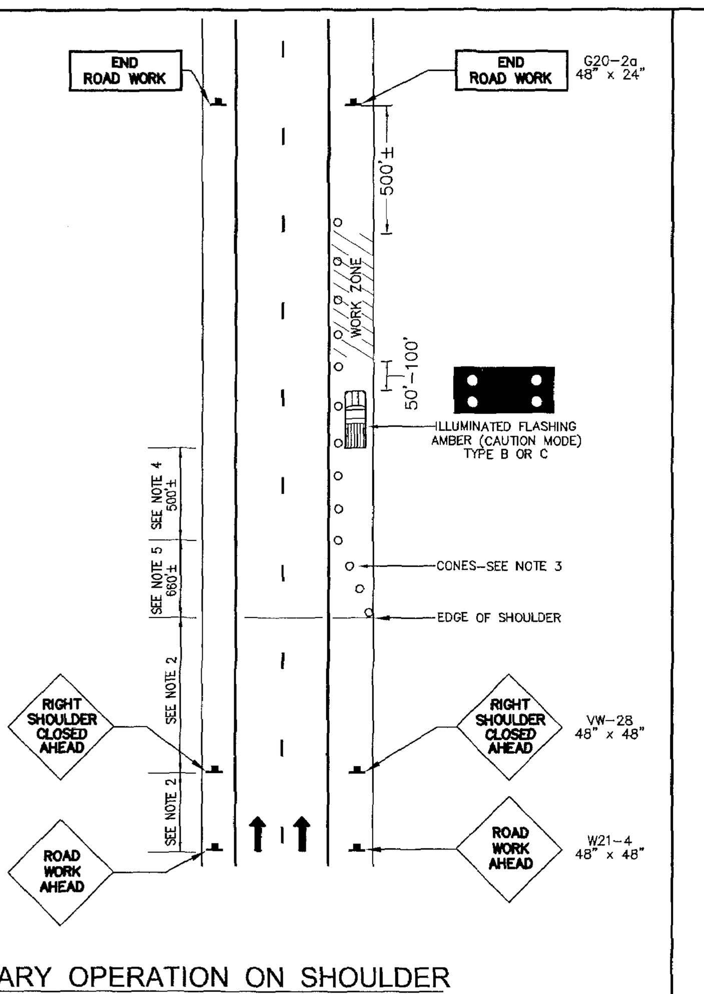
LOCATION	SPEED (MPH) 0-35	36+
TRANSITION SPACING	20'	40'
TRAVELWAY SPACING	40'	80'

4. THE BUFFER SPACE LENGTH SHALL BE 500'± FOR POSTED SPEEDS OF 45 MPH AND GREATER, AND 200'± FOR POSTED SPEEDS LESS THAN 45 MPH.
5. CONE TAPER LENGTH (L):

SPEED LIMIT M.P.H.	TAPER LENGTH LANE WIDTH IN FEET 10	11	12
25	105	115	125
30	150	165	180
35	205	225	245
40	270	295	320
45	450	495	540
50	500	550	600
55	550	605	660
60	600	660	770
65	650	715	780

THE MINIMUM LENGTH FOR A SHOULDER TAPER IS 300' ON LIMITED ACCESS HIGHWAYS, AND 1/3 L FOR ALL OTHER ROADWAYS.

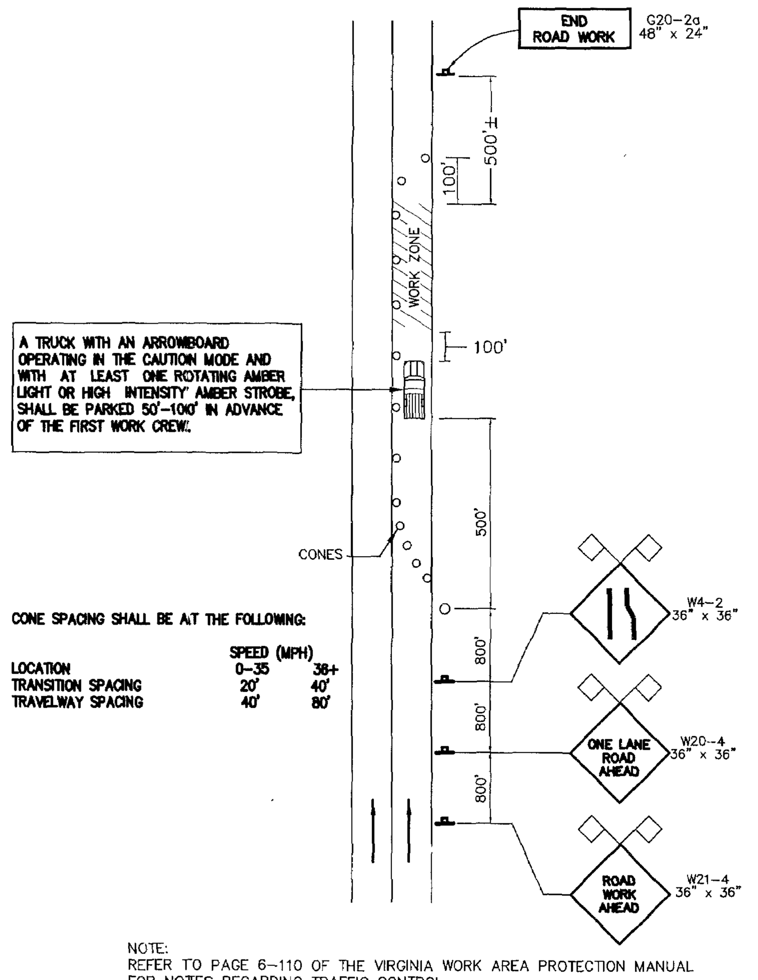
6. A VEHICLE WITH EITHER AN ARROW BOARD OPERATING IN THE CAUTION MODE, OR AT LEAST ONE ROTATING AMBER LIGHT OR ALTERNATING HIGH INTENSITY AMBER STROBE LIGHT SHALL BE PARKED 50'-100' IN ADVANCE OF THE FIRST WORK CREW.



STATIONARY OPERATION ON SHOULDER

FIGURE TTC-3.0
N.T.S.

D-TRCON-5



CONE SPACING SHALL BE AT THE FOLLOWING:

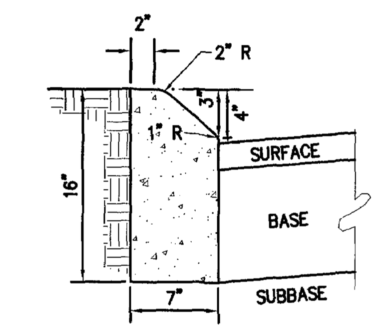
LOCATION	SPEED (MPH) 0-35	36+
TRANSITION SPACING	20'	40'
TRAVELWAY SPACING	40'	80'

NOTE:
REFER TO PAGE 6-110 OF THE VIRGINIA WORK AREA PROTECTION MANUAL FOR NOTES REGARDING TRAFFIC CONTROL.

TRAFFIC CONTROL SIGNAGE DETAIL

D-TRCON-1

CG-3



STANDARD 4" CURB

N.T.S.

NOTES
THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

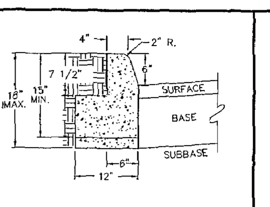
CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

CURB HAVING A RADIUS OF 300'. OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB.

WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS.

THIS CURB TO BE USED WHEN DESIGN SPEED IS 40 MPH OR LESS ON RURAL HIGHWAYS AND 45 MPH OR LESS IN URBAN AND SUBURBAN AREAS.

THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (13" DEPTH) OR INCREASED AS MUCH AS 3" (19" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE THE DEPTH IS TO BE 16" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.

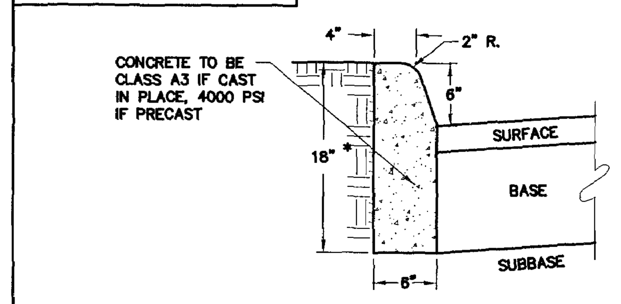


ACCEPTABLE ALTERNATE IF CURB IS EXTRUDED

CG-2

NOTE: CURB HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB

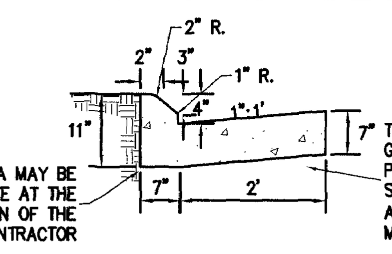
* THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (15" DEPTH) OR INCREASED AS MUCH AS 3" (21" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 18" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.



STANDARD 6" CURB

N.T.S.

CG-7



7" THE BOTTOM OF THE CURB AND GUTTER MAY BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUB-SURFACE COARSES PROVIDED A MINIMUM DEPTH OF 7" IS MAINTAINED.

NOTE:
COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

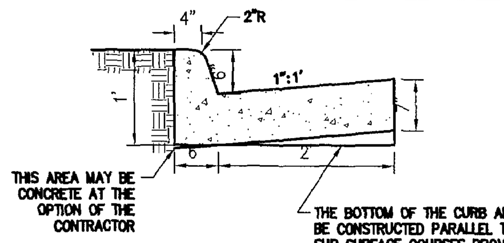
WHEN COMBINATION MOUNTABLE CURB AND GUTTER IS USED, THE STANDARD ENTRANCE GUTTERS OR STANDARD CONNECTION FOR STREET INTERSECTIONS ARE TO HAVE THE MOUNTABLE CURB CONFIGURATION INCORPORATED.

WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS.

COMBINATION 4" CURB & GUTTER

N.T.S.

CG-6



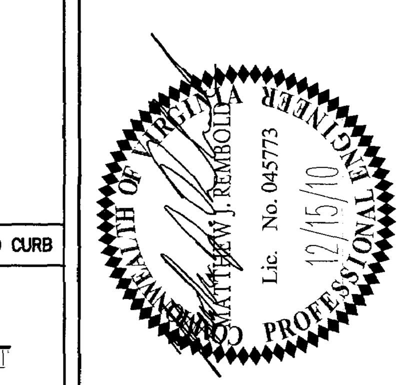
COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER.

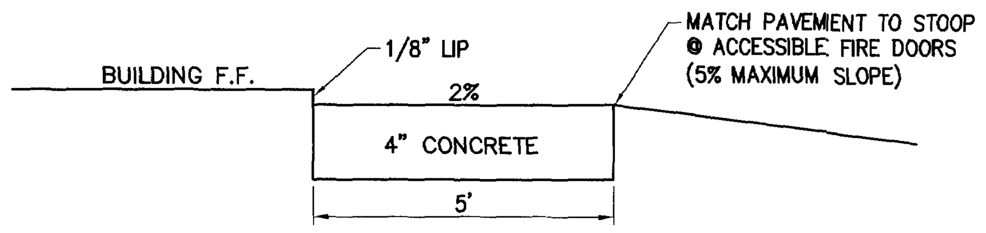
THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

COMBINATION CURB AND GUTTER

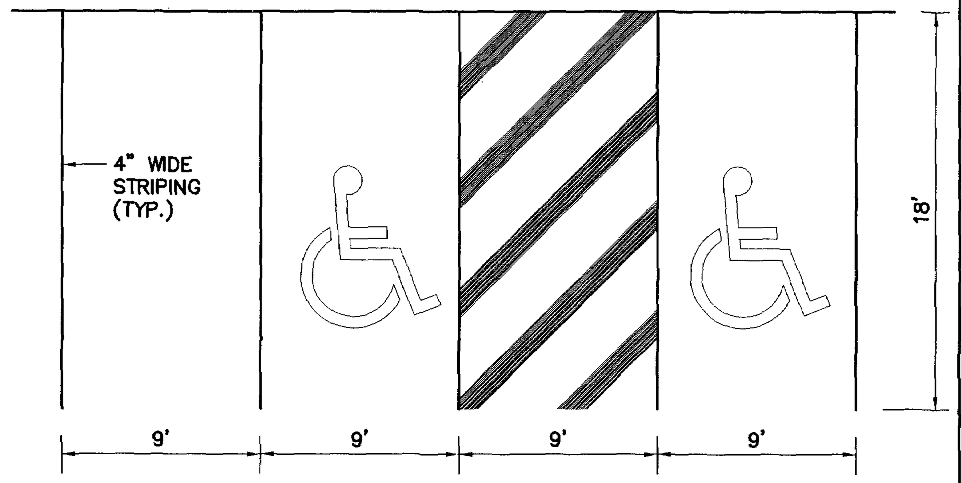
N.T.S.





STOOP DETAIL

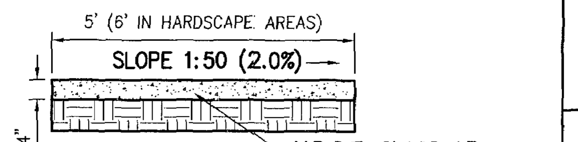
N.T.S.



PARKING SPACE DETAIL

N.T.S.

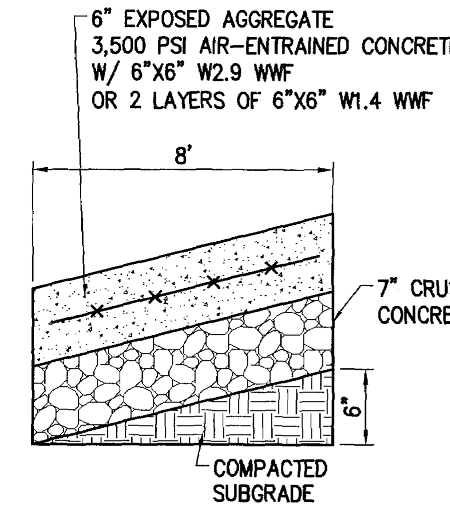
DHC999W



NOTE:
HORIZONTAL CRACK CONTROL JOINTS SHALL BE 5' C/C.
(6' C/C IN HARDSCAPE AREAS)

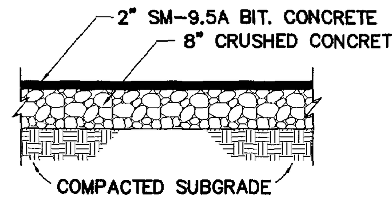
SIDEWALK DETAIL

N.T.S.



6" RAMP UP PAVEMENT SECTION

N.T.S.

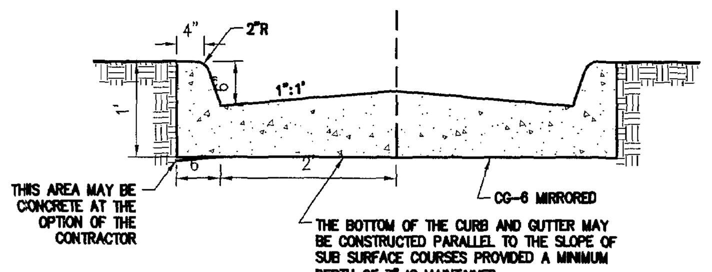


PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS

ON SITE-LIGHT DUTY PAVEMENT SECTION

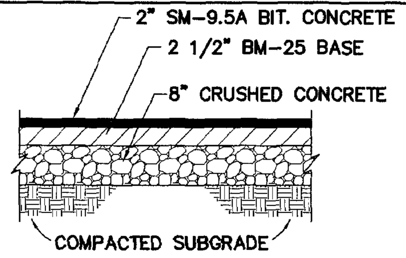
N.T.S.

CROWNED CURB



CROWNED CURB AND GUTTER

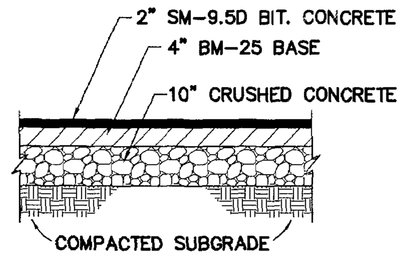
N.T.S.



PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS

ON-SITE HEAVY DUTY PAVEMENT SECTION

N.T.S.

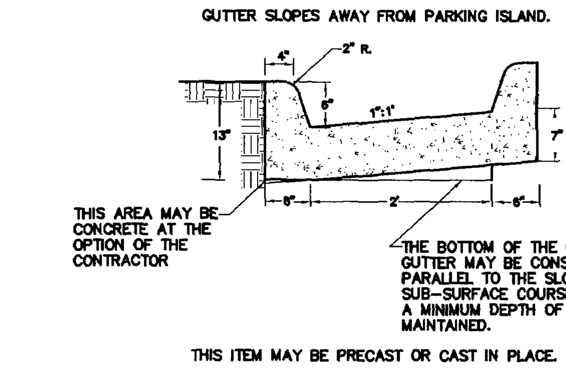


PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS

OFF-SITE HEAVY DUTY PAVEMENT SECTION

N.T.S.

GUTTER SLOPES AWAY FROM PARKING ISLAND.

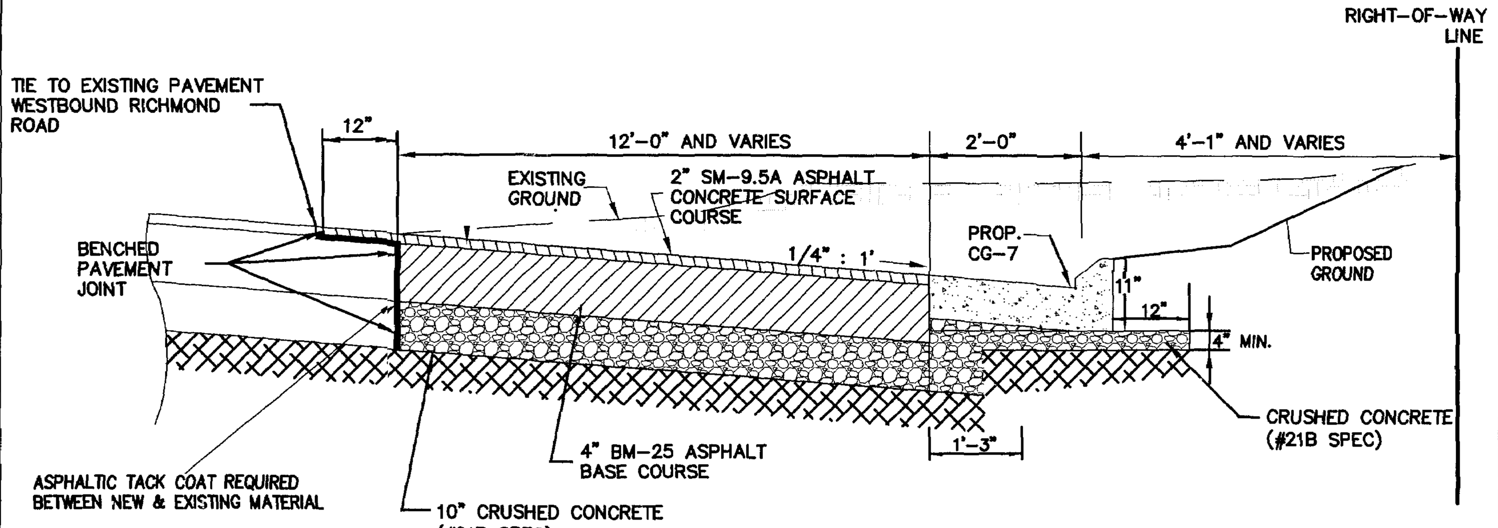


THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

CURB CUT THROUGH

N.T.S.

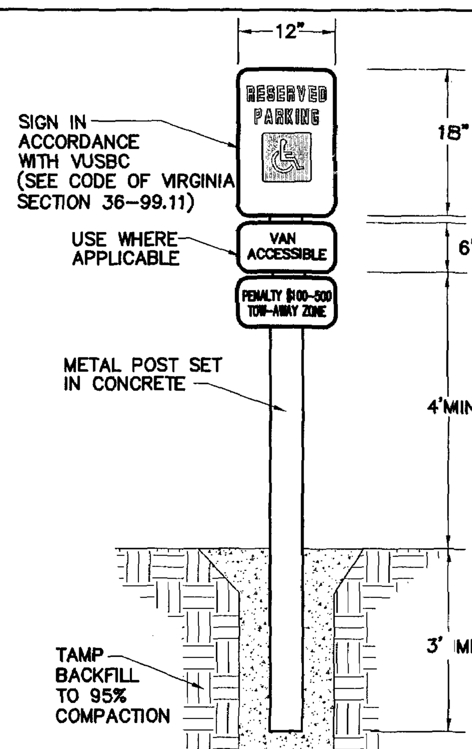


NOTE: TC'S TO BE ESTABLISHED FROM EXISTING EDGE OF PAVEMENT. FIELD VERIFY EDGE OF EXISTING EDGE OF PAVEMENT AT THE TIME OF CONSTRUCTION.

NOTE: PAVEMENT SHALL MATCH EXISTING PAVEMENT ON RICHMOND ROAD

PAVEMENT DETAIL TURN LANES (ROUTE 60)

N.T.S.

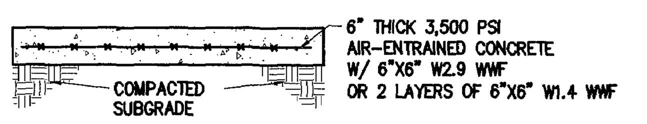


NOTE
THE SIGN SHALL BE FABRICATED IN ACCORDANCE WITH SECTION 701 AND INSTALLED PER INSTALLATION DETAIL WSP-1 TYPE C OF THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.

HANDICAP SIGN DETAIL

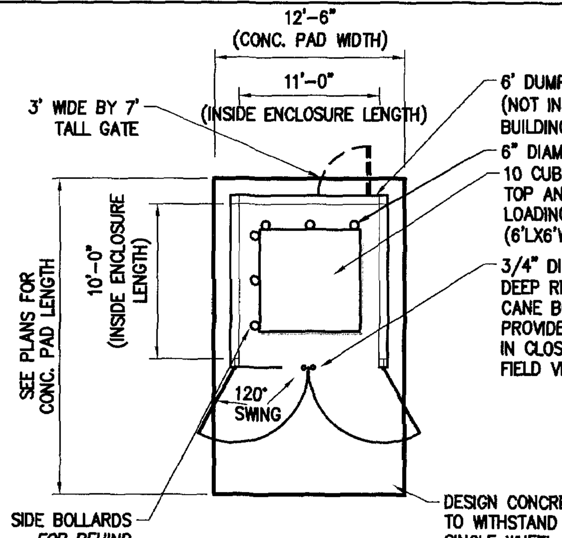
N.T.S.

D-HCSIGN-1



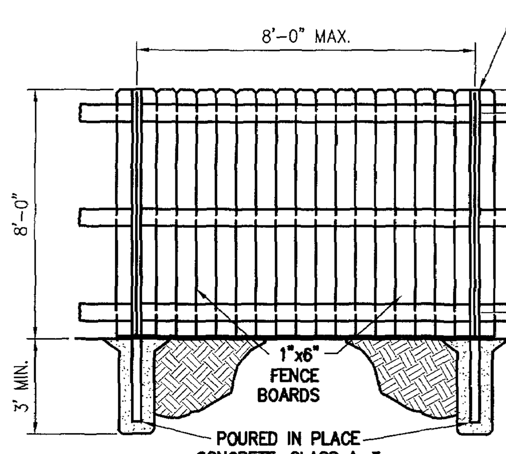
DUMPSTER PAD SECTION

N.T.S.



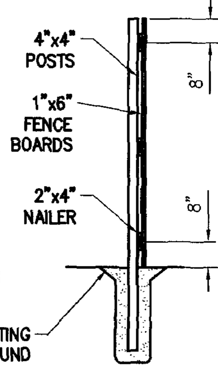
DUMPSTER PAD DETAIL

N.T.S.



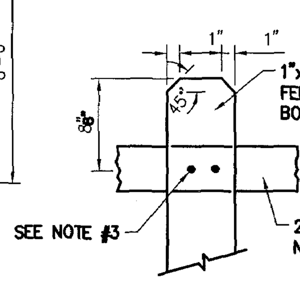
WOOD FENCE ELEVATION

N.T.S.



SECTION

N.T.S.

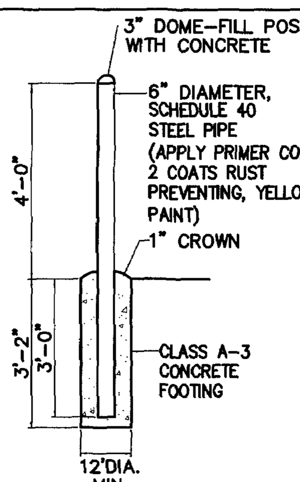


FENCE BOARD TOP

N.T.S.

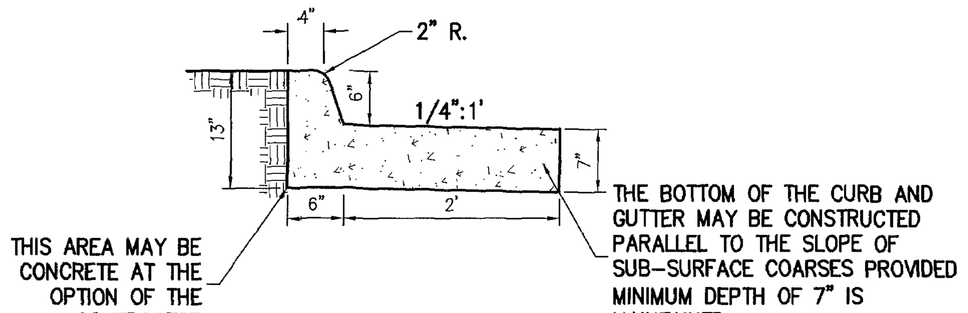
DUMPSTER FENCE DETAIL

N.T.S.



BOLLARD DETAIL

N.T.S.



NOTE: COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

REVERSE COMBINATION CURB & GUTTER (NOT IN VDOT R/W)

N.T.S.

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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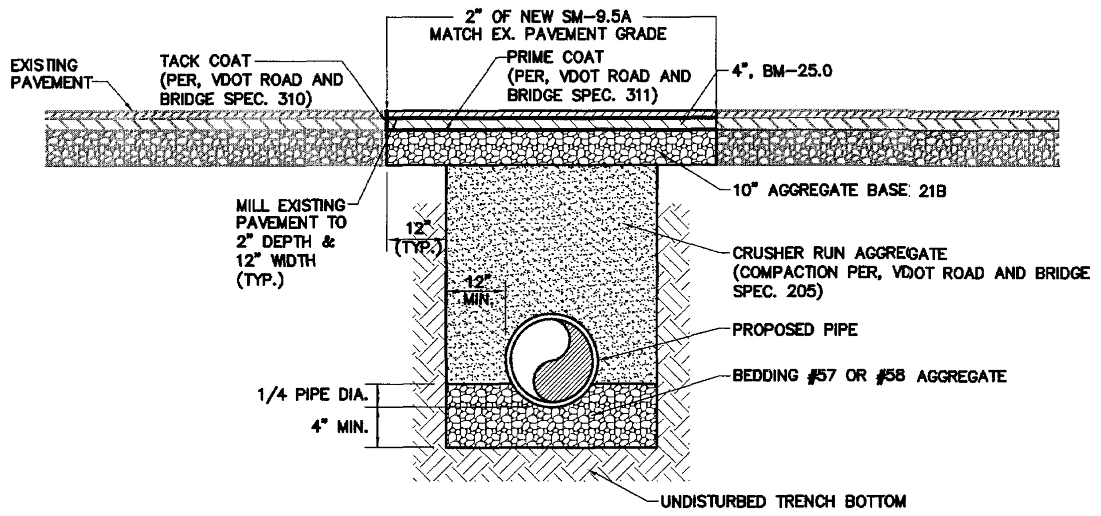
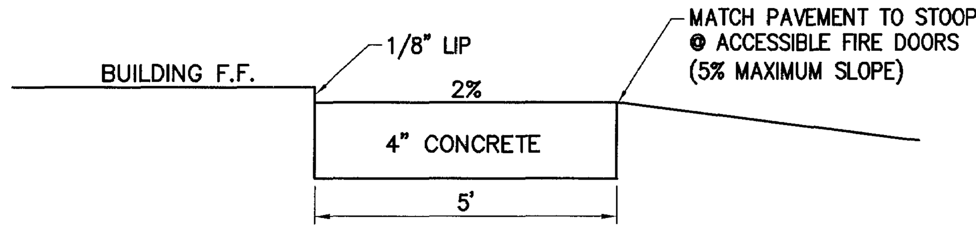
Williamsburg Pottery
Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title: Notes & Details	
Sheet Number 22	



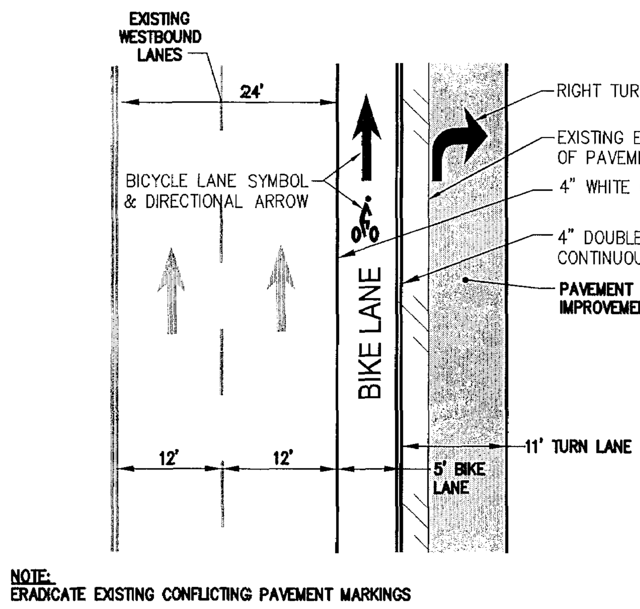
NOTE:
MEASUREMENTS OF THE EXISTING ROADWAY WIDTH SHALL BE MADE PRIOR TO THE START OF THE OVERLAY PLACEMENT. THESE MEASUREMENTS SHALL BE THE BASIS FOR PAVEMENT QUANTITY CALCULATIONS. ALL THE BACKFILLING AND COMPACTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OUTLINED IN VDOT's ROAD AND BRIDGE SPECIFICATIONS (CURRENT EDITION). THE PERMITEE WILL BE HELD RESPONSIBLE FOR ANY SETTLING OF BACKFILL OR PAVEMENT FOR A PERIOD OF 3 YEARS AFTER COMPLETION OF THE WORK. THIS APPLIES TO UTILITY INSTALLATION, EXCLUDING STORM SEWER PIPING.

PAVEMENT PATCH FOR RICHMOND ROAD
N.T.S.



STOOP DETAIL
N.T.S.

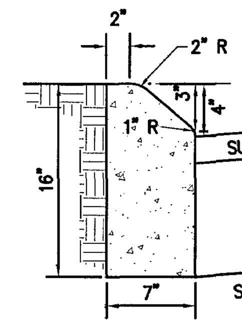
RICHMOND ROAD LANE CONFIGURATION
N.T.S.



NOTE:
CONTACT MR. SAL SIBLIA AT (757) 925-1679, 72 HOURS IN ADVANCE OF ALL PAVEMENT MARKINGS/ SIGN INSTALLATIONS. FAILURE TO DO SO MAY RESULT IN ADDITIONAL COSTS TO THE DEVELOPER.

NOTE:
ERADICATE EXISTING CONFLICTING PAVEMENT MARKINGS

CG-3



STANDARD 4" CURB
N.T.S.

NOTES
THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

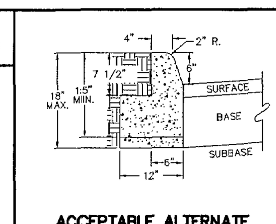
CURB HAVING A RADIUS OF 300'. OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB.

WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS.

THIS CURB TO BE USED WHEN DESIGN SPEED IS 40 MPH OR LESS ON RURAL HIGHWAYS AND 45 MPH OR LESS IN URBAN AND SUBURBAN AREAS.

THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (13" DEPTH) OR INCREASED AS MUCH AS 3" (19" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE THE DEPTH IS TO BE 16" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.

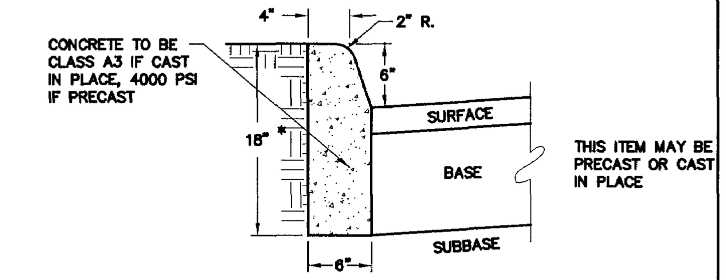
CG-2



ACCEPTABLE ALTERNATE IF CURB IS EXTRUDED

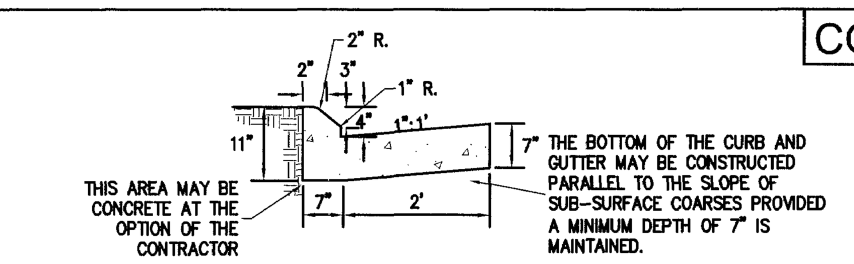
NOTE: CURB HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB

* THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (15" DEPTH) OR INCREASED AS MUCH AS 3" (21" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 18" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.



STANDARD 6" CURB
N.T.S.

CG-7



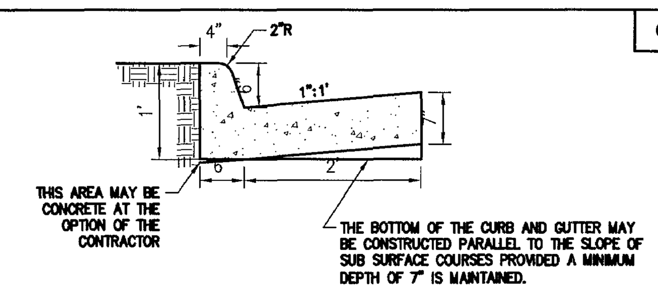
NOTE:
COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

WHEN COMBINATION MOUNTABLE CURB AND GUTTER IS USED, THE STANDARD ENTRANCE GUTTERS OR STANDARD CONNECTION FOR STREET INTERSECTIONS ARE TO HAVE THE MOUNTABLE CURB CONFIGURATION INCORPORATED.

WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS.

COMBINATION 4" CURB & GUTTER
N.T.S.

CG-6

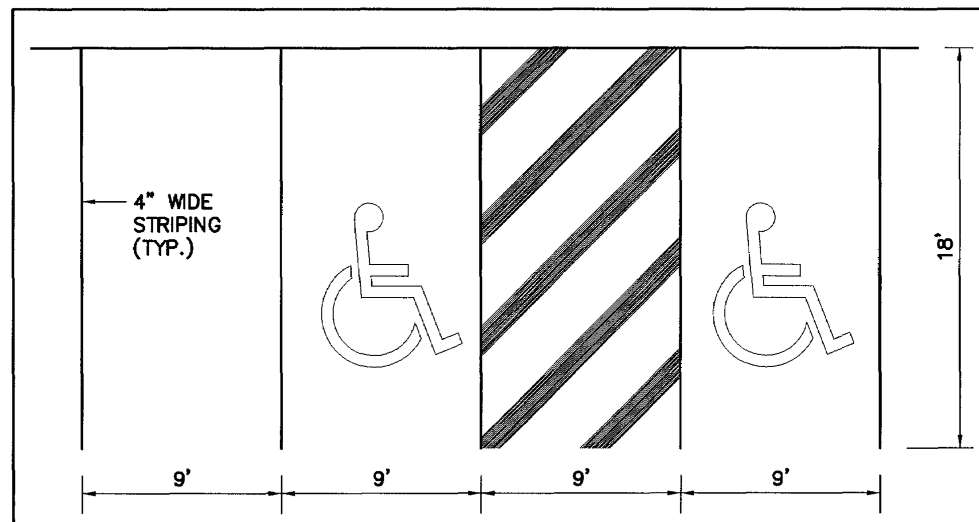


COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER.

THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

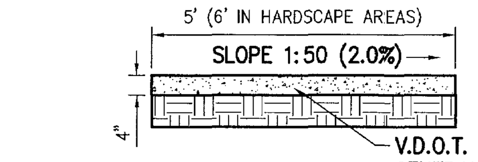
CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

COMBINATION CURB AND GUTTER
N.T.S.



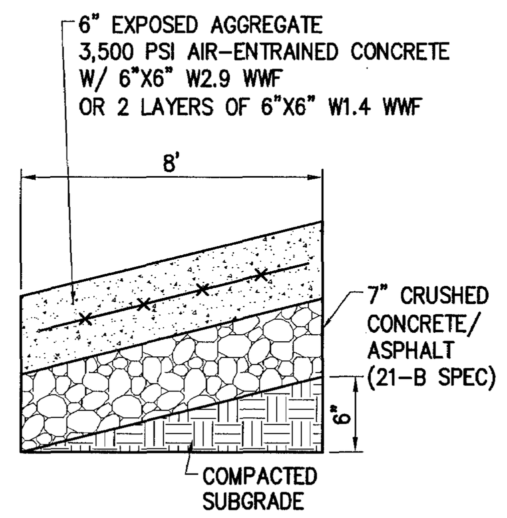
PARKING SPACE DETAIL
N.T.S.

DHC999W

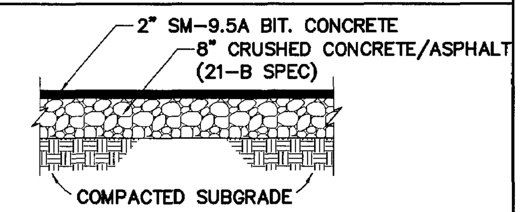


NOTE:
HORIZONTAL CRACK CONTROL JOINTS SHALL BE 5' C/C.
(6' C/C IN HARDSCAPE AREAS)

SIDEWALK DETAIL
N.T.S.

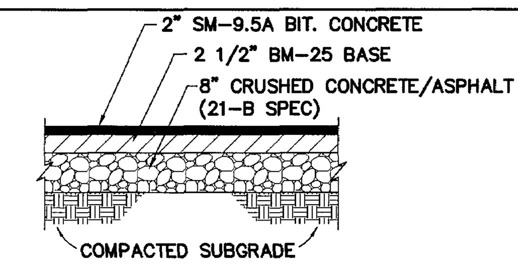


6" RAMP UP PAVEMENT SECTION
N.T.S.



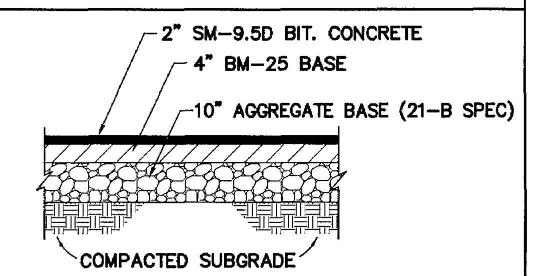
PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS

ON SITE-LIGHT DUTY PAVEMENT SECTION
N.T.S.



PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS

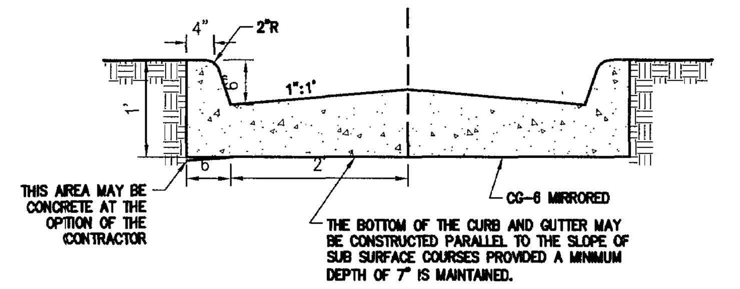
ON-SITE HEAVY DUTY PAVEMENT SECTION
N.T.S.



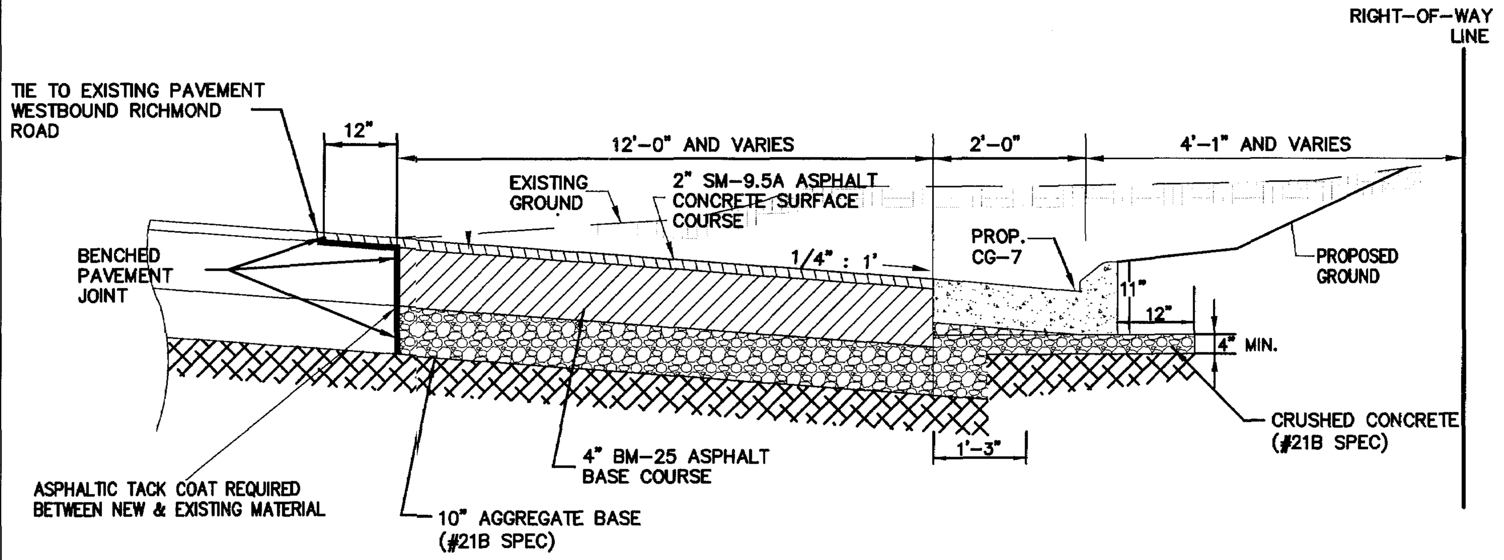
PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS

OFF-SITE HEAVY DUTY PAVEMENT SECTION
N.T.S.

CROWNED CURB



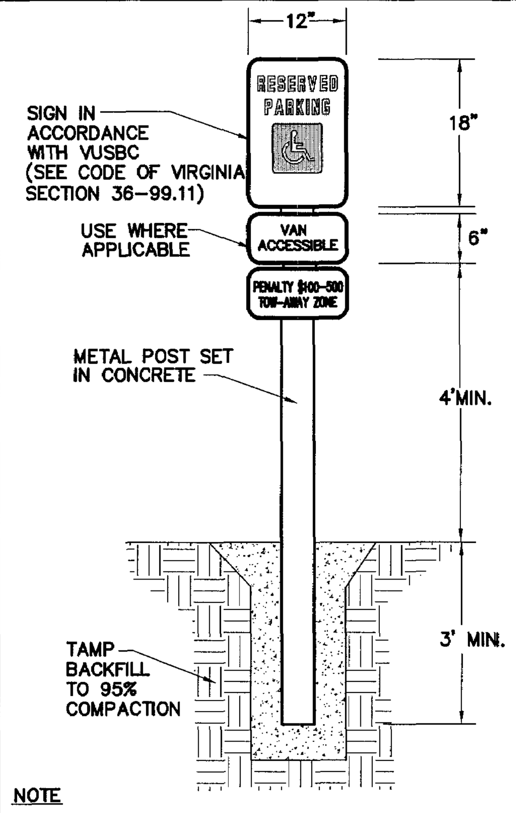
CROWNED CURB AND GUTTER
N.T.S.



NOTE: TC'S TO BE ESTABLISHED FROM EXISTING EDGE OF PAVEMENT. FIELD VERIFY EDGE OF EXISTING EDGE OF PAVEMENT AT THE TIME OF CONSTRUCTION.

NOTE: PAVEMENT SHALL MATCH EXISTING PAVEMENT ON RICHMOND ROAD

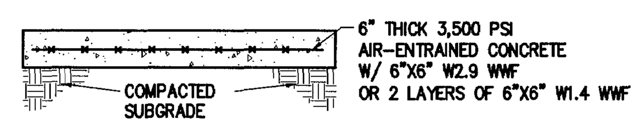
VDOT PAVEMENT DETAIL (ROUTE 60)
N.T.S.



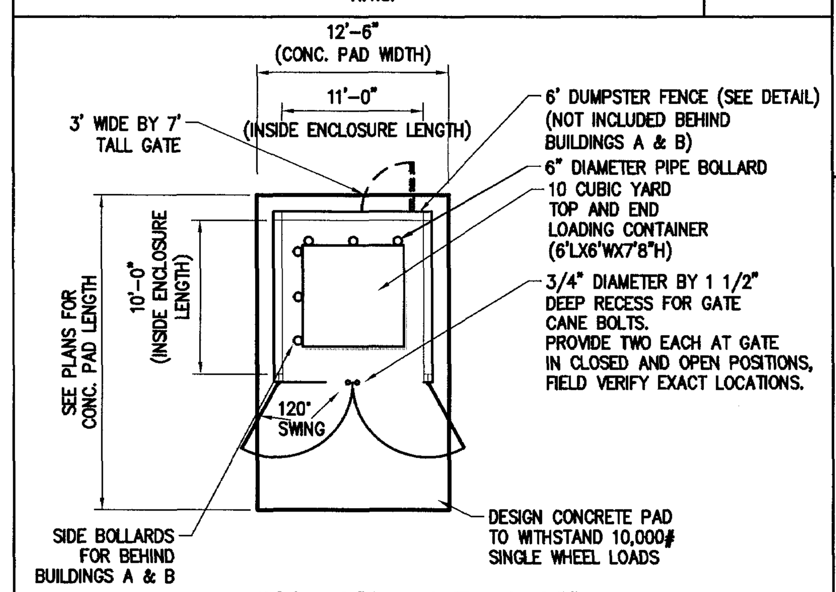
NOTE
THE SIGN SHALL BE FABRICATED IN ACCORDANCE WITH SECTION 701 AND INSTALLED PER INSTALLATION DETAIL WSP-1 TYPE C OF THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.

HANDICAP SIGN DETAIL
N.T.S.

D-HCSIGN-1

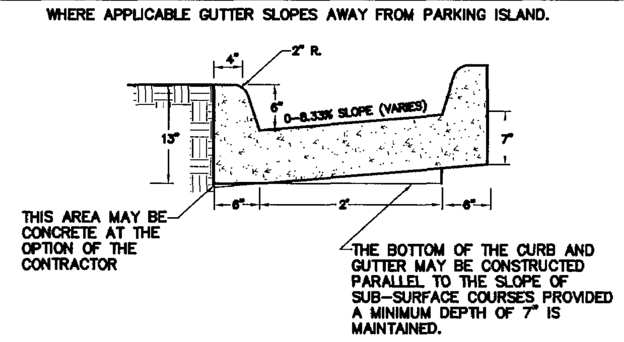


DUMPSTER PAD SECTION
N.T.S.



DUMPSTER PAD DETAIL
N.T.S.

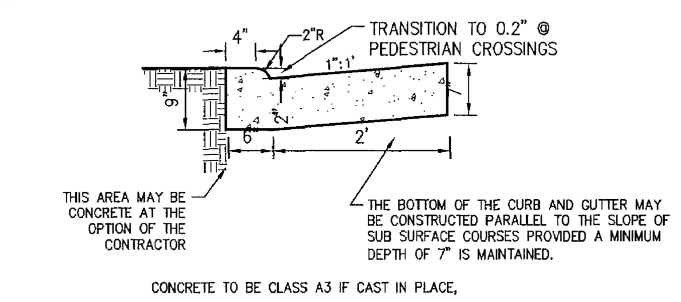
WHERE APPLICABLE GUTTER SLOPES AWAY FROM PARKING ISLAND.



THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

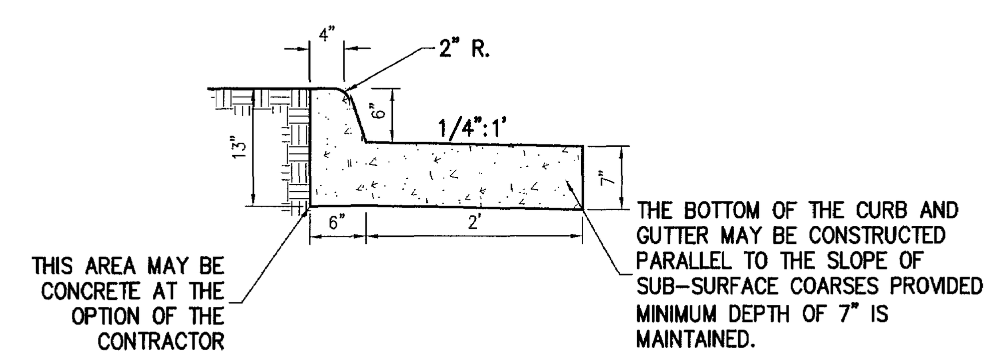
CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

CURB CUT THROUGH
N.T.S.



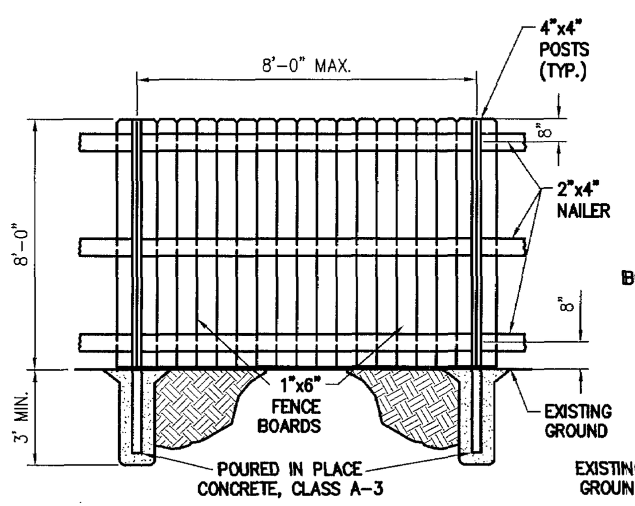
CONCRETE TO BE CLASS A3 IF CAST IN PLACE,

PLAZA COMBINATION CURB & GUTTER @ TRAFFIC CALMING MEASURES

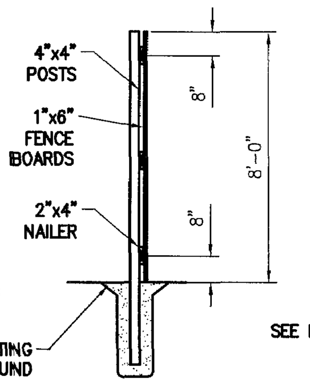


NOTE: COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

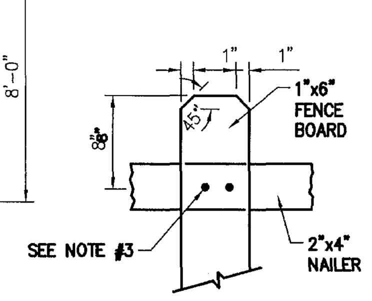
REVERSE COMBINATION CURB & GUTTER (NOT IN VDOT R/W)
N.T.S.



WOOD FENCE ELEVATION
N.T.S.

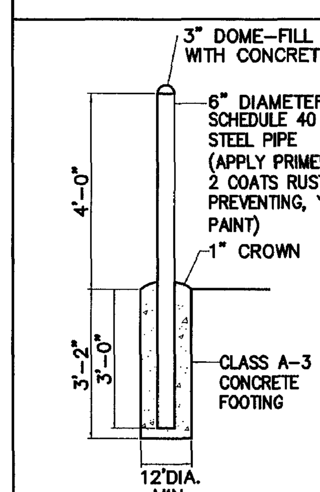


SECTION
N.T.S.



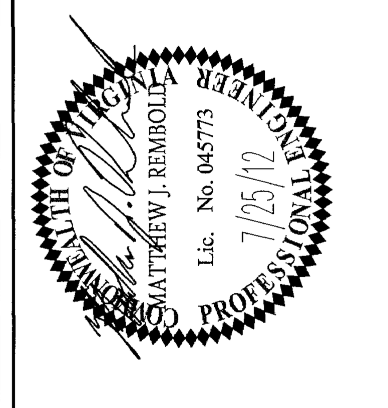
FENCE BOARD TOP
N.T.S.

DUMPSTER FENCE DETAIL
N.T.S.



BOLLARD DETAIL
N.T.S.

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised R/W Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR



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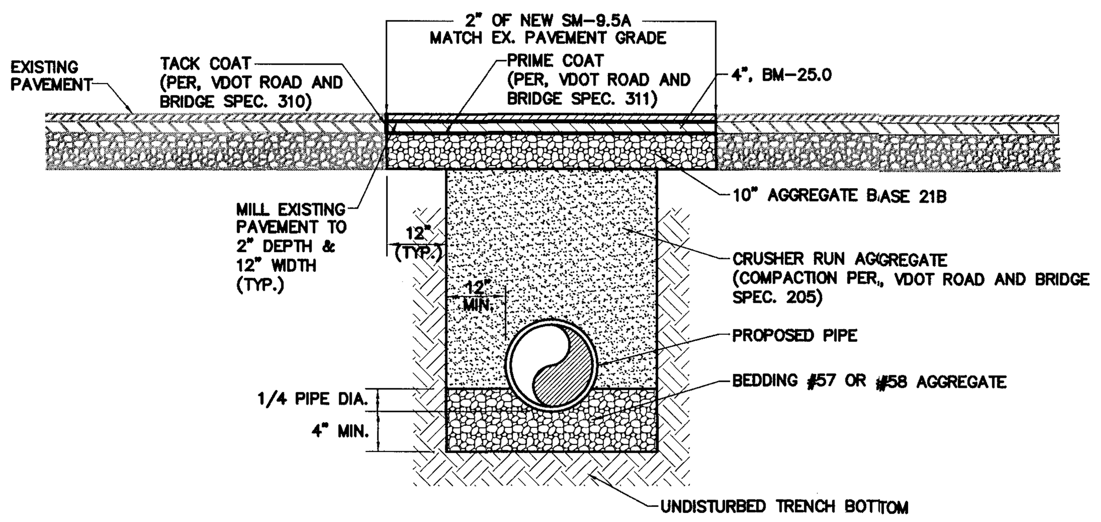
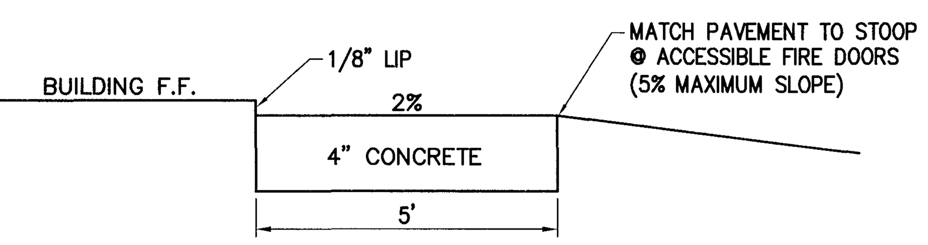
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Notes & Details
Sheet Number	22



NOTE:
MEASUREMENTS OF THE EXISTING ROADWAY WIDTH SHALL BE MADE PRIOR TO THE START OF THE OVERLAY PLACEMENT. THESE MEASUREMENTS SHALL BE THE BASIS FOR PAVEMENT QUANTITY CALCULATIONS. ALL THE BACKFILLING AND COMPACTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OUTLINED IN VDOT's ROAD AND BRIDGE SPECIFICATIONS (CURRENT EDITION). THE PERMITEE WILL BE HELD RESPONSIBLE FOR ANY SETTLING OF BACKFILL OR PAVEMENT FOR A PERIOD OF 3 YEARS AFTER COMPLETION OF THE WORK. THIS APPLIES TO UTILITY INSTALLATION, EXCLUDING STORM SEWER PIPING.

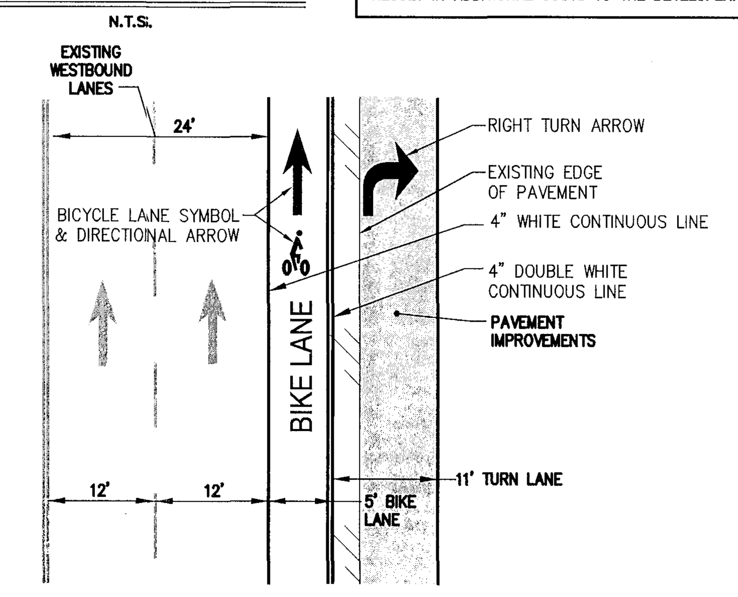
PAVEMENT PATCH FOR RICHMOND ROAD
N.T.S.



STOOP DETAIL
N.T.S.

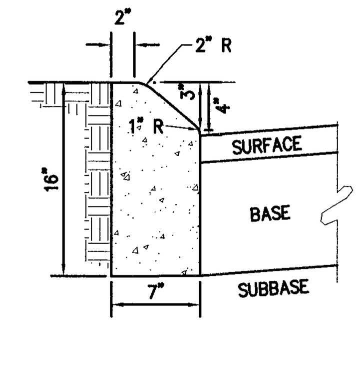
RICHMOND ROAD LANE CONFIGURATION
N.T.S.

NOTE:
CONTACT MR. SAL SIBLIA AT (757) 925-1679, 72 HOURS IN ADVANCE OF ALL PAVEMENT MARKINGS/ SIGN INSTALLATIONS. FAILURE TO DO SO MAY RESULT IN ADDITIONAL COSTS TO THE DEVELOPER.



NOTE:
ERADICATE EXISTING CONFLICTING PAVEMENT MARKINGS

CG-3



STANDARD 4" CURB
N.T.S.

NOTES
THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

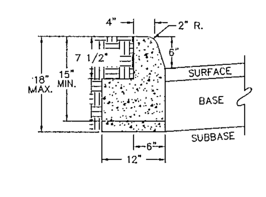
CURB HAVING A RADIUS OF 300'. OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB.

WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS.

THIS CURB TO BE USED WHEN DESIGN SPEED IS 40 MPH OR LESS ON RURAL HIGHWAYS AND 45 MPH OR LESS IN URBAN AND SUBURBAN AREAS.

THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (13" DEPTH) OR INCREASED AS MUCH AS 3" (19" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE THE DEPTH IS TO BE 16" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.

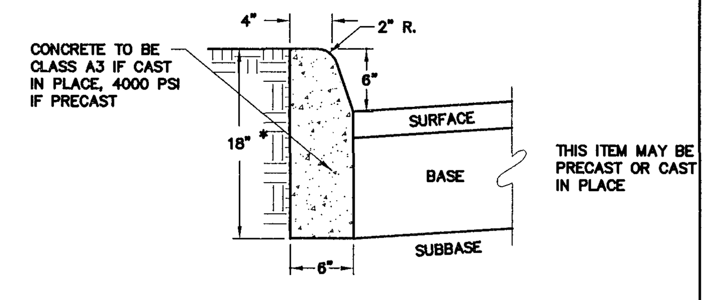
CG-2



ACCEPTABLE ALTERNATE IF CURB IS EXTRUDED

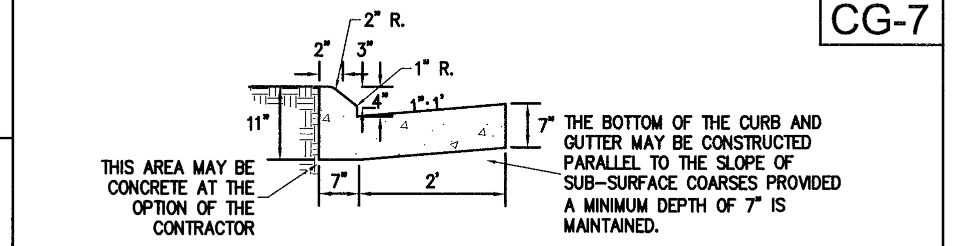
NOTE: CURB HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB

* THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (15" DEPTH) OR INCREASED AS MUCH AS 3" (21" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 18" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.



STANDARD 6" CURB
N.T.S.

CG-7



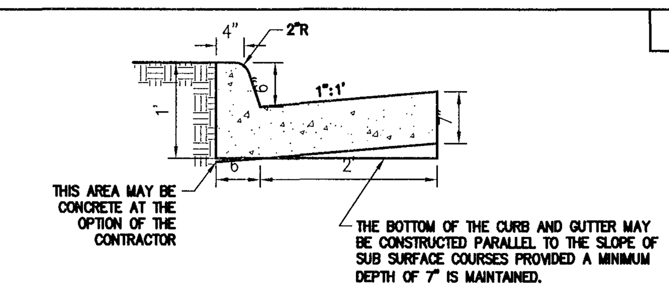
NOTE:
COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

WHEN COMBINATION MOUNTABLE CURB AND GUTTER IS USED, THE STANDARD ENTRANCE GUTTERS OR STANDARD CONNECTION FOR STREET INTERSECTIONS ARE TO HAVE THE MOUNTABLE CURB CONFIGURATION INCORPORATED.

WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS.

COMBINATION 4" CURB & GUTTER
N.T.S.

CG-6

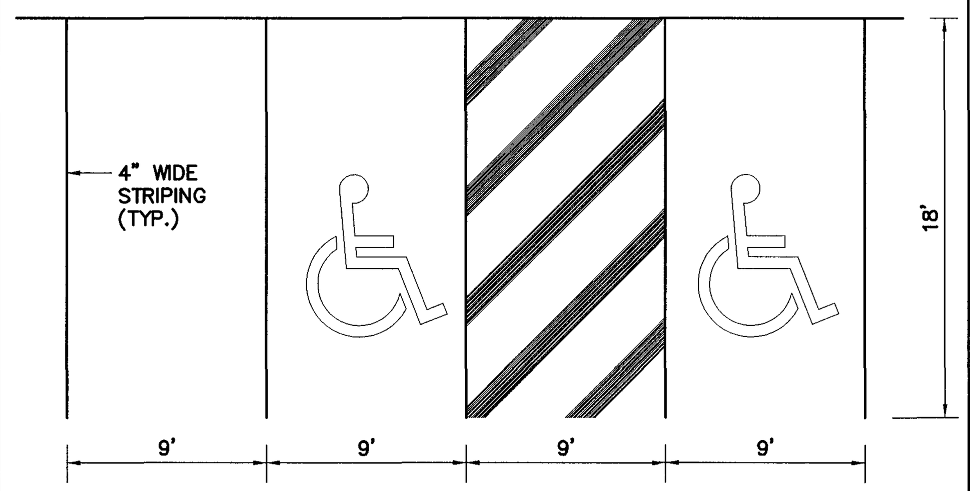


COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER.

THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

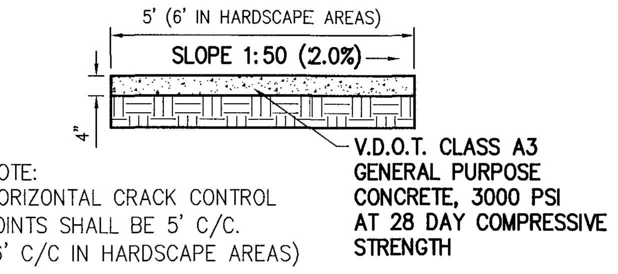
CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

COMBINATION CURB AND GUTTER
N.T.S.



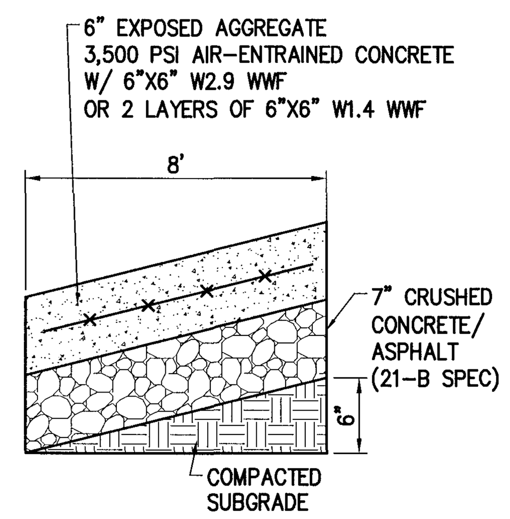
PARKING SPACE DETAIL
N.T.S.

DHC999W

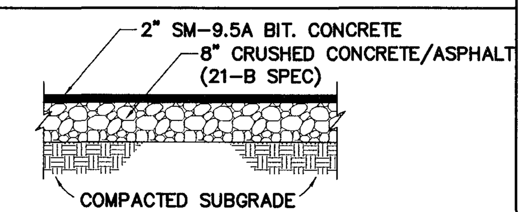


NOTE:
HORIZONTAL CRACK CONTROL JOINTS SHALL BE 5' C/C.
(6' C/C IN HARDSCAPE AREAS)

SIDEWALK DETAIL
N.T.S.

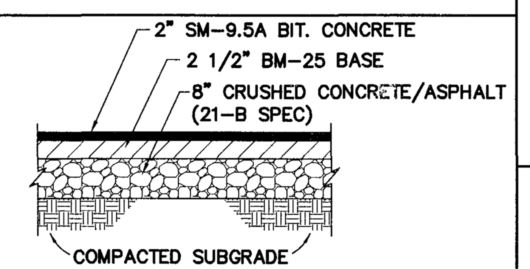


6" RAMP UP PAVEMENT SECTION
N.T.S.



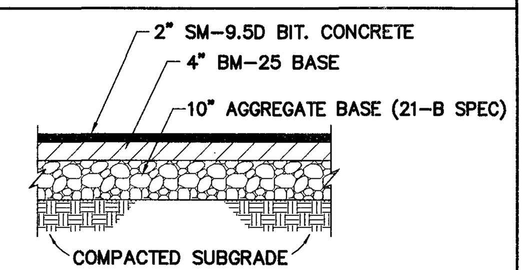
PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS.

ON SITE-LIGHT DUTY PAVEMENT SECTION
N.T.S.



PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS.

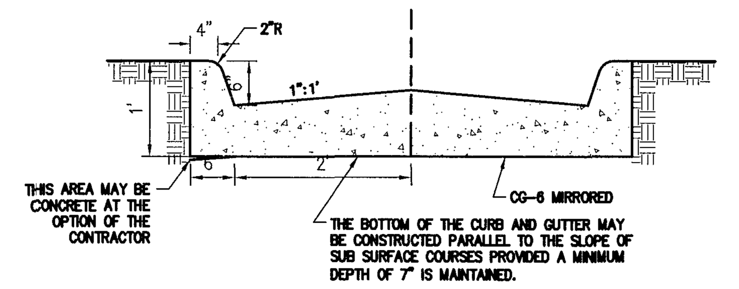
ON-SITE HEAVY DUTY PAVEMENT SECTION
N.T.S.



PAVEMENT SECTION IS BASED UPON GEOTECHNICAL RECOMMENDATIONS.

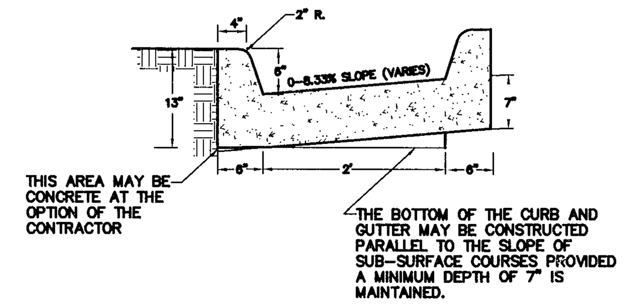
OFF-SITE HEAVY DUTY PAVEMENT SECTION
N.T.S.

CROWNED CURB



CROWNED CURB AND GUTTER
N.T.S.

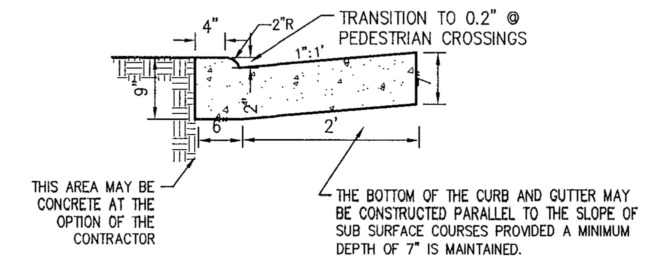
WHERE APPLICABLE GUTTER SLOPES AWAY FROM PARKING ISLAND.



THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

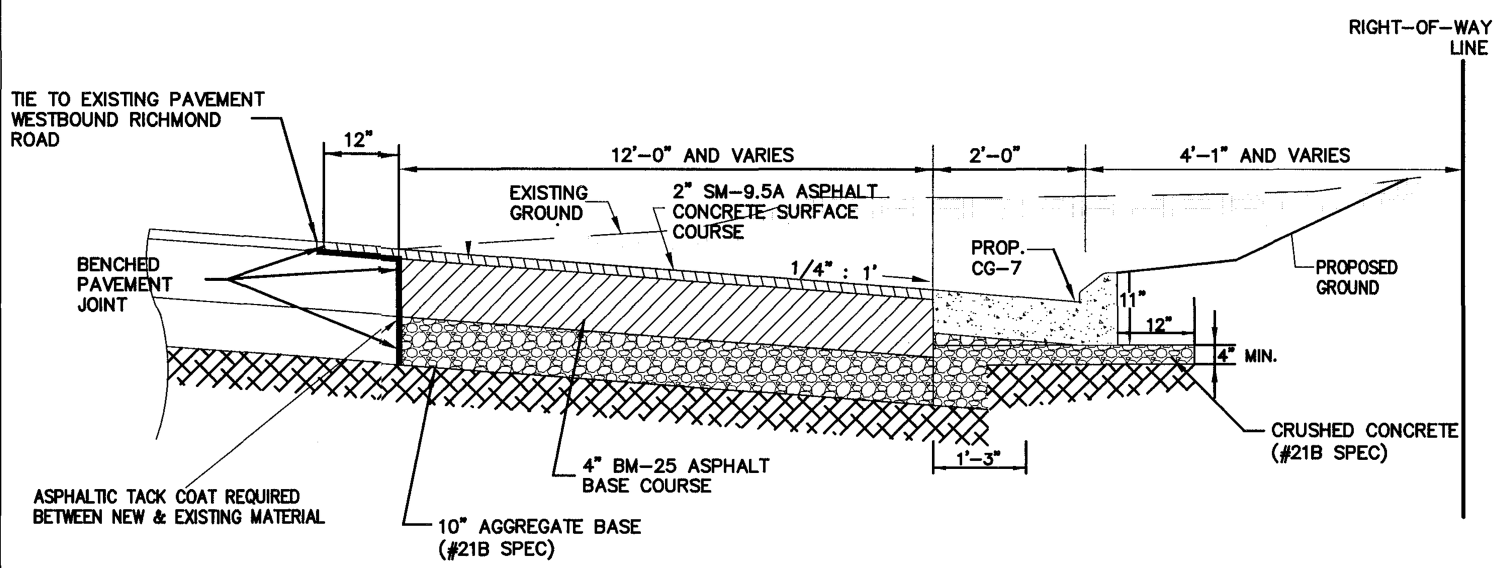
CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

CURB CUT THROUGH
N.T.S.



CONCRETE TO BE CLASS A3 IF CAST IN PLACE,

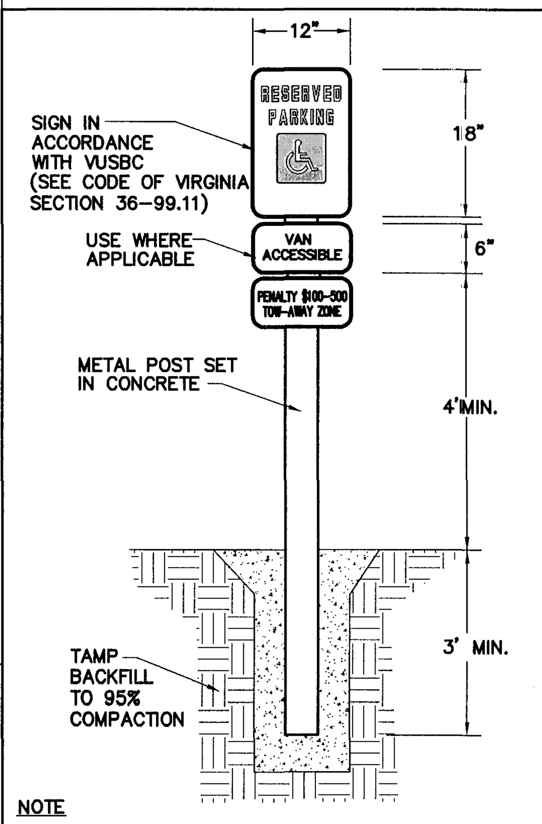
PLAZA COMBINATION CURB & GUTTER @ TRAFFIC CALMING MEASURES



NOTE: TC'S TO BE ESTABLISHED FROM EXISTING EDGE OF PAVEMENT. FIELD VERIFY EDGE OF EXISTING EDGE OF PAVEMENT AT THE TIME OF CONSTRUCTION.

NOTE: PAVEMENT SHALL MATCH EXISTING PAVEMENT ON RICHMOND ROAD

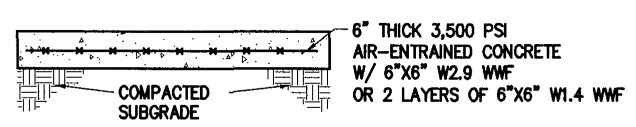
VDOT PAVEMENT DETAIL (ROUTE 60)
N.T.S.



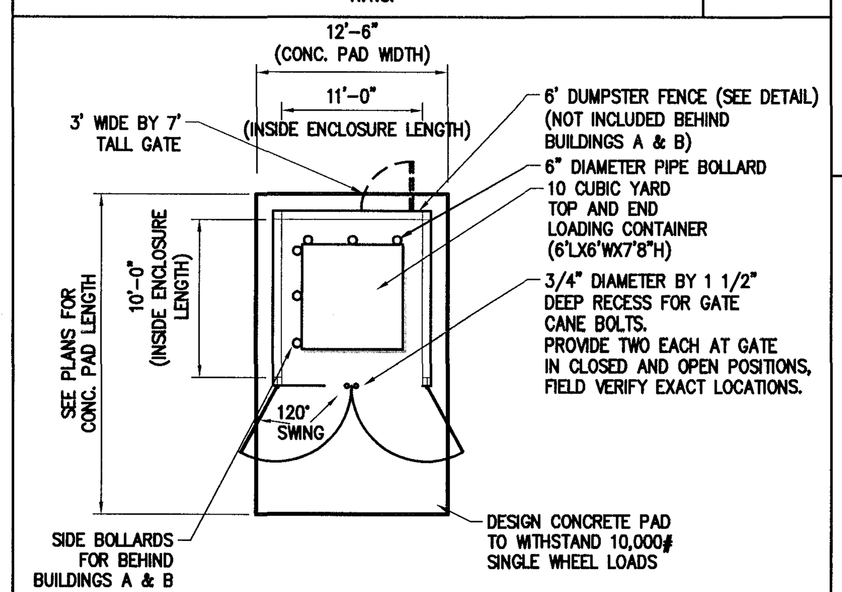
NOTE
THE SIGN SHALL BE FABRICATED IN ACCORDANCE WITH SECTION 701 AND INSTALLED PER INSTALLATION DETAIL WSP-1 TYPE C OF THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.

HANDICAP SIGN DETAIL
N.T.S.

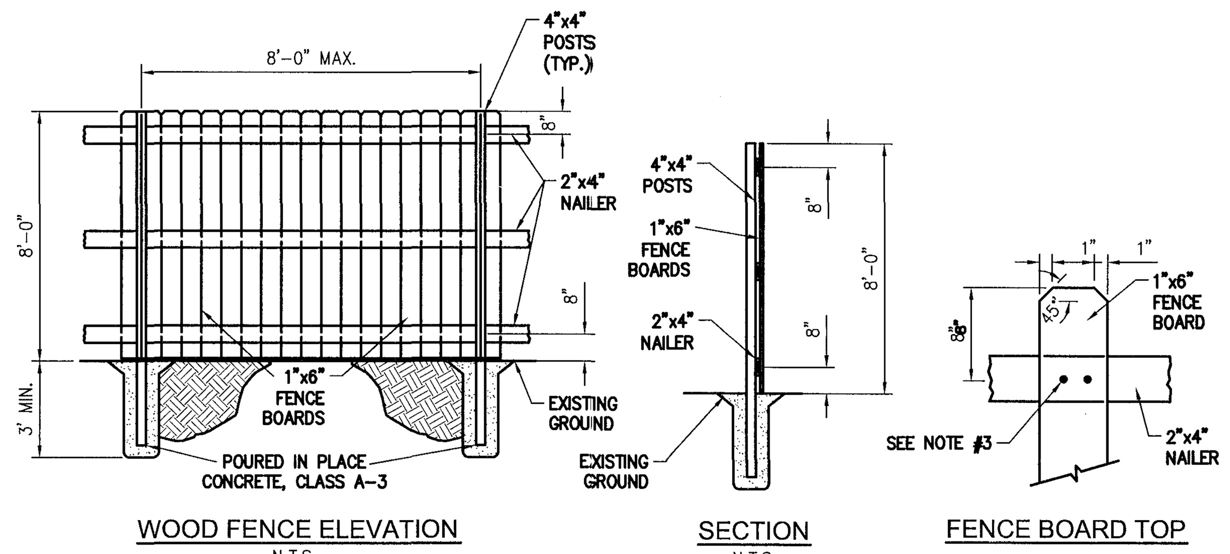
D-IHCSIGN-1



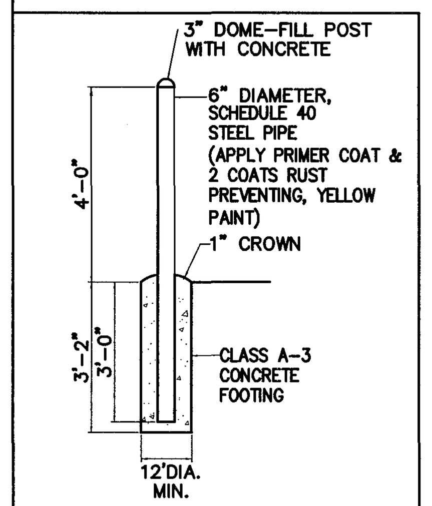
DUMPSTER PAD SECTION
N.T.S.



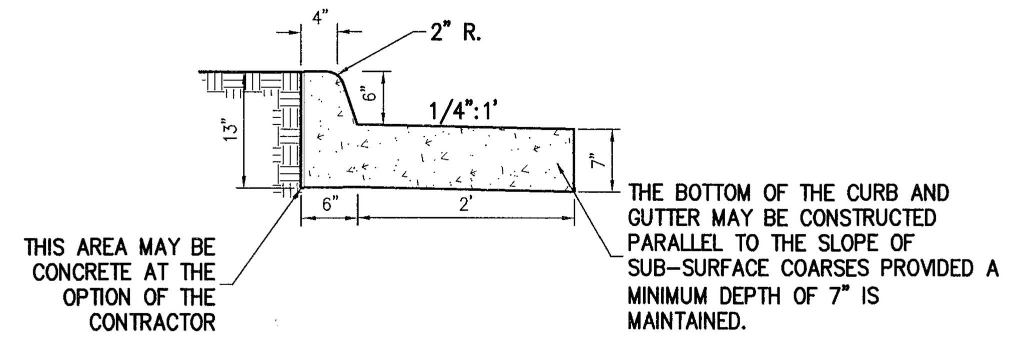
DUMPSTER PAD DETAIL
N.T.S.



DUMPSTER FENCE DETAIL
N.T.S.



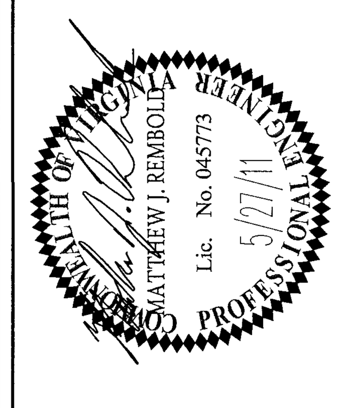
BOLLARD DETAIL
N.T.S.



NOTE: COMBINATION CURB AND GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS A RADIAL COMBINATION CURB AND GUTTER. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

REVERSE COMBINATION CURB & GUTTER (NOT IN VDOT R/W)
N.T.S.

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR



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Williamsburg Pottery
Stonehouse District James City County Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Notes & Details

Sheet Number
22

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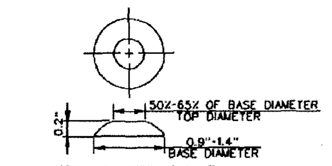
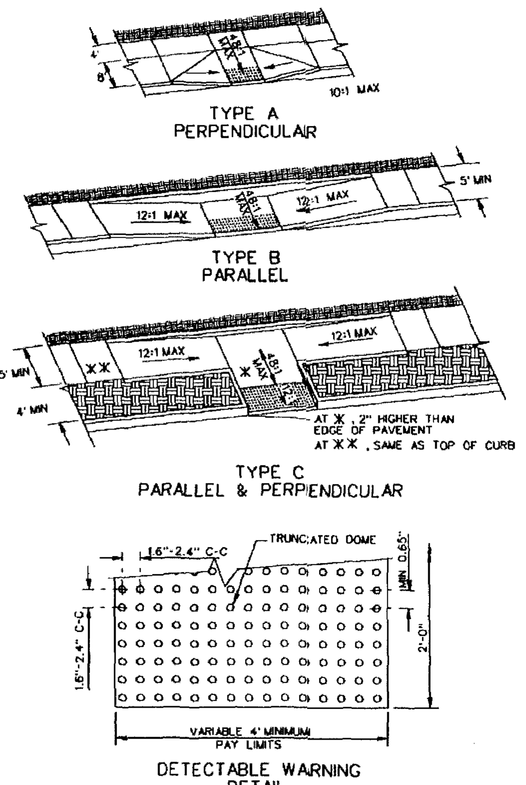
CG-12

GENERAL NOTES:

1. THE DETECTABLE WARNING SHALL BE PROVIDED BY TRUNCATED DOMES.
2. DETECTABLE WARNING TO BE CLASS A-3 CONCRETE (CLASS A-4 IF PRECAST) WITH SLIP RESISTANT INTEGRAL SURFACE COVERING THE FULL WIDTH OF THE RAMP FLOOR BY 2 FOOT IN LENGTH IN THE DIRECTION OF PEDESTRIAN TRAVEL. OTHER TYPES OF MATERIAL WITH THE TRUNCATED DOMES DETECTABLE WARNING MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
3. SLOPING SIDES OF CURB RAMP MAY BE POURED MONOLITHICALLY WITH RAMP FLOOR OR BY USING PERMISSIBLE CONSTRUCTION JOINT WITH REQUIRED BARS.
4. IF RAMP FLOOR IS PRECAST, HOLES MUST BE PROVIDED FOR DOWEL BARS SO THAT ADJOINING FLARED SIDES CAN BE CAST IN PLACE AFTER PLACEMENT OF PRECAST RAMP FLOOR. PRECAST CONCRETE SHALL BE CLASS A-4.
5. REQUIRED BARS ARE TO BE NO. 5 X 8" PLACED 1' CENTER TO CENTER ALONG BOTH SIDES OF THE RAMP FLOOR, MID-DEPTH OF RAMP FLOOR. MINIMUM CONCRETE COVER 1½".
6. CURB / CURB AND GUTTER SLOPE TRANSITIONS ADJACENT TO CURB RAMPS ARE INCLUDED IN PAYMENT FOR CURB / CURB AND GUTTER.
7. CURB RAMPS ARE TO BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THEY ARE TO BE PROVIDED AT INTERSECTIONS WHEREVER AN ACCESSIBLE ROUTE WITHIN THE RIGHT OF WAY OF A HIGHWAY FACILITY CROSSES A CURB REGARDLESS OF WHETHER SIDEWALK IS EXISTING, PROPOSED, OR NONEXISTENT. THEY MUST BE LOCATED WITHIN PEDESTRIAN CROSSWALKS AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER, AND SHOULD NOT BE LOCATED BEHIND VEHICLE STOP LINES, EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. ACCESSIBLE ROUTES PROVIDE A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.
8. RAMPS MAY BE PLACED ON RADIAL OR TANGENTIAL SECTIONS PROVIDED THAT THE CURB OPENING IS PLACED WITHIN THE LIMITS OF THE CROSSWALK AND THAT THE SLOPE AT THE CONNECTION OF THE CURB OPENING IS PERPENDICULAR TO THE CURB.
9. TYPICAL CONCRETE SIDEWALK IS 4" THICK. WHEN THE ENTRANCE RADII CANNOT ACCOMMODATE THE TURNING REQUIREMENTS OF ANTICIPATED HEAVY TRUCK TRAFFIC, REFER TO STANDARD CG-13, COMMERCIAL ENTRANCE (HEAVY TRUCK TRAFFIC) FOR CONCRETE DEPTH.
10. WHEN CURB RAMPS ARE USED IN CONJUNCTION WITH A SHARED USE PATH, THE MINIMUM WIDTH SHALL BE THE WIDTH OF THE SHARED USE PATH.
11. WHEN ONLY ONE CURB RAMP IS PROVIDED FOR TWO CROSSINGS (DIAGONAL), A 4' x 4' LANDING AREA SHALL BE PROVIDED TO MANEUVER A WHEELCHAIR INTO THE CROSSWALK WITHOUT GOING INTO THE TRAVELWAY. THIS 4' x 4' LANDING AREA MAY INCLUDE THE GUTTER PAN.



TRUNCATED DOME DETAIL

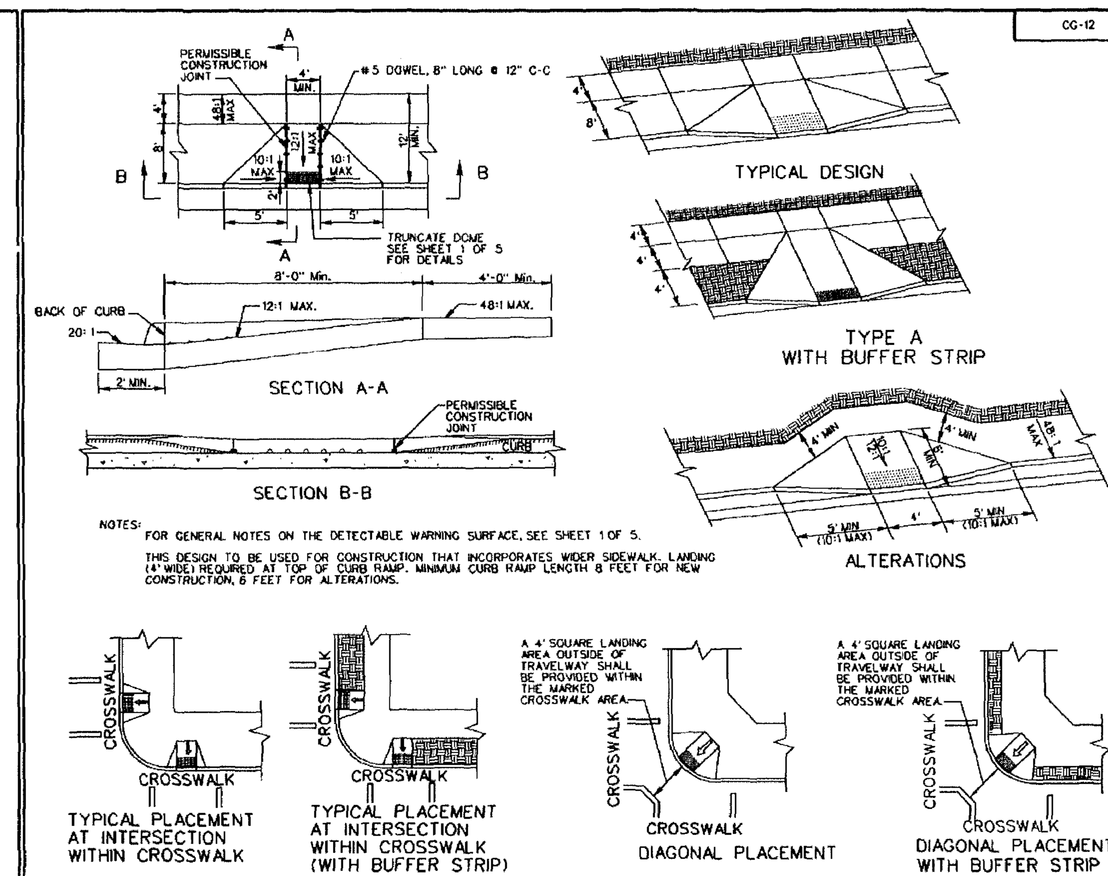


DETECTABLE WARNING DETAIL

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 5 — REVISION DATE 10/09 — 203.05

CG-12 DETECTABLE WARNING SURFACE (GENERAL NOTES)

VIRGINIA DEPARTMENT OF TRANSPORTATION — SPECIFICATION REFERENCE 105, 502

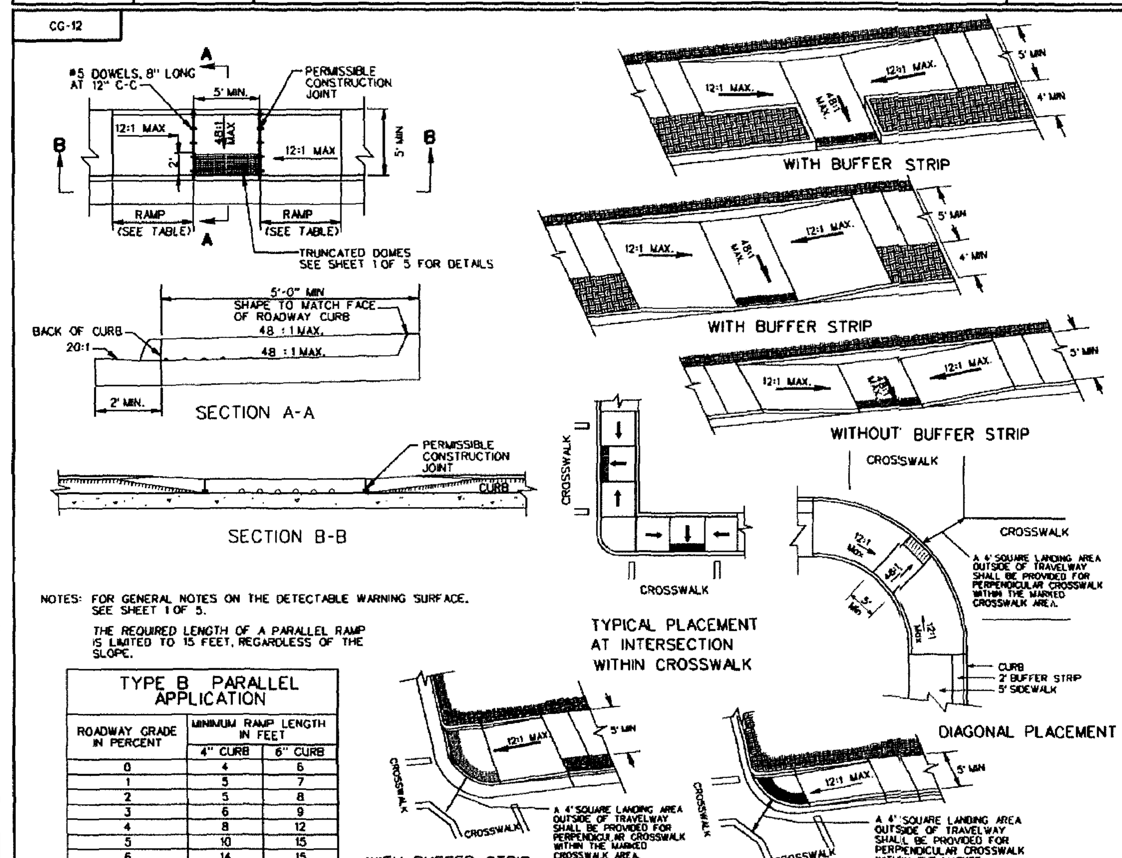


NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

THIS DESIGN TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDER SIDEWALK. LANDING (4' WIDE) REQUIRED AT TOP OF CURB RAMP. MINIMUM CURB RAMP LENGTH 8 FEET FOR NEW CONSTRUCTION, 6 FEET FOR ALTERATIONS.

SPECIFICATION REFERENCE 105, 502 — **CG-12 DETECTABLE WARNING SURFACE** TYPE A (PERPENDICULAR) APPLICATION — VIRGINIA DEPARTMENT OF TRANSPORTATION — VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE 10/09 — SHEET 2 OF 5 — 203.06

CG-12



NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE. SEE SHEET 1 OF 5.

THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.

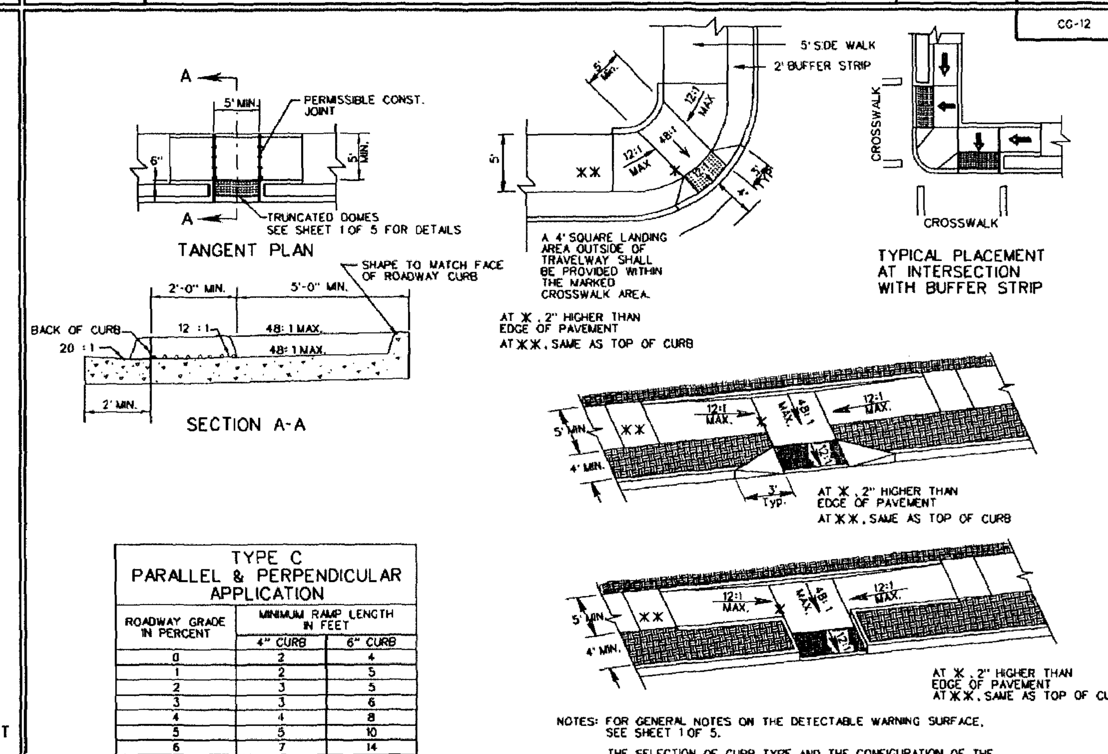
TYPE B PARALLEL APPLICATION

ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15

VDOT ROAD AND BRIDGE STANDARDS — SHEET 3 OF 5 — REVISION DATE 10/09 — 203.07

CG-12 DETECTABLE WARNING SURFACE TYPE B (PARALLEL) APPLICATION

VIRGINIA DEPARTMENT OF TRANSPORTATION — SPECIFICATION REFERENCE 105, 502



TYPE C PARALLEL & PERPENDICULAR APPLICATION

ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	2	4
1	2	5
2	3	5
3	3	6
4	4	8
5	5	10
6	7	14
7	13	15
8	15	15

THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.

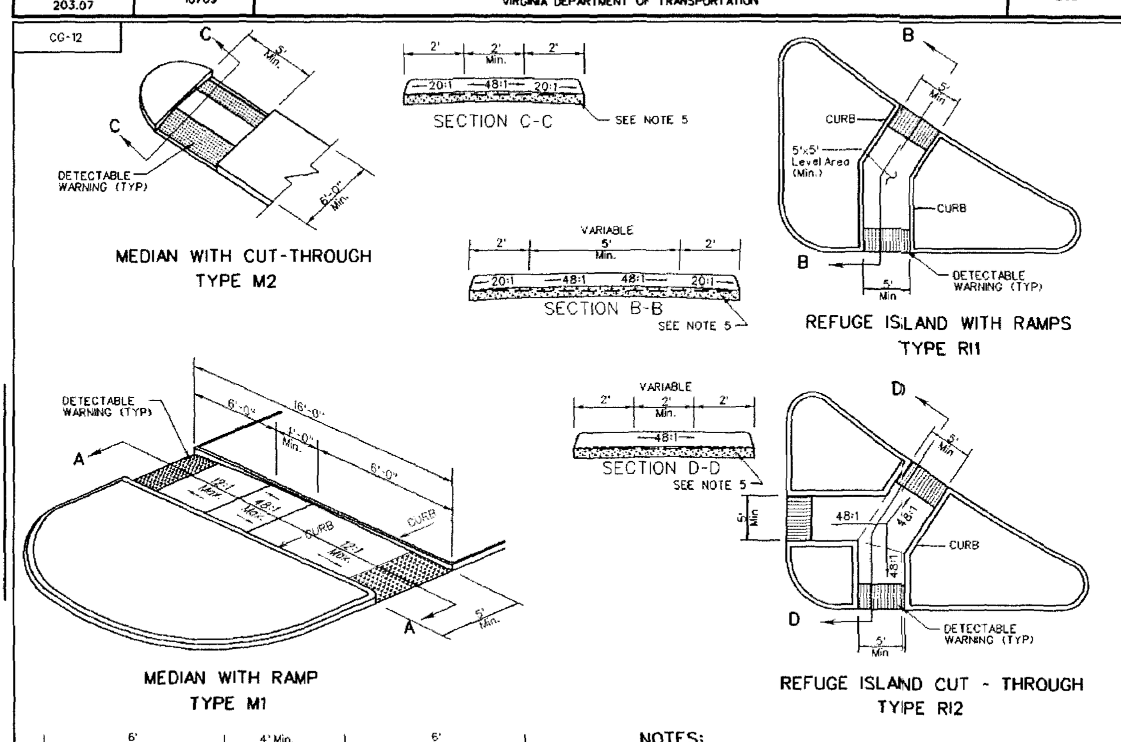
NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

THE SELECTION OF CURB TYPE AND THE CONFIGURATION OF THE BUFFER STRIP MAY VARY TO MEET EXISTING FIELD CONDITIONS AND ROADWAY GEOMETRICS PROVIDING THE DIMENSIONS AND SLOPES ARE AS NOTED.

THIS COMBINED (PARALLEL & PERPENDICULAR) DESIGN CAN BE USED WITH ADJOINING BUFFER STRIP. LANDING AT BOTTOM OF TWO SLOPING SIDES WITH 5' X 5' MIN. DIMENSIONS. THE SHORT PERPENDICULAR RUN TO THE STREET CAN BE PROTECTED BY A LANDSCAPED SETBACK OR CONNECTED TO THE SIDEWALK WITH A WARPED SURFACE.

SPECIFICATION REFERENCE 105, 502 — **CG-12 DETECTABLE WARNING SURFACE** TYPE C (PARALLEL & PERPENDICULAR) APPLICATION — VIRGINIA DEPARTMENT OF TRANSPORTATION — VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE 10/09 — SHEET 4 OF 5 — 203.08

CG-12

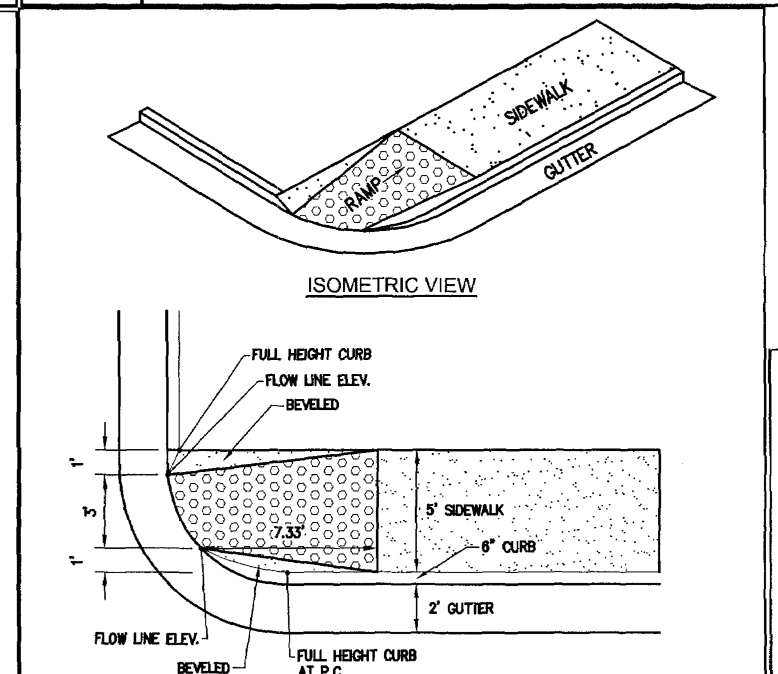


NOTES:
1. FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
2. CURB SHALL BE SHAPED TO MATCH THE FACE OF ROADWAY CURB.
3. SEE ROADWAY PLANS FOR MEDIAN AND REFUGE ISLAND DIMENSIONS.
4. RAMPS AND CUT THROUGH'S SHALL BE ALIGNED WITH CROSSWALKS.
5. THE RAMPS AND CUT THROUGH'S SHALL BE INSTALLED AND PAID FOR AS 4" HYDRAULIC CEMENT CONCRETE SIDEWALK IN ACCORDANCE WITH SECTION 504 OF THE ROAD & BRIDGE SPECIFICATIONS. EXCAVATION OF MATERIAL FOR THE INSTALLATION OF THE SIDEWALK SHALL BE INCLUDED IN THE PRICE BID FOR 4" HYDRAULIC CEMENT CONCRETE SIDEWALK.

VDOT ROAD AND BRIDGE STANDARDS — SHEET 5 OF 5 — REVISION DATE 08/10 — 203.08A

CG-12 DETECTABLE WARNING SURFACE MEDIAN AND REFUGE ISLAND APPLICATIONS

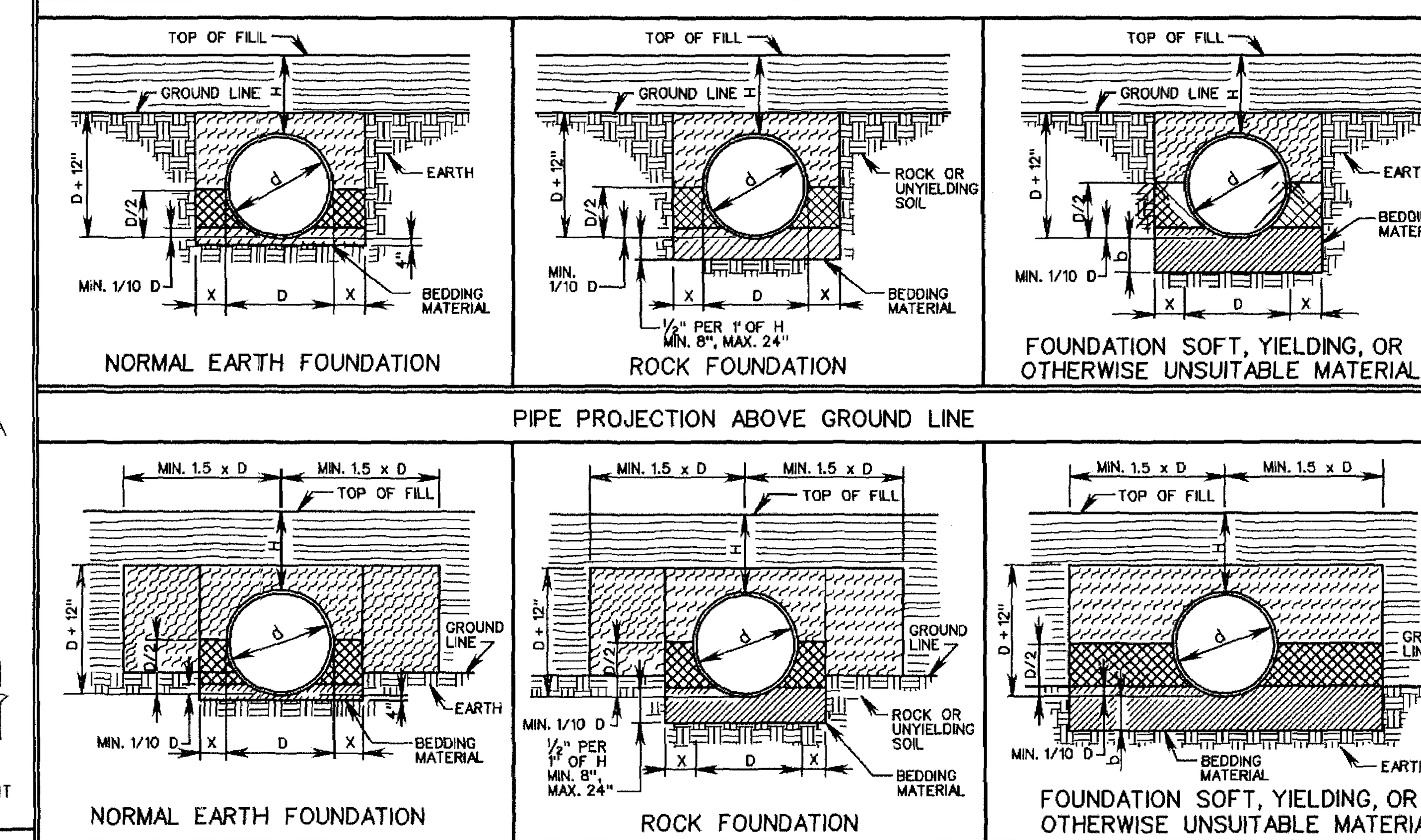
VIRGINIA DEPARTMENT OF TRANSPORTATION — SPECIFICATION REFERENCE 105, 502



MODIFIED CG-12
N.T.S.

PB-1

NO PROJECTION OF PIPE ABOVE GROUND LINE



BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

EMBANKMENT

NOTES:

FOR PLASTIC PIPE, THE LIMITS OF THE CLASS I BACKFILL MATERIAL SHALL BE EXTENDED TO 12" ABOVE THE TOP OF THE PIPE.

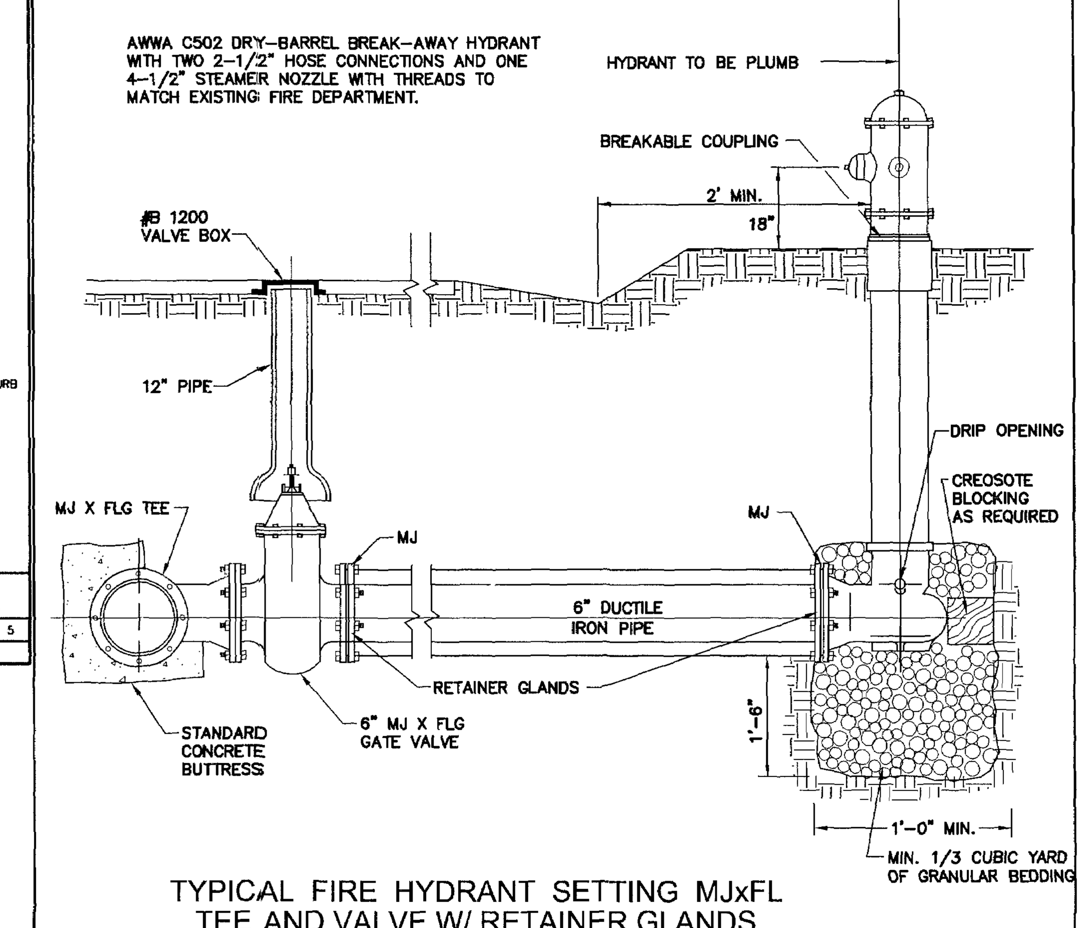
FOR GENERAL NOTES ON PIPE BEDDING, SEE INSTALLATION OF PIPE CULVERTS AND STORM SEWERS GENERAL NOTES ON SHEET 107.00.

CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 25 AND 26 MAY BE USED IN PLACE OF CLASS I BACKFILL.

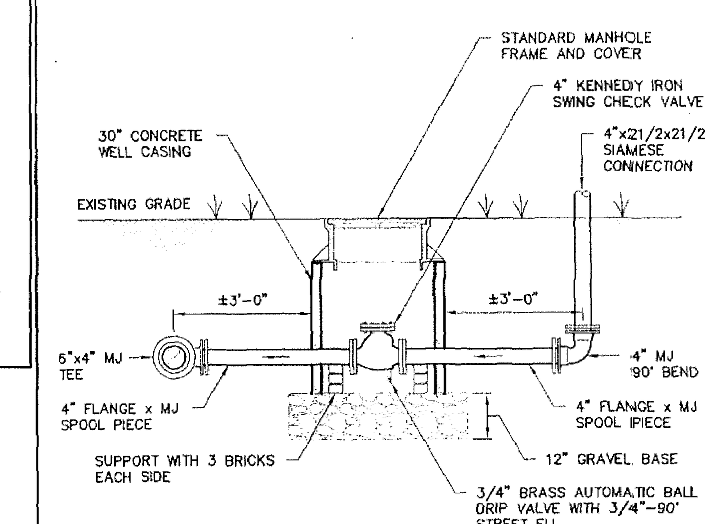
VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 4 — REVISION DATE — 107.01

INSTALL. OF PIPE CULVERTS AND STORM SEWERS CIRC. PIPE BEDDING AND BACKFILL - METHOD "A"

VIRGINIA DEPARTMENT OF TRANSPORTATION — SPECIFICATION REFERENCE 302, 303



TYPICAL FIRE HYDRANT SETTING MJxFL TEE AND VALVE W/ RETAINER GLANDS
N.T.S.



NOTE: ALL MJ FITTINGS SHALL BE RESTRAINED WITH MEGALUGS

FIRE DEPARTMENT CONNECTION W/ CHECK VALVE

JCSA GENERAL NOTES FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS
(Revised March 2008)

A. ALL COMPONENTS OF THE WATER DISTRIBUTION AND SANITARY SEWER SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS, THE HRPDC REGIONAL CONSTRUCTION STANDARDS (FOURTH EDITION WITH AMENDMENTS DATED OCTOBER 2006), AND THE COMMONWEALTH OF VIRGINIA DEPARTMENT OF HEALTH *WATERWORKS AND SANITARY SEWERAGE REGULATIONS*. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS, AND PRODUCTS ON ALL PROJECTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK. A COPY OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA AND HRPDC REGIONAL CONSTRUCTION STANDARDS MUST BE KEPT ON-SITE BY THE CONTRACTOR DURING TIME OF INSTALLING, TESTING, AND CONVEYING FACILITIES TO JCSA.

B. THE CONTRACTOR/DEVELOPER SHALL ACQUIRE A CERTIFICATE TO CONSTRUCT WATER AND SANITARY SEWER FACILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY WATER OR SANITARY SEWER FACILITIES.

C. A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN JCSA, THE DEVELOPER, THE CONTRACTOR INCLUDING RELEVANT SUBCONTRACTOR(S), AND THE PROJECT ENGINEER PRIOR TO ISSUANCE OF A JCSA CERTIFICATE TO CONSTRUCT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE THIS MEETING WITH JCSA AND COORDINATE WITH THE OTHER ATTENDEES.

D. THE DEVELOPER'S REPRESENTATIVE SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND RECEIVE JCSA APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL MATERIALS ORDERED AND INSTALLED PRIOR TO JCSA'S REVIEW AND ACCEPTANCE WILL BE AT THE CONTRACTOR'S/DEVELOPER'S RISK.

E. PIPE LINES AND SERVICES SHALL BE INSTALLED AFTER GRADING TO WITHIN 6-INCHES OF FINAL GRADE AND PRIOR TO PLACEMENT OF BASE MATERIAL.

F. ALL WATER MAINS SHALL BE FULLY FLUSHED, PRESSURE TESTED, AND DISINFECTED AND SATISFACTORY BACTERIOLOGICAL SAMPLES OBTAINED, IN ACCORDANCE WITH JCSA DESIGN AND ACCEPTANCE CRITERIA. FLUSHING OF WATER MAINS SHALL BE SCHEDULED WITH THE JCSA INSPECTOR MINIMUM 3 BUSINESS DAYS PRIOR TO THE FLUSHING. CONTRACTOR SHALL PROVIDE THE REQUIRED DURATION AND VOLUME TO THE INSPECTOR. FLUSHING WILL BE SCHEDULED ONLY ON MONDAYS, UNLESS AUTHORIZED OTHERWISE BY JCSA, AND WILL BE ON A FIRST COME-FIRST SERVE BASIS.

G. ROUTINE PERIODIC INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY JCSA. THESE INSPECTIONS DO NOT RELIEVE THE DEVELOPER/CONTRACTOR/OWNER FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING A WATER DISTRIBUTION AND SANITARY SEWER SYSTEM IN STRICT ACCORDANCE WITH THE JCSA DESIGN AND ACCEPTANCE CRITERIA.

H. ANY FIELD MODIFICATIONS OR CHANGES TO THE APPROVED PLANS SHALL BE VERIFIED AND CHECKED BY THE ENGINEER OF RECORD AND APPROVED BY JCSA PRIOR TO ANY FIELD MODIFICATIONS OR CHANGES. ALL APPROVED CHANGES AND FIELD MODIFICATIONS SHALL BE ACCURATELY INDICATED ON THE RECORD DRAWINGS.

I. ALL LOTS SHALL BE PROVIDED WITH WATER SERVICE AND SANITARY SEWER CONNECTIONS. THE CONNECTIONS SHALL BE EXTENDED FROM THE MAIN TO THE PROPERTY LINE OR EASEMENT LINE, AND SHALL TERMINATE WITH A YOKE IN A METER BOX, OR AT THE CLEAN OUT, SET AT FINAL FINISHED GRADE. METERS FOR ALL LOTS (UNITS) SHALL BE PAID FOR BY THE DEVELOPER OR BUILDER AND INSTALLED BY JCSA.

J. ANY REQUIRED EASEMENTS, PERMITS AND APPROVALS SHALL BE ACQUIRED BY THE DEVELOPER PRIOR TO COMMENCEMENT OF WATER MAIN AND/OR SANITARY SEWER CONSTRUCTION.

K. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION. THE CONTRACTOR SHALL ALSO NOTIFY "MISS UTILITY" AT 1-800-552-7001 OR 811 PRIOR TO PERFORMING ANY UNDERGROUND EXCAVATION.

L. WATER METER BOX INSTALLATION SHALL MAINTAIN A MINIMUM 18-INCH HORIZONTAL EDGE-TO-EDGE CLEARANCE FROM DRIVEWAYS AND/OR DRIVE PATHS, SIDEWALKS, BIKE PATHS, CURBING AND ADJACENT WATER METER BOXES.

M. ONLY JCSA PERSONNEL ARE AUTHORIZED TO OPERATE VALVES ON EXISTING JCSA WATER MAINS AND SANITARY FORCE MAINS. ONCE A SYSTEM HAS BEEN HYDRAULICALLY ENERGIZED, JCSA WILL BE RESPONSIBLE FOR OPERATING THE VALVES. THE CONTRACTOR SHALL CONTACT JCSA OPERATIONS AT 757-229-7421 IF THERE IS AN EMERGENCY OR NEED TO OPEN/CLOSE A VALVE.

N. ANY EXISTING UNUSED WELL(S) SHALL BE ABANDONED IN ACCORDANCE WITH STATE PRIVATE WELL REGULATIONS AND JAMES CITY COUNTY CODE.

O. BEDDING OF JCSA UTILITIES SHALL BE IN ACCORDANCE WITH HRPDC DETAIL EW_01.

P. NO TREES, SHRUBS, STRUCTURES, FENCES, IRRIGATION MAINS, INVISIBLE PET FENCES OR OTHER OBSTACLES SHALL BE PLACED WITHIN AN EASEMENT WHICH WOULD RENDER THE EASEMENT INACCESSIBLE BY EQUIPMENT. SHRUBS SHALL BE A MINIMUM OF 5 FEET, AND TREES A MINIMUM OF 10 FEET, FROM THE CENTER OF WATER AND SANITARY SEWER PIPELINES.

Q. JOINT RESTRAINT SHALL BE PROVIDED IN ACCORDANCE WITH MINIMUM REQUIREMENTS OF JCSA DETAIL JR.1, UNLESS SHOWN OTHERWISE ON THE PLANS. ALL PRESSURE PIPELINES SHALL HAVE JOINT RESTRAINT. FIRE HYDRANTS SHALL BE RESTRAINED AT LEAST ONE FULL JOINT OF PIPE IN EACH DIRECTION ON THE MAINLINE.

R. PROPOSED WATER AND SANITARY SEWER SYSTEMS SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 5-FEET FROM OTHER UTILITIES AND STRUCTURES, INCLUDING BUT NOT LIMITED TO STORM SEWERS, STREET LIGHTS, ETC. WATER AND SANITARY SEWER FACILITIES SHALL HAVE A MINIMUM 10-FOOT HORIZONTAL EDGE-TO-EDGE SEPARATION.

S. ANY PROPOSED BACKFLOW PREVENTION DEVICE AND/OR GREASE TRAP MUST BE INSPECTED BY THE JCSA UTILITY SPECIAL PROJECTS COORDINATOR AT (757) 259-4138.

T. THE CONTRACTOR/DEVELOPER SHALL ACQUIRE A CERTIFICATE TO CONSTRUCT WATER AND SANITARY SEWER FACILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY WATER OR SANITARY SEWER FACILITIES. PLUMBING INSIDE OF PROPOSED BUILDINGS MUST BE INSPECTED BY JCSA'S UTILITY SPECIAL PROJECTS COORDINATOR AT (757) 259-4138, FOR POTENTIAL CROSS CONNECTIONS. ANY CROSS CONNECTIONS MUST BE PROTECTED BY THE APPROPRIATE BACKFLOW PREVENTION DEVICE(S)".

U. EASEMENTS DENOTED AS "JCSA UTILITY EASEMENTS" ARE FOR THE EXCLUSIVE USE OF THE JAMES CITY SERVICE AUTHORITY AND THE PROPERTY OWNER. OTHER UTILITY SERVICE PROVIDERS DESIRING TO USE THESE EASEMENTS WITH THE EXCEPTION OF PERPENDICULAR UTILITY CROSSINGS MUST OBTAIN AUTHORIZATION FOR ACCESS AND USE FROM JCSA AND THE PROPERTY OWNER. ADDITIONALLY, JCSA SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE TO IMPROVEMENTS WITHIN THIS EASEMENT, FROM ANY CAUSE.

V. JCSA SHALL NOT BE HELD RESPONSIBLE FOR ANY PAVEMENT SETTLEMENT DUE TO PIPE BEDDING, BACKFILLING, BACKFILL MATERIALS OR COMPACTION FOR WATER OR SANITARY SEWER FACILITIES FOR THIS PROJECT.

W. FIRE HYDRANTS TO BE INSTALLED WITHIN EXISTING OR PROPOSED VDOT RIGHT-OF-WAYS SHALL BE LOCATED IN ACCORDANCE WITH VDOT REQUIREMENTS.

X. PRIVATELY OWNED UTILITIES, (E.G., WATER AND SEWER LINES AND PRIVATE FIRE SERVICE MAINS), SHOWN ON THIS PLAN ARE REGULATED BY THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE, AND ENFORCED BY THE JAMES CITY COUNTY CODES COMPLIANCE DIVISION. THESE PRIVATELY OWNED UTILITIES MUST COMPLY FULLY WITH THE INTERNATIONAL PLUMBING CODE, THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 24, AND THE VIRGINIA STATEWIDE FIRE PREVENTION CODE. CONTRACTORS WORKING FROM THIS SITE PLAN ARE CAUTIONED NOT TO INSTALL OR CONCEAL PRIVATELY OWNED SITE UTILITIES WITHOUT FIRST OBTAINING THE REQUIRED PERMITS AND INSPECTIONS.

Y. SANITARY SEWER LATERALS SHALL NOT CONNECT TO THE MAINLINE WITHIN 5-FEET OF A MANHOLE. LATERALS UPSTREAM AND WITHIN 5-FEET OF THE MANHOLE SHALL CONNECT DIRECTLY INTO THE MANHOLE WHERE NECESSARY.

JCSA DETAIL REFERENCES

WATER DISTRIBUTION DETAILS
W15.0 – 1-1/2" & 2" WATER METER SETTING
W17.0 – DETECTOR CHECK VALVE ASSEMBLY FOR FIRE SUPPRESSION SYSTEMS

MISCELLANEOUS DETAILS
PC.1 – PIPE CROSSING DETAIL

HRPDC DETAIL REFERENCES

SANITARY SYSTEMS (SS)
SS_01 STANDARD PRECAST CONCRETE MANHOLE W/ EXTENDED MONOLITHIC BASE *
SS_07 SANITARY SEWER MANHOLE INVERT SHAPING
SS_08 CONNECTION INTO EXISTING MANHOLES
SS_09 SANITARY SEWER MANHOLE CASTING (24")
SS_10 SANITARY SEWER MANHOLE COVER (24")
SS_11 SANITARY SEWER LATERAL CLEAN OUT FRAME AND COVER
SS_12 SANITARY SERVICE LATERAL CLEAN OUT FRAME AND COVER FOR HEAVY LOADS
SS_13 SANITARY SEWER MAIN LINE CLEAN OUT BOX
SS_14 SANITARY SEWER SERVICE CONNECTION *

EARTHWORK (EW)
EW_01 PIPE BEDDING DETAILS

* REFER TO SPECIAL PROVISIONS TO REGIONAL STANDARDS (2nd EDITION, JUNE 2001) (APPENDIX A TO JCSA STANDARDS AND SPECIFICATIONS)

Rev.	Date	Description	Revised By
4	2/23/11	Revised forVDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

COMMONWEALTH OF VIRGINIA — MATTHEW J. REMBOLD — Lic. No. 045773 — 2/23/11 — PROFESSIONAL ENGINEER

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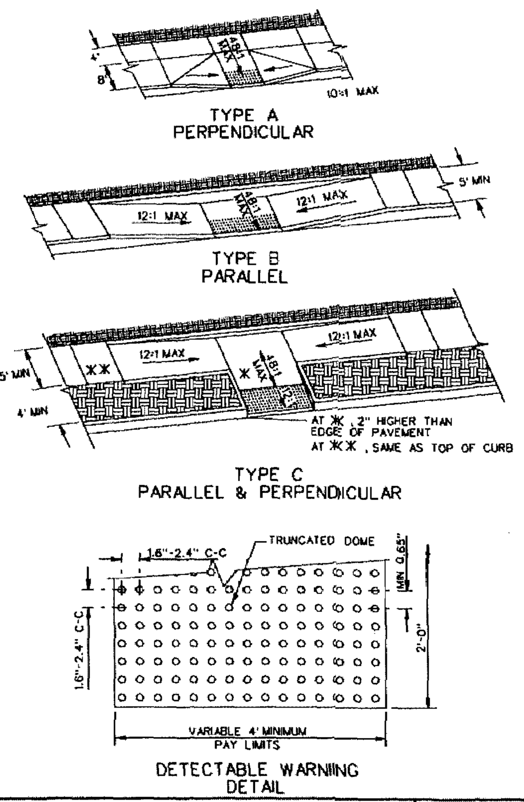
Stonehouse District — James City County — Virginia

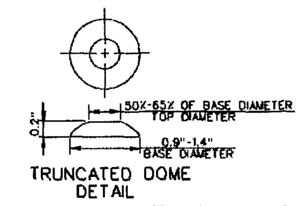
Project Contacts: RAC/MJR/SVC
Project Number: 9510-04
Scale: 1"=30'
Date: 9/3/2010
Sheet Title: Notes & Details
Sheet Number 23

CG-12

GENERAL NOTES:

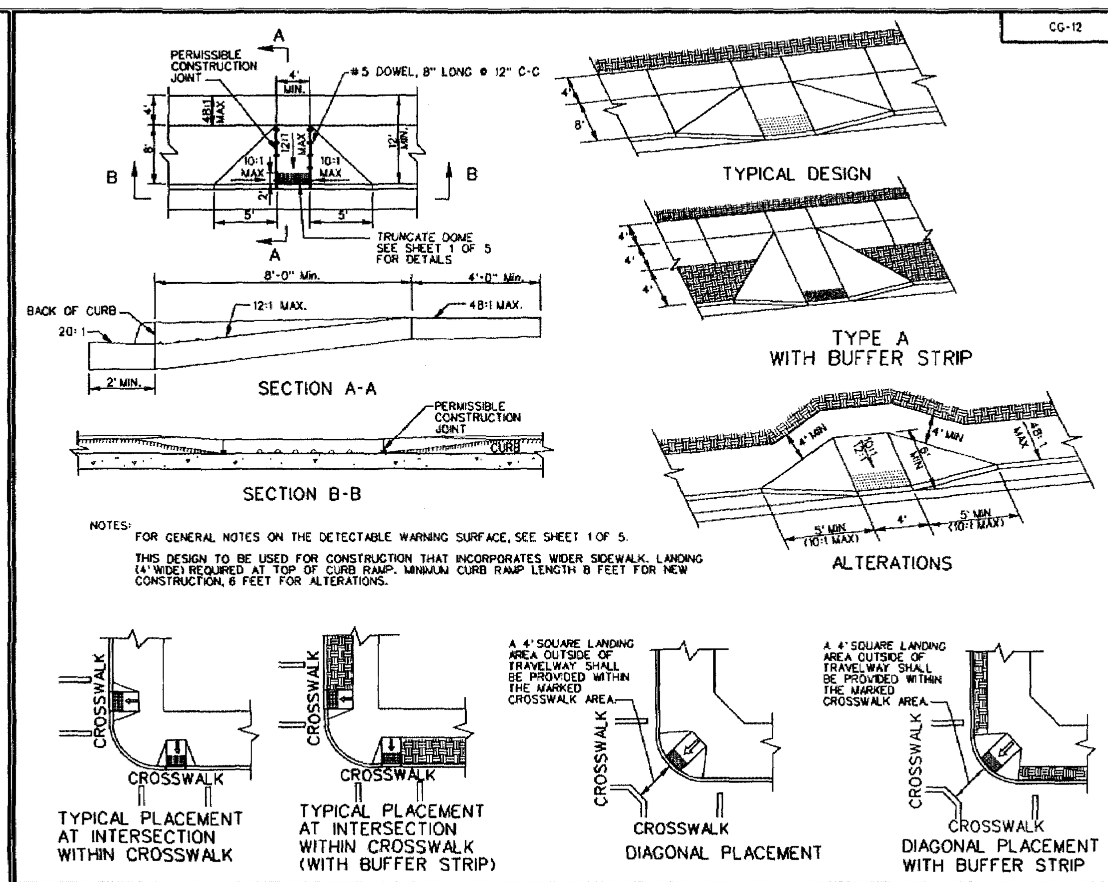
1. THE DETECTABLE WARNING SHALL BE PROVIDED BY TRUNCATED DOMES.
2. DETECTABLE WARNING TO BE CLASS A-3 CONCRETE (CLASS A-4 IF PRECAST) WITH SLIP RESISTANT INTEGRAL SURFACE COVERING THE FULL WIDTH OF THE RAMP FLOOR BY 2 FOOT IN LENGTH IN THE DIRECTION OF PEDESTRIAN TRAVEL. OTHER TYPES OF MATERIAL WITH THE TRUNCATED DOMES DETECTABLE WARNING MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
3. SLOPING SIDES OF CURB RAMP MAY BE POURED MONOLITHICALLY WITH RAMP FLOOR OR BY USING PERMISSIBLE CONSTRUCTION JOINT WITH REQUIRED BARS.
4. IF RAMP FLOOR IS PRECAST, HOLES MUST BE PROVIDED FOR DOWEL BARS SO THAT ADJOINING FLARED SIDES CAN BE CAST IN PLACE AFTER PLACEMENT OF PRECAST RAMP FLOOR. PRECAST CONCRETE SHALL BE CLASS A-4.
5. REQUIRED BARS ARE TO BE NO. 5 X 8" PLACED 1' CENTER TO CENTER ALONG BOTH SIDES OF THE RAMP FLOOR, MID-DEPTH OF RAMP FLOOR. MINIMUM CONCRETE COVER 1½".
6. CURB / CURB AND GUTTER SLOPE TRANSITIONS ADJACENT TO CURB RAMPS ARE INCLUDED IN PAYMENT FOR CURB / CURB AND GUTTER.
7. CURB RAMPS ARE TO BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THEY ARE TO BE PROVIDED AT INTERSECTIONS WHEREVER AN ACCESSIBLE ROUTE WITHIN THE RIGHT OF WAY OF A HIGHWAY FACILITY CROSSES A CURB REGARDLESS OF WHETHER SIDEWALK IS EXISTING, PROPOSED, OR NONEXISTENT. THEY MUST BE LOCATED WITHIN PEDESTRIAN CROSSWALKS AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER, AND SHOULD NOT BE LOCATED BEHIND VEHICLE STOP LINES, EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. ACCESSIBLE ROUTES PROVIDE A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.
8. RAMPS MAY BE PLACED ON RADIAL OR TANGENTIAL SECTIONS PROVIDED THAT THE CURB OPENING IS PLACED WITHIN THE LIMITS OF THE CROSSWALK AND THAT THE SLOPE AT THE CONNECTION OF THE CURB OPENING IS PERPENDICULAR TO THE CURB.
9. TYPICAL CONCRETE SIDEWALK IS 4" THICK. WHEN THE ENTRANCE RADII CANNOT ACCOMMODATE THE TURNING REQUIREMENTS OF ANTICIPATED HEAVY TRUCK TRAFFIC, REFER TO STANDARD CG-13, COMMERCIAL ENTRANCE (HEAVY TRUCK TRAFFIC) FOR CONCRETE DEPTH.
10. WHEN CURB RAMPS ARE USED IN CONJUNCTION WITH A SHARED USE PATH, THE MINIMUM WIDTH SHALL BE THE WIDTH OF THE SHARED USE PATH
11. WHEN ONLY ONE CURB RAMP IS PROVIDED FOR TWO CROSSINGS (DIAGONAL), A 4' x 4' LANDING AREA SHALL BE PROVIDED TO MANEUVER A WHEELCHAIR INTO THE CROSSWALK WITHOUT GOING INTO THE TRAVELWAY. THIS 4' x 4' LANDING AREA MAY INCLUDE THE GUTTER PAN.





VDOT ROAD AND BRIDGE STANDARDS | SHEET 1 OF 5 | REVISION DATE 10/09 | 203.05

CG-12 DETECTABLE WARNING SURFACE
(GENERAL NOTES)
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 105 502

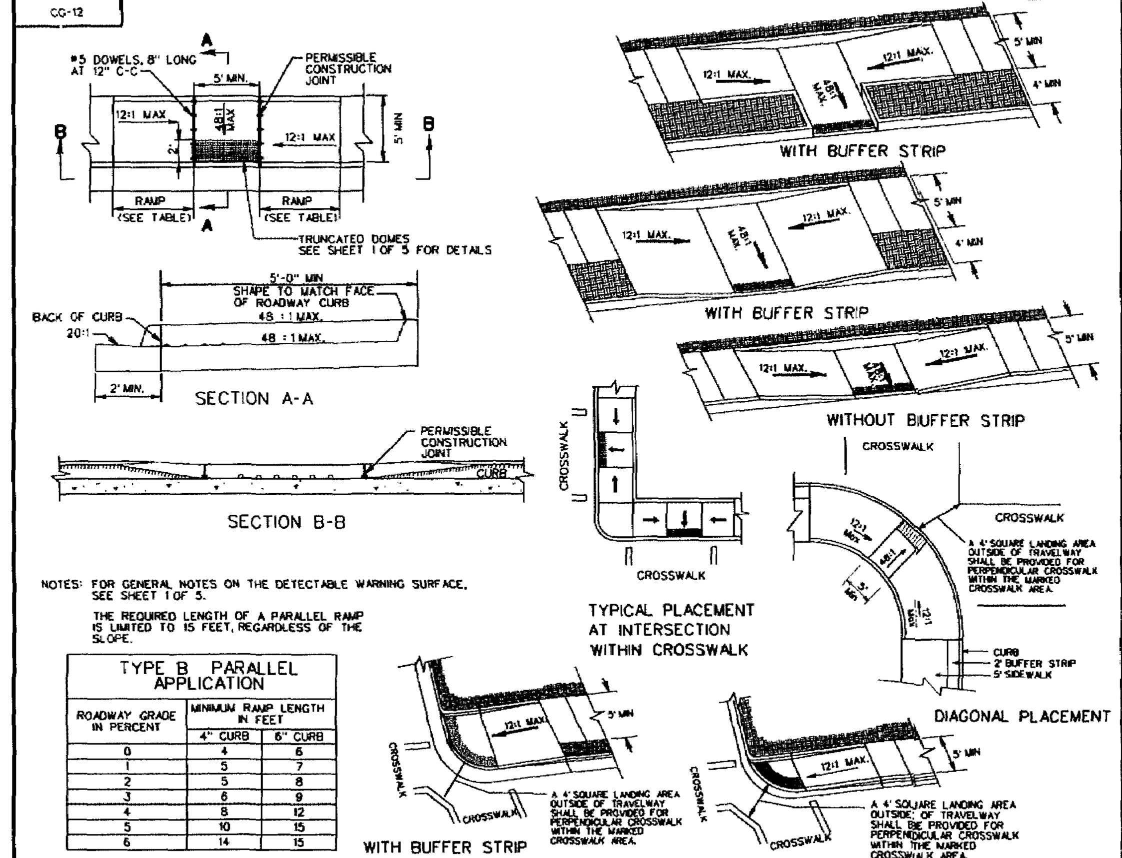


NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
THIS DESIGN TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDER SIDEWALK. LANDING (4' WIDE) REQUIRED AT TOP OF CURB RAMP. MINIMUM CURB RAMP LENGTH 8 FEET FOR NEW CONSTRUCTION, 6 FEET FOR ALTERATIONS.

SPECIFICATION REFERENCE 105 502

CG-12 DETECTABLE WARNING SURFACE
TYPE A (PERPENDICULAR) APPLICATION
VIRGINIA DEPARTMENT OF TRANSPORTATION
VDOT ROAD AND BRIDGE STANDARDS | REVISION DATE 10/09 | SHEET 2 OF 5 | 203.06

CG-12



NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.

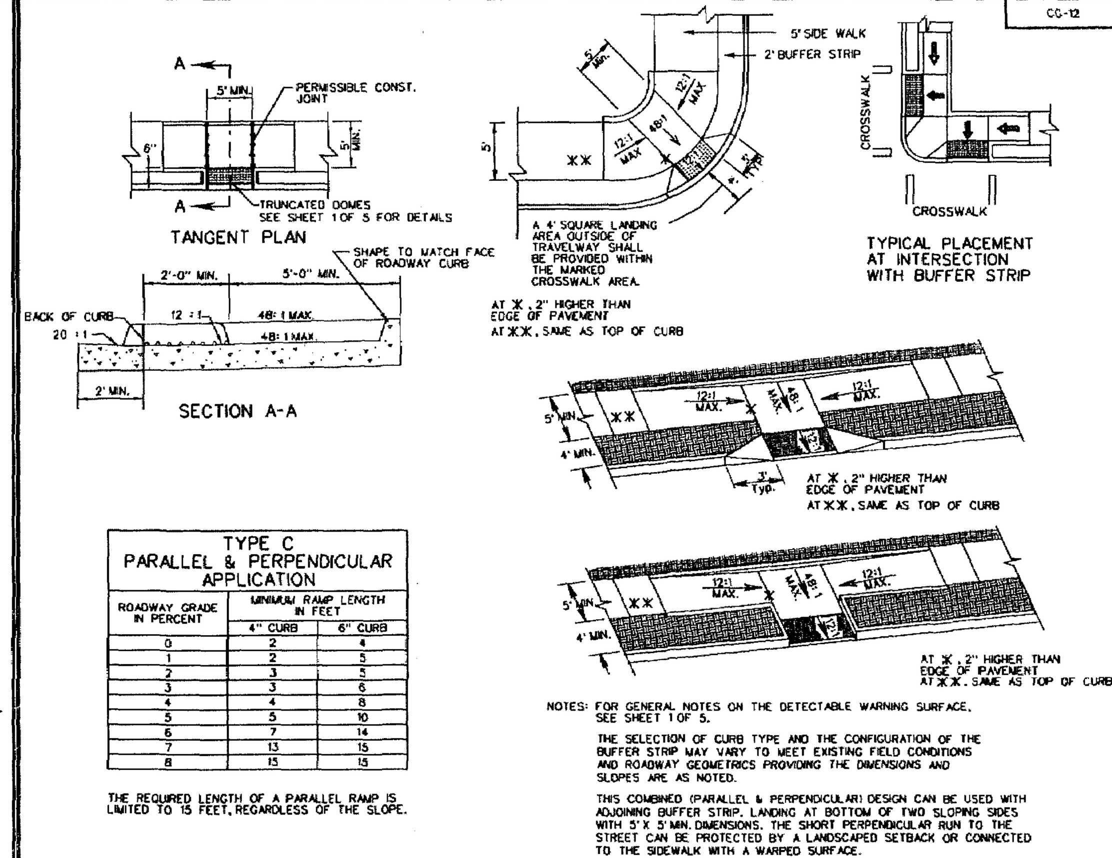
TYPE B PARALLEL APPLICATION

ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET 4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15

VDOT ROAD AND BRIDGE STANDARDS | SHEET 3 OF 5 | REVISION DATE 10/09 | 203.07

CG-12 DETECTABLE WARNING SURFACE
TYPE B (PARALLEL) APPLICATION
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 105 502

CG-12



TYPE C PARALLEL & PERPENDICULAR APPLICATION

ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET 4" CURB	6" CURB
0	2	4
1	2	5
2	3	5
3	3	6
4	4	8
5	5	10
6	7	14
7	13	15
8	15	15

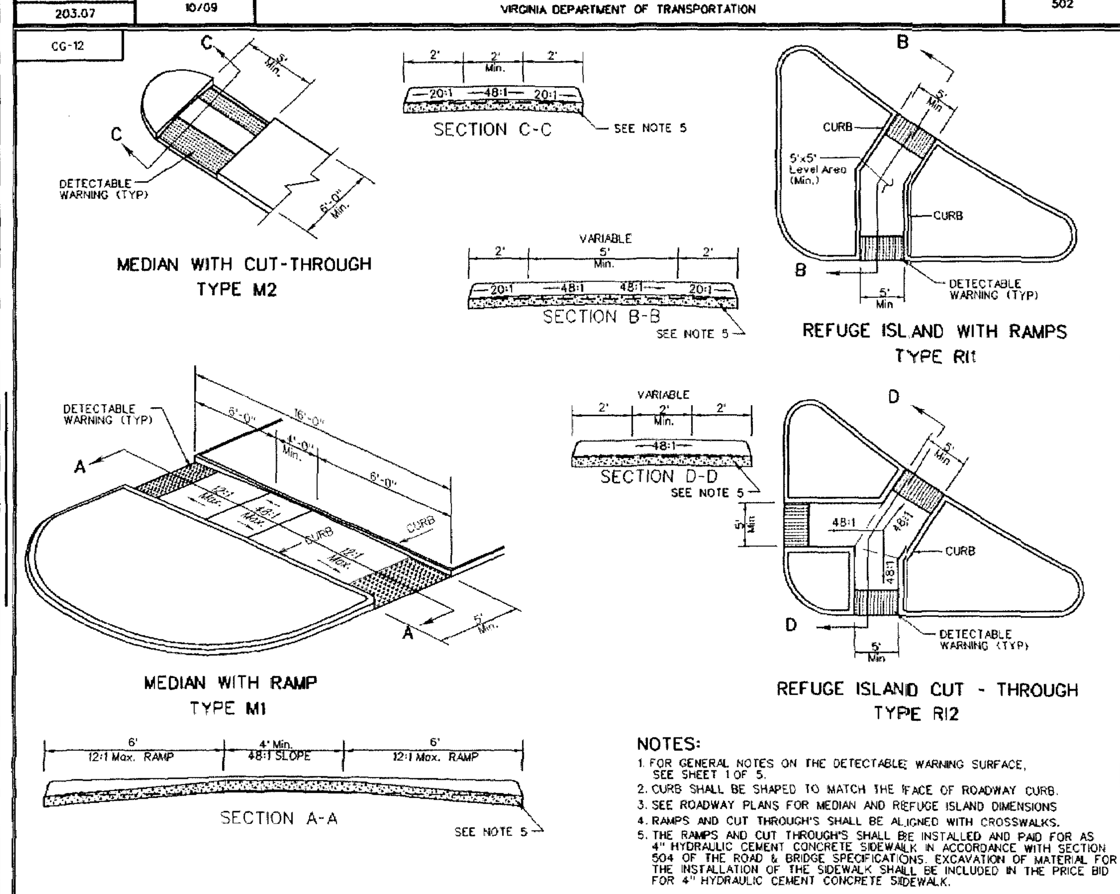
THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.

NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
THE SELECTION OF CURB TYPE AND THE CONFIGURATION OF THE BUFFER STRIP MAY VARY TO MEET EXISTING FIELD CONDITIONS AND ROADWAY GEOMETRICS PROVIDING THE DIMENSIONS AND SLOPES ARE AS NOTED.
THIS COMBINED (PARALLEL & PERPENDICULAR) DESIGN CAN BE USED WITH ADJOINING BUFFER STRIP. LANDING AT BOTTOM OF TWO SLOPING SIDES WITH 5' X 5' MIN. DIMENSIONS. THE SHORT PERPENDICULAR RUN TO THE STREET CAN BE PROTECTED BY A LANDSCAPED SETBACK OR CONNECTED TO THE SIDEWALK WITH A WARPED SURFACE.

SPECIFICATION REFERENCE 105 502

CG-12 DETECTABLE WARNING SURFACE
TYPE C (PARALLEL & PERPENDICULAR) APPLICATION
VIRGINIA DEPARTMENT OF TRANSPORTATION
VDOT ROAD AND BRIDGE STANDARDS | REVISION DATE 10/09 | SHEET 4 OF 5 | 203.08

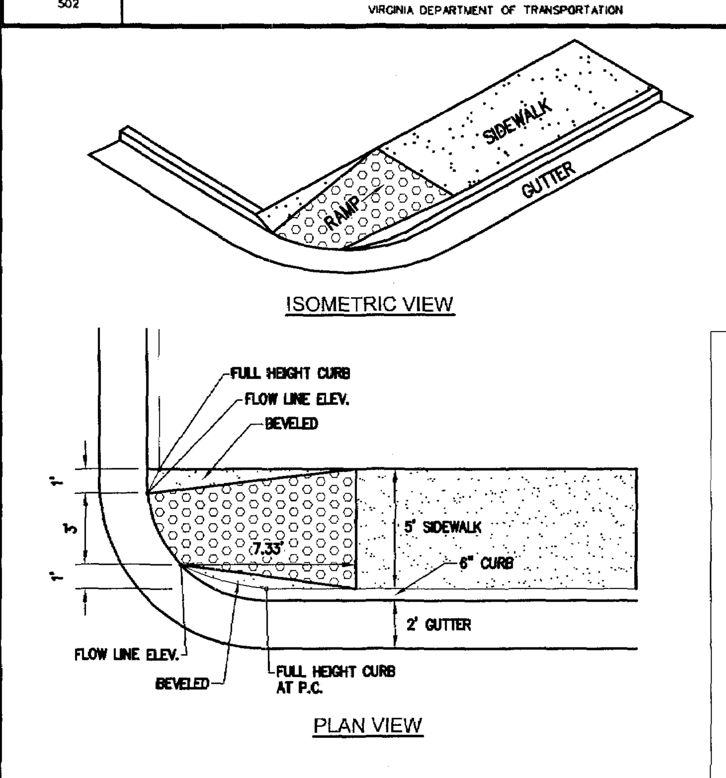
CG-12



NOTES:
1. FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
2. CURB SHALL BE SHAPED TO MATCH THE FACE OF ROADWAY CURB.
3. SEE ROADWAY PLANS FOR MEDIAN AND REFUGE ISLAND DIMENSIONS
4. RAMPS AND CUT THROUGH'S SHALL BE ALIGNED WITH CROSSWALKS.
5. THE RAMPS AND CUT THROUGH'S SHALL BE INSTALLED AND PAID FOR AS 4" HYDRAULIC CEMENT CONCRETE SIDEWALK IN ACCORDANCE WITH SECTION 504 OF THE ROAD & BRIDGE SPECIFICATIONS. EXCAVATION OF MATERIAL FOR THE INSTALLATION OF THE SIDEWALK SHALL BE INCLUDED IN THE PRICE BID FOR 4" HYDRAULIC CEMENT CONCRETE SIDEWALK.

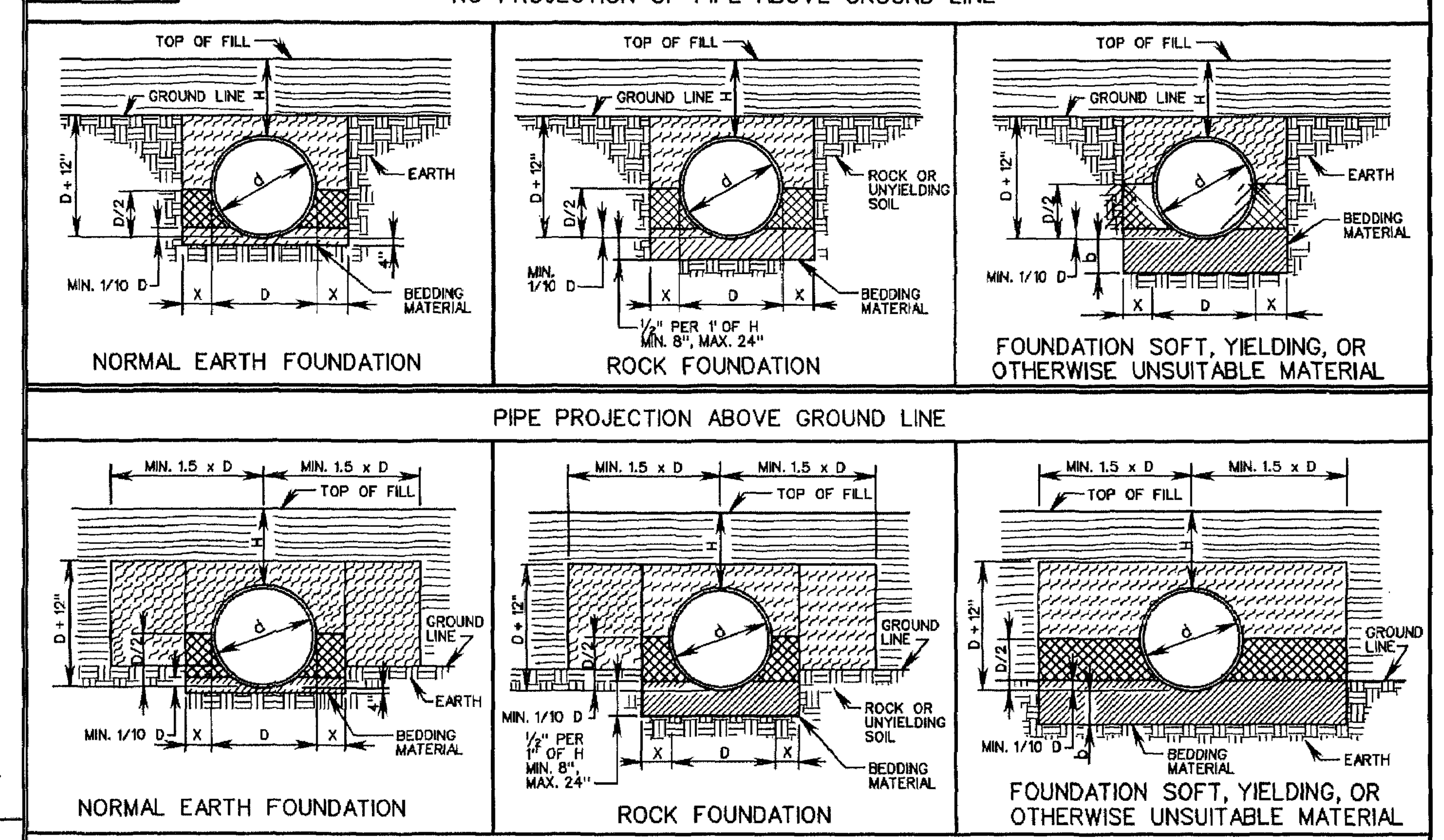
VDOT ROAD AND BRIDGE STANDARDS | SHEET 5 OF 5 | REVISION DATE 08/10 | 203.08A

CG-12 DETECTABLE WARNING SURFACE
MEDIAN AND REFUGE ISLAND APPLICATIONS
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 105 502



MODIFIED CG-12
N.T.S.

PB-1

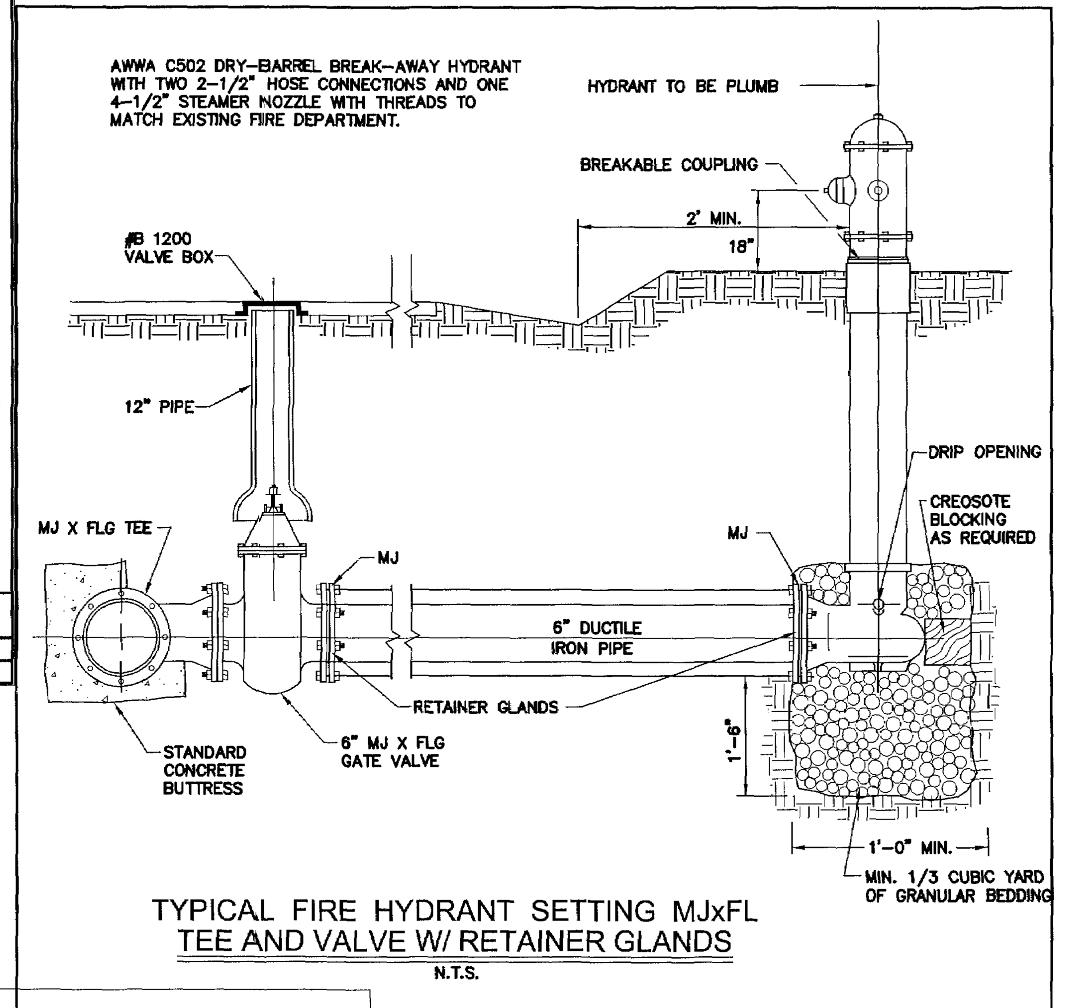


- BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
- CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
- REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
- EMBANKMENT

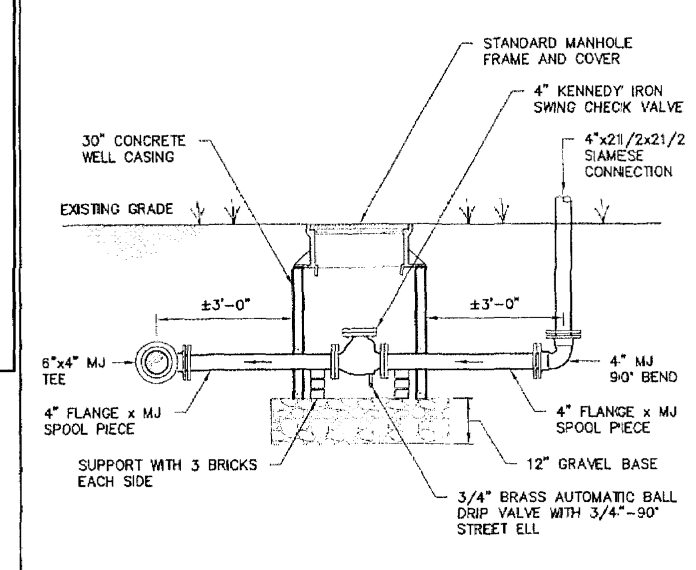
NOTES:
FOR PLASTIC PIPE, THE LIMITS OF THE CLASS I BACKFILL MATERIAL SHALL BE EXTENDED TO 12" ABOVE THE TOP OF THE PIPE.
FOR GENERAL NOTES ON PIPE BEDDING, SEE INSTALLATION OF PIPE CULVERTS AND STORM SEWERS GENERAL NOTES ON SHEET 107.00.
CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 25 AND 26 MAY BE USED IN PLACE OF CLASS I BACKFILL.

VDOT ROAD AND BRIDGE STANDARDS | SHEET 1 OF 4 | REVISION DATE | 107.01

INSTALL. OF PIPE CULVERTS AND STORM SEWERS CIRC. PIPE BEDDING AND BACKFILL - METHOD "A"
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 302 303



TYPICAL FIRE HYDRANT SETTING MJxFL TEE AND VALVE W/ RETAINER GLANDS
N.T.S.



NOTE: ALL MJ FITTINGS SHALL BE RESTRAINED WITH MEGALUGS

FIRE DEPARTMENT CONNECTION W/ CHECK VALVE

JCSA GENERAL NOTES FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS
(Revised March 2008)

A. ALL COMPONENTS OF THE WATER DISTRIBUTION AND SANITARY SEWER SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS, THE HRPDC REGIONAL CONSTRUCTION STANDARDS (FOURTH EDITION WITH AMENDMENTS DATED OCTOBER 2006), AND THE COMMONWEALTH OF VIRGINIA DEPARTMENT OF HEALTH *WATERWORKS AND SANITARY SEWERAGE REGULATIONS*. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS, AND PRODUCTS ON ALL PROJECTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK. A COPY OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA AND HRPDC REGIONAL CONSTRUCTION STANDARDS MUST BE KEPT ON-SITE BY THE CONTRACTOR DURING TIME OF INSTALLING, TESTING, AND CONVEYING FACILITIES TO JCSA.

B. THE CONTRACTOR/DEVELOPER SHALL ACQUIRE A CERTIFICATE TO CONSTRUCT WATER AND SANITARY SEWER FACILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY WATER OR SANITARY SEWER FACILITIES.

C. A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN JCSA, THE DEVELOPER, THE CONTRACTOR INCLUDING RELEVANT SUBCONTRACTOR(S), AND THE PROJECT ENGINEER PRIOR TO ISSUANCE OF A JCSA CERTIFICATE TO CONSTRUCT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE THIS MEETING WITH JCSA AND COORDINATE WITH THE OTHER ATTENDEES.

D. THE DEVELOPER'S REPRESENTATIVE SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND RECEIVE JCSA APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL MATERIALS ORDERED AND INSTALLED PRIOR TO JCSA'S REVIEW AND ACCEPTANCE WILL BE AT THE CONTRACTOR'S/DEVELOPER'S RISK.

E. PIPE LINES AND SERVICES SHALL BE INSTALLED AFTER GRADING TO WITHIN 6-INCHES OF FINAL GRADE AND PRIOR TO PLACEMENT OF BASE MATERIAL.

F. ALL WATER MAINS SHALL BE FULLY FLUSHED, PRESSURE TESTED, AND DISINFECTED AND SATISFACTORY BACTERIOLOGICAL SAMPLES OBTAINED, IN ACCORDANCE WITH JCSA DESIGN AND ACCEPTANCE CRITERIA. FLUSHING OF WATER MAINS SHALL BE SCHEDULED WITH THE JCSA INSPECTOR MINIMUM 3 BUSINESS DAYS PRIOR TO THE FLUSHING. CONTRACTOR SHALL PROVIDE THE REQUIRED DURATION AND VOLUME TO THE INSPECTOR. FLUSHING WILL BE SCHEDULED ONLY ON MONDAYS, UNLESS AUTHORIZED OTHERWISE BY JCSA, AND WILL BE ON A FIRST COME-FIRST SERVE BASIS.

G. ROUTINE PERIODIC INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY JCSA. THESE INSPECTIONS DO NOT RELIEVE THE DEVELOPER/CONTRACTOR/OWNER FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING A WATER DISTRIBUTION AND SANITARY SEWER SYSTEM IN STRICT ACCORDANCE WITH THE JCSA DESIGN AND ACCEPTANCE CRITERIA.

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I. ALL LOTS SHALL BE PROVIDED WITH WATER SERVICE AND SANITARY SEWER CONNECTIONS. THE CONNECTIONS SHALL BE EXTENDED FROM THE MAIN TO THE PROPERTY LINE OR EASEMENT LINE, AND SHALL TERMINATE WITH A YOKE IN A METER BOX, OR AT THE CLEAN OUT, SET AT FINAL FINISHED GRADE. METERS FOR ALL LOTS (UNITS) SHALL BE PAID FOR BY THE DEVELOPER OR BUILDER AND INSTALLED BY JCSA.

J. ANY REQUIRED EASEMENTS, PERMITS AND APPROVALS SHALL BE ACQUIRED BY THE DEVELOPER PRIOR TO COMMENCEMENT OF WATER MAIN AND/OR SANITARY SEWER CONSTRUCTION.

K. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION. THE CONTRACTOR SHALL ALSO NOTIFY "MISS UTILITY" AT 1-800-552-7001 OR 811 PRIOR TO PERFORMING ANY UNDERGROUND EXCAVATION.

L. WATER METER BOX INSTALLATION SHALL MAINTAIN A MINIMUM 18-INCH HORIZONTAL EDGE-TO-EDGE CLEARANCE FROM DRIVEWAYS AND/OR DRIVE PATHS, SIDEWALKS, BIKE PATHS, CURBING AND ADJACENT WATER METER BOXES.

M. ONLY JCSA PERSONNEL ARE AUTHORIZED TO OPERATE VALVES ON EXISTING JCSA WATER MAINS AND SANITARY FORCE MAINS. ONCE A SYSTEM HAS BEEN HYDRAULICALLY ENERGIZED, JCSA WILL BE RESPONSIBLE FOR OPERATING THE VALVES. THE CONTRACTOR SHALL CONTACT JCSA OPERATIONS AT 757-229-7421 IF THERE IS AN EMERGENCY OR NEED TO OPEN/CLOSE A VALVE.

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O. BEDDING OF JCSA UTILITIES SHALL BE IN ACCORDANCE WITH HRPDC DETAIL EW_01.

P. NO TREES, SHRUBS, STRUCTURES, FENCES, IRRIGATION MAINS, INVISIBLE PET FENCES OR OTHER OBSTACLES SHALL BE PLACED WITHIN AN EASEMENT WHICH WOULD RENDER THE EASEMENT INACCESSIBLE BY EQUIPMENT. SHRUBS SHALL BE A MINIMUM OF 5 FEET, AND TREES A MINIMUM OF 10 FEET, FROM THE CENTER OF WATER AND SANITARY SEWER PIPELINES.

Q. JOINT RESTRAINT SHALL BE PROVIDED IN ACCORDANCE WITH MINIMUM REQUIREMENTS OF JCSA DETAIL JR.1, UNLESS SHOWN OTHERWISE ON THE PLANS. ALL PRESSURE PIPELINES SHALL HAVE JOINT RESTRAINT. FIRE HYDRANTS SHALL BE RESTRAINED AT LEAST ONE FULL JOINT OF PIPE IN EACH DIRECTION ON THE MAINLINE.

R. PROPOSED WATER AND SANITARY SEWER SYSTEMS SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 5-FEET FROM OTHER UTILITIES AND STRUCTURES, INCLUDING BUT NOT LIMITED TO STORM SEWERS, STREET LIGHTS, ETC. WATER AND SANITARY SEWER FACILITIES SHALL HAVE A MINIMUM 10-FOOT HORIZONTAL EDGE-TO-EDGE SEPARATION.

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W15.0 – 1-1/2" & 2" WATER METER SETTING
W17.0 – DETECTOR CHECK VALVE ASSEMBLY FOR FIRE SUPPRESSION SYSTEMS

MISCELLANEOUS DETAILS
PC.1 – PIPE CROSSING DETAIL

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SS_07 SANITARY SEWER MANHOLE INVERT SHAPING
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SS_09 SANITARY SEWER MANHOLE CASTING (24")
SS_10 SANITARY SEWER MANHOLE COVER (24")
SS_11 SANITARY SEWER LATERAL CLEAN OUT FRAME AND COVER
SS_12 SANITARY SERVICE LATERAL CLEAN OUT FRAME AND COVER FOR HEAVY LOADS
SS_13 SANITARY SEWER MAIN LINE CLEAN OUT BOX
SS_14 SANITARY SEWER SERVICE CONNECTION *

EARTHWORK (EW)
EW_01 PIPE BEDDING DETAILS (TYPE 3)

* REFER TO SPECIAL PROVISIONS TO REGIONAL STANDARDS (2nd EDITION, JUNE 2001) (APPENDIX A TO JCSA STANDARDS AND SPECIFICATIONS)

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised R/W Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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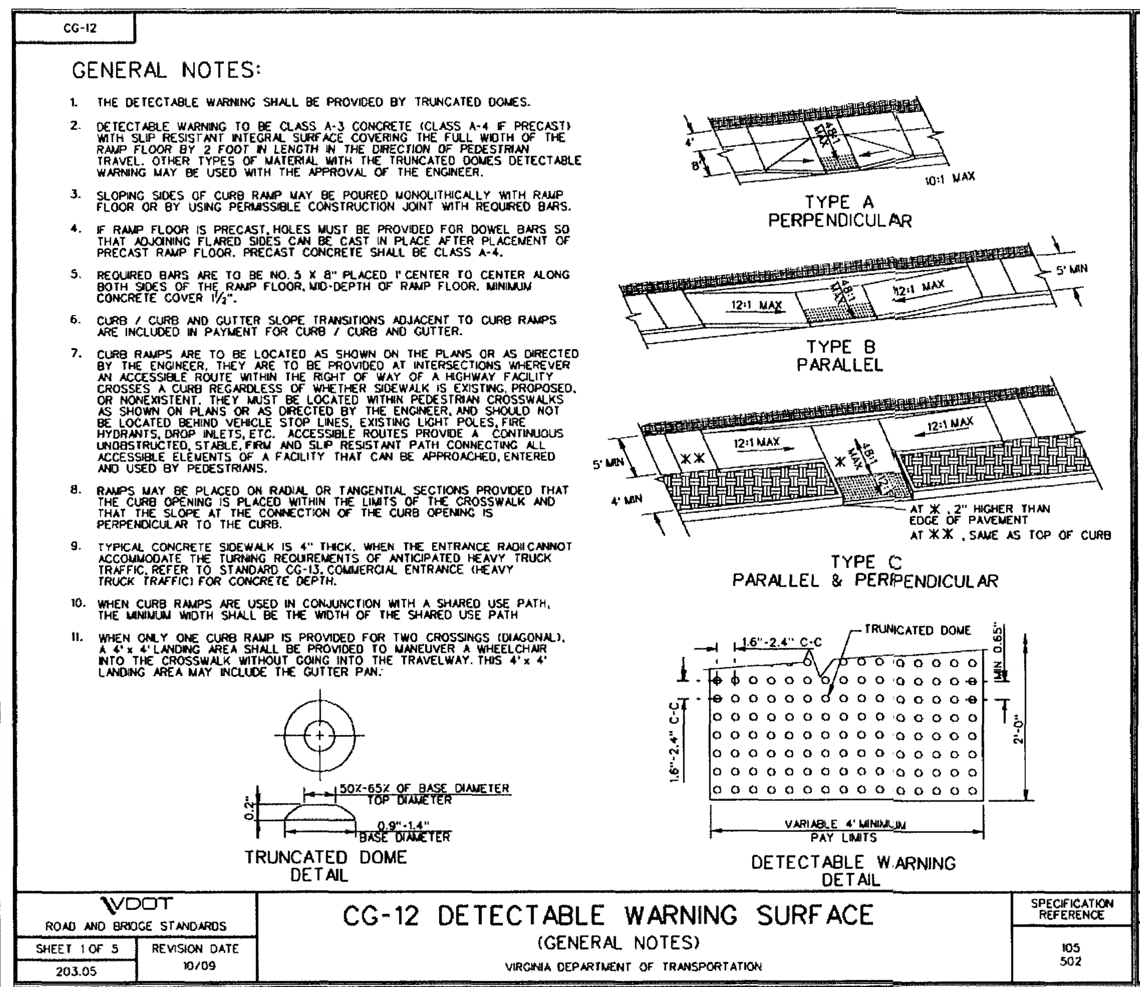
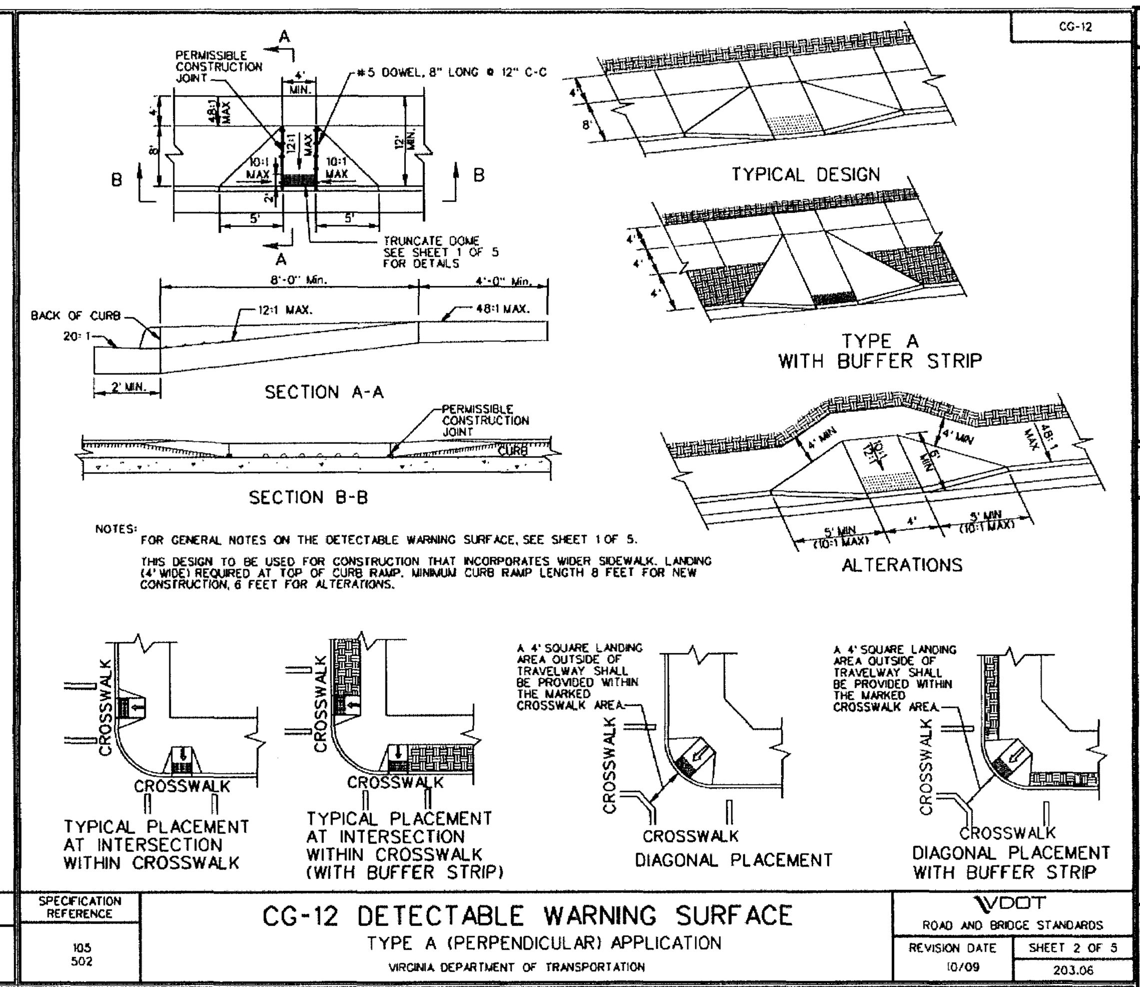
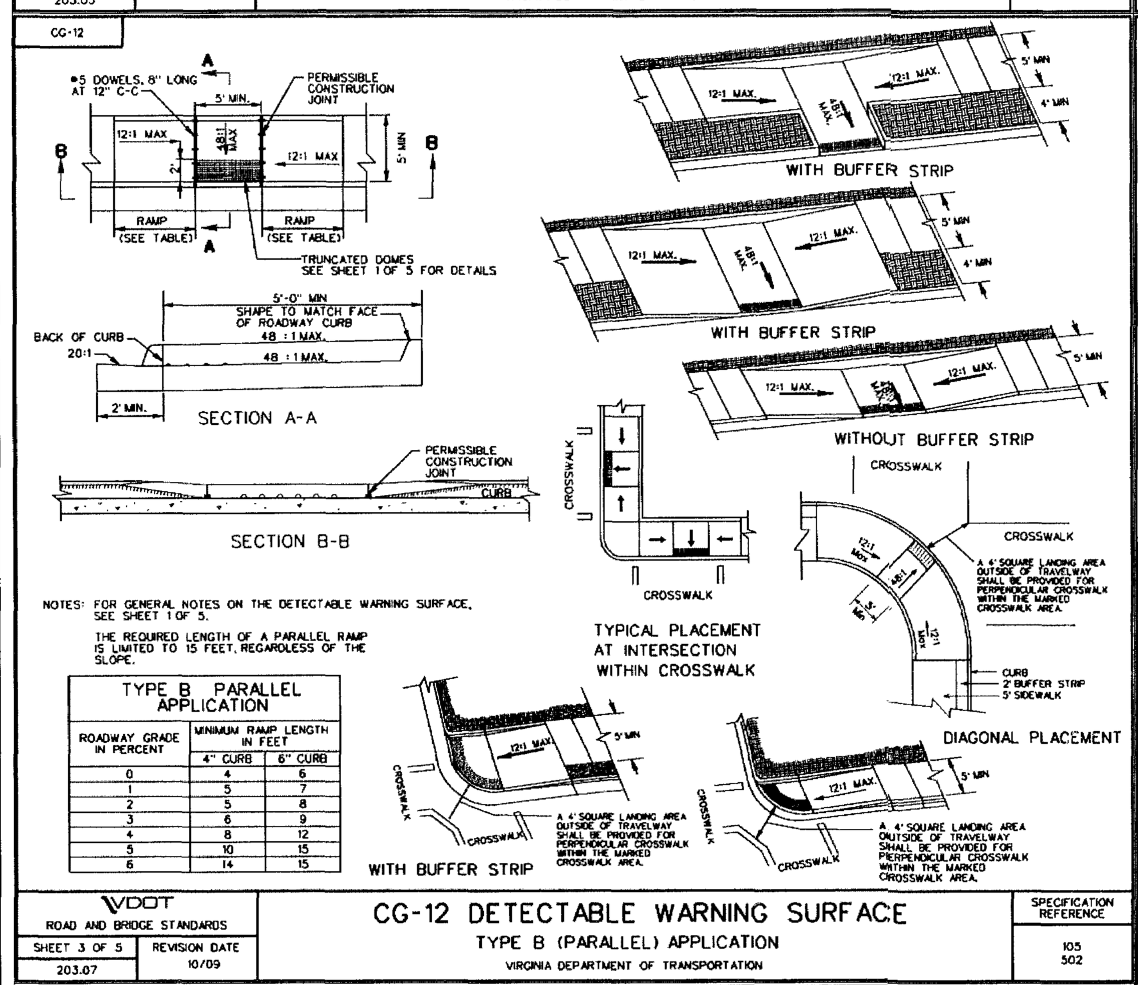
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Notes & Details

Sheet Number
23

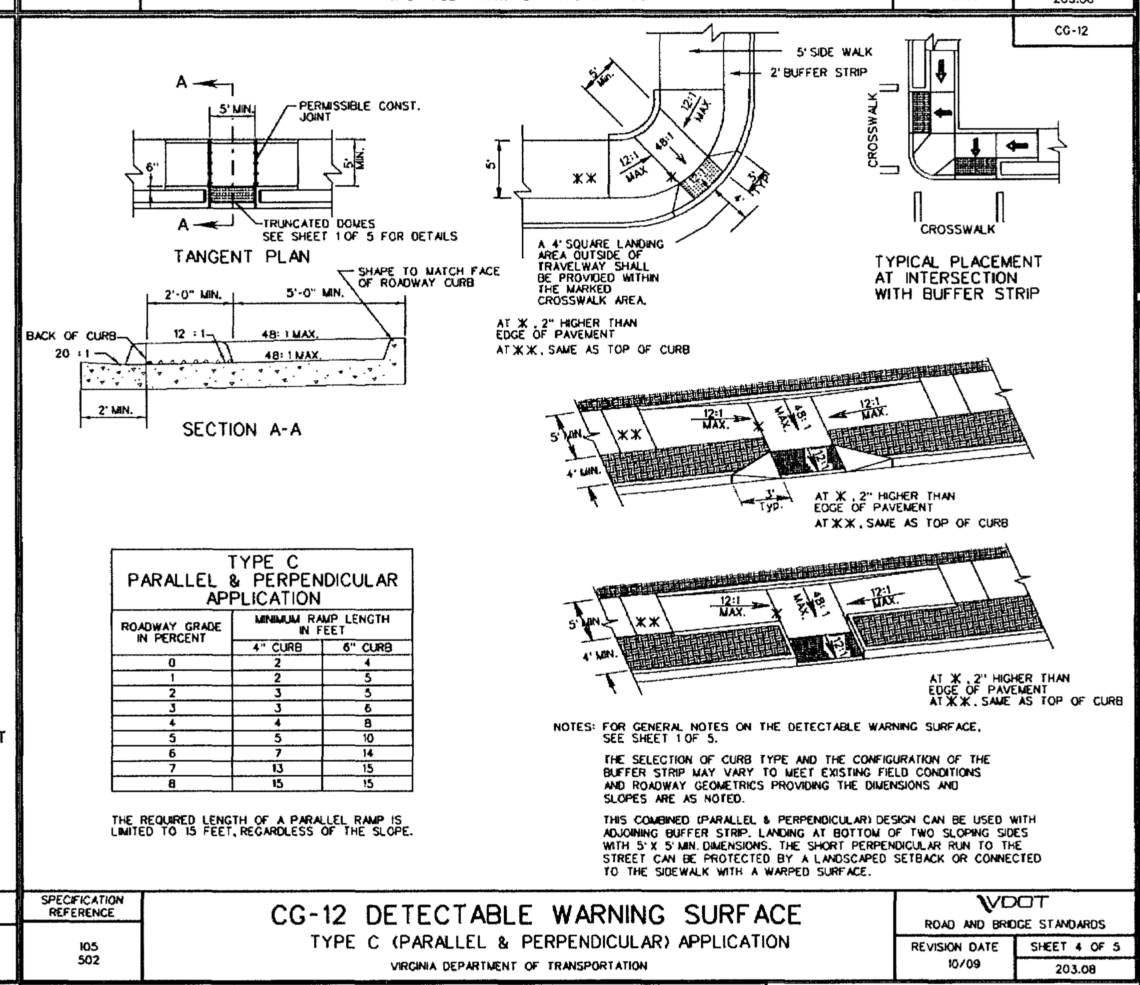






TYPE B PARALLEL APPLICATION

ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET 4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15



TYPE C PARALLEL & PERPENDICULAR APPLICATION

ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET 4" CURB	6" CURB
0	2	4
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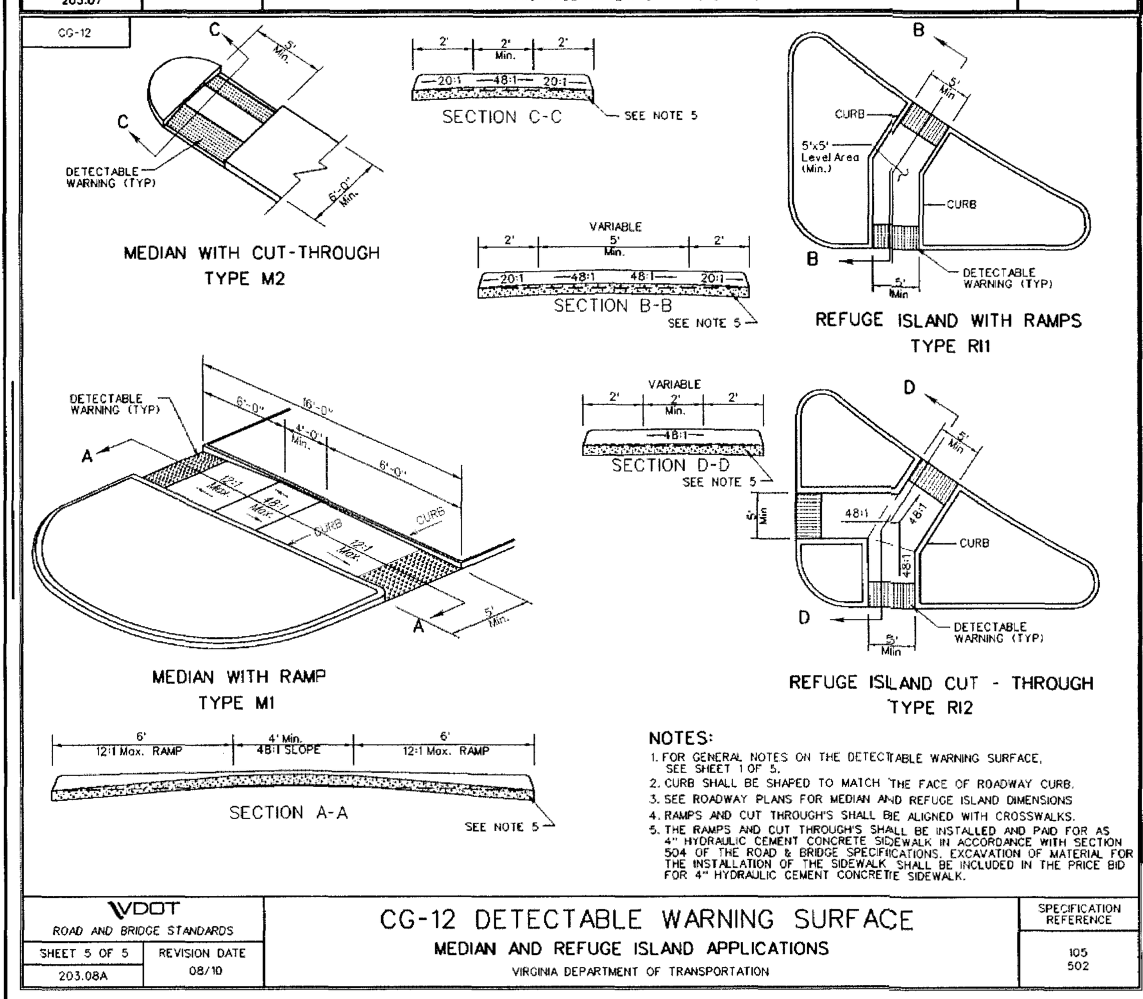
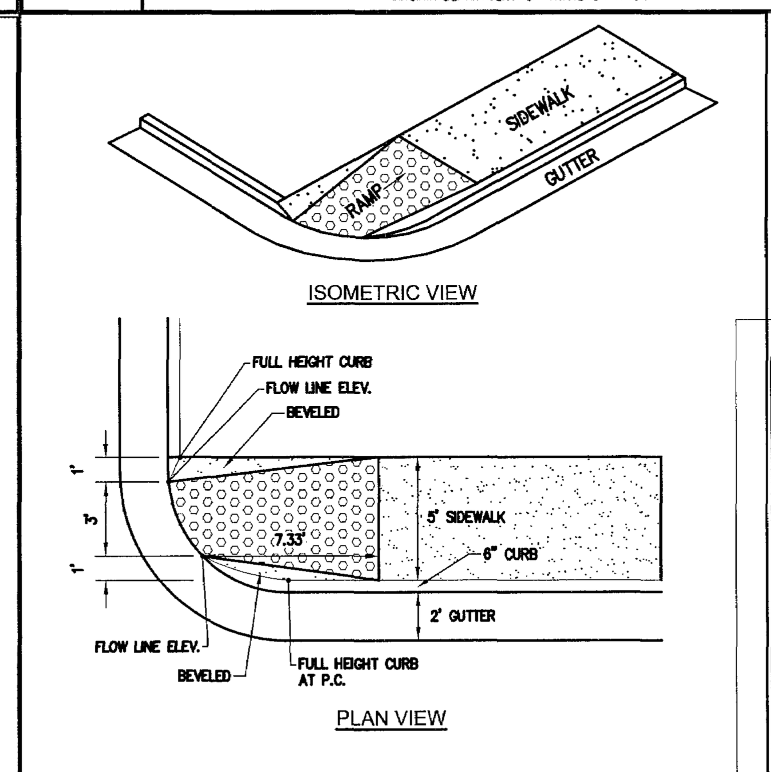
2	3	5
3	3	6
4	4	8
5	5	10
6	7	14
7	13	15
8	15	15





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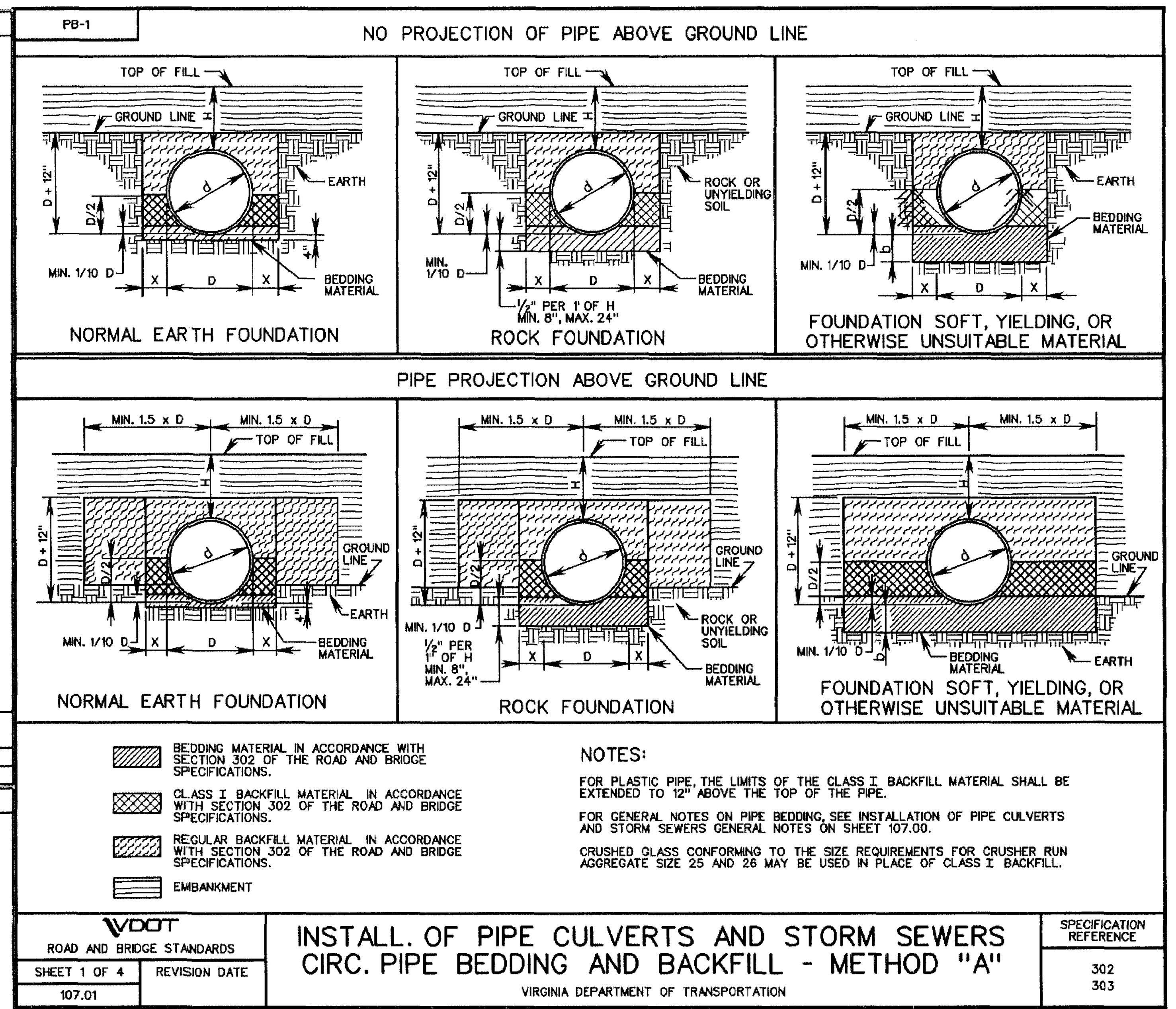
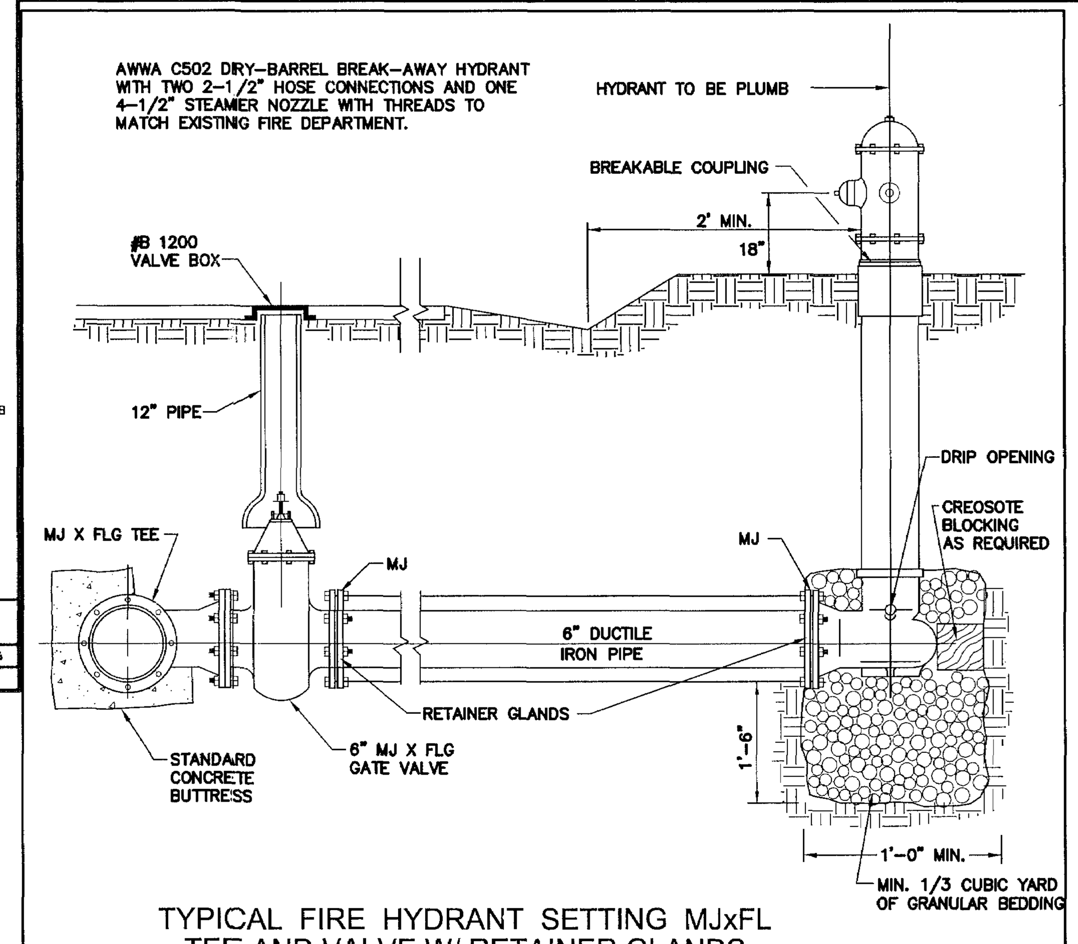
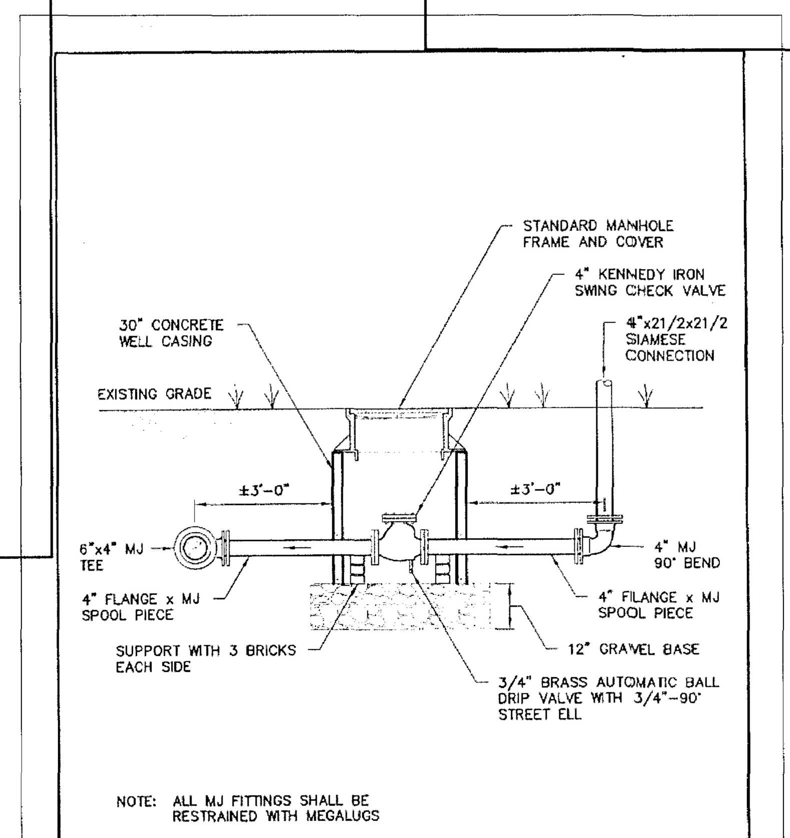
N.T.S.





TYPICAL FIRE HYDRANT SETTING MJxFL TEE AND VALVE W/ RETAINER GLANDS
N.T.S.



FIRE DEPARTMENT CONNECTION W/ CHECK VALVE

JCSA GENERAL NOTES FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS
(Revised March 2008)

A. ALL COMPONENTS OF THE WATER DISTRIBUTION AND SANITARY SEWER SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS, THE HRPDC REGIONAL CONSTRUCTION STANDARDS (FOURTH EDITION WITH AMENDMENTS DATED OCTOBER 2006), AND THE COMMONWEALTH OF VIRGINIA DEPARTMENT OF HEALTH *WATERWORKS AND SANITARY SEWERAGE REGULATIONS*. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS, AND PRODUCTS ON ALL PROJECTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK. A COPY OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA AND HRPDC REGIONAL CONSTRUCTION STANDARDS MUST BE KEPT ON-SITE BY THE CONTRACTOR DURING TIME OF INSTALLING, TESTING, AND CONVEYING FACILITIES TO JCSA.

B. THE CONTRACTOR/DEVELOPER SHALL ACQUIRE A CERTIFICATE TO CONSTRUCT WATER AND SANITARY SEWER FACILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY WATER OR SANITARY SEWER FACILITIES.

C. A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN JCSA, THE DEVELOPER, THE CONTRACTOR INCLUDING RELEVANT SUBCONTRACTOR(S), AND THE PROJECT ENGINEER PRIOR TO ISSUANCE OF A JCSA CERTIFICATE TO CONSTRUCT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE THIS MEETING WITH JCSA AND COORDINATE WITH THE OTHER ATTENDEES.

D. THE DEVELOPER'S REPRESENTATIVE SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND RECEIVE JCSA APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL MATERIALS ORDERED AND INSTALLED PRIOR TO JCSA'S REVIEW AND ACCEPTANCE WILL BE AT THE CONTRACTOR'S/DEVELOPER'S RISK.

E. PIPE LINES AND SERVICES SHALL BE INSTALLED AFTER GRADING TO WITHIN 6-INCHES OF FINAL GRADE AND PRIOR TO PLACEMENT OF BASE MATERIAL.

F. ALL WATER MAINS SHALL BE FULLY FLUSHED, PRESSURE TESTED, AND DISINFECTED AND SATISFACTORY BACTERIOLOGICAL SAMPLES OBTAINED, IN ACCORDANCE WITH JCSA DESIGN AND ACCEPTANCE CRITERIA. FLUSHING OF WATER MAINS SHALL BE SCHEDULED WITH THE JCSA INSPECTOR MINIMUM 3 BUSINESS DAYS PRIOR TO THE FLUSHING. CONTRACTOR SHALL PROVIDE THE REQUIRED DURATION AND VOLUME TO THE INSPECTOR. FLUSHING WILL BE SCHEDULED ONLY ON MONDAYS, UNLESS AUTHORIZED OTHERWISE BY JCSA, AND WILL BE ON A FIRST COME-FIRST SERVE BASIS.

G. ROUTINE PERIODIC INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY JCSA. THESE INSPECTIONS DO NOT RELIEVE THE DEVELOPER/CONTRACTOR/OWNER FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING A WATER DISTRIBUTION AND SANITARY SEWER SYSTEM IN STRICT ACCORDANCE WITH THE JCSA DESIGN AND ACCEPTANCE CRITERIA.

H. ANY FIELD MODIFICATIONS OR CHANGES TO THE APPROVED PLANS SHALL BE VERIFIED AND CHECKED BY THE ENGINEER OF RECORD AND APPROVED BY JCSA PRIOR TO ANY FIELD MODIFICATIONS OR CHANGES. ALL APPROVED CHANGES AND FIELD MODIFICATIONS SHALL BE ACCURATELY INDICATED ON THE RECORD DRAWINGS.

I. ALL LOTS SHALL BE PROVIDED WITH WATER SERVICE AND SANITARY SEWER CONNECTIONS. THE CONNECTIONS SHALL BE EXTENDED FROM THE MAIN TO THE PROPERTY LINE OR EASEMENT LINE, AND SHALL TERMINATE WITH A YOKE IN A METER BOX, OR AT THE CLEAN OUT, SET AT FINAL FINISHED GRADE. METERS FOR ALL LOTS (UNITS) SHALL BE PAID FOR BY THE DEVELOPER OR BUILDER AND INSTALLED BY JCSA.

J. ANY REQUIRED EASEMENTS, PERMITS AND APPROVALS SHALL BE ACQUIRED BY THE DEVELOPER PRIOR TO COMMENCEMENT OF WATER MAIN AND/OR SANITARY SEWER CONSTRUCTION.

K. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION. THE CONTRACTOR SHALL ALSO NOTIFY "MISS UTILITY" AT 1-800-552-7001 OR 811 PRIOR TO PERFORMING ANY UNDERGROUND EXCAVATION.

L. WATER METER BOX INSTALLATION SHALL MAINTAIN A MINIMUM 18-INCH HORIZONTAL EDGE-TO-EDGE CLEARANCE FROM DRIVEWAYS AND/OR DRIVE PATHS, SIDEWALKS, BIKE PATHS, CURBING AND ADJACENT WATER METER BOXES.

M. ONLY JCSA PERSONNEL ARE AUTHORIZED TO OPERATE VALVES ON EXISTING JCSA WATER MAINS AND SANITARY FORCE MAINS. ONCE A SYSTEM HAS BEEN HYDRAULICALLY ENERGIZED, JCSA WILL BE RESPONSIBLE FOR OPERATING THE VALVES. THE CONTRACTOR SHALL CONTACT JCSA OPERATIONS AT 757-229-7421 IF THERE IS AN EMERGENCY OR NEED TO OPEN/CLOSE A VALVE.

N. ANY EXISTING UNUSED WELL(S) SHALL BE ABANDONED IN ACCORDANCE WITH STATE PRIVATE WELL REGULATIONS AND JAMES CITY COUNTY CODE.

O. BEDDING OF JCSA UTILITIES SHALL BE IN ACCORDANCE WITH HRPDC DETAIL EW_01.

P. NO TREES, SHRUBS, STRUCTURES, FENCES, IRRIGATION MAINS, INVISIBLE PET FENCES OR OTHER OBSTACLES SHALL BE PLACED WITHIN AN EASEMENT WHICH WOULD RENDER THE EASEMENT INACCESSIBLE BY EQUIPMENT. SHRUBS SHALL BE A MINIMUM OF 5 FEET, AND TREES A MINIMUM OF 10 FEET, FROM THE CENTER OF WATER AND SANITARY SEWER PIPELINES.

Q. JOINT RESTRAINT SHALL BE PROVIDED IN ACCORDANCE WITH MINIMUM REQUIREMENTS OF JCSA DETAIL JR.1, UNLESS SHOWN OTHERWISE ON THE PLANS. ALL PRESSURE PIPELINES SHALL HAVE JOINT RESTRAINT. FIRE HYDRANTS SHALL BE RESTRAINED AT LEAST ONE FULL JOINT OF PIPE IN EACH DIRECTION ON THE MAINLINE.

R. PROPOSED WATER AND SANITARY SEWER SYSTEMS SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 5-FEET FROM OTHER UTILITIES AND STRUCTURES, INCLUDING BUT NOT LIMITED TO STORM SEWERS, STREET LIGHTS, ETC. WATER AND SANITARY SEWER FACILITIES SHALL HAVE A MINIMUM 10-FOOT HORIZONTAL EDGE-TO-EDGE SEPARATION.

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Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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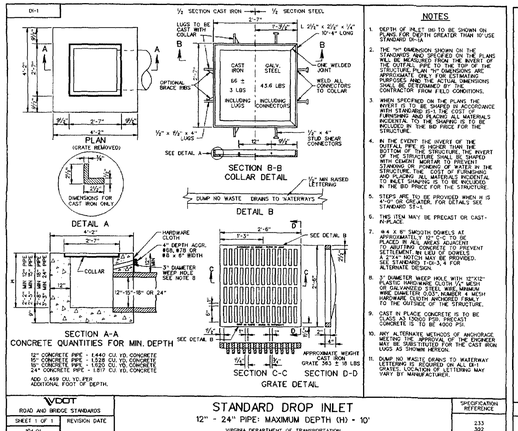

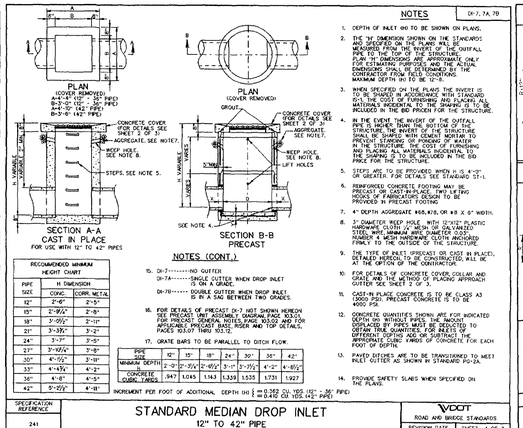

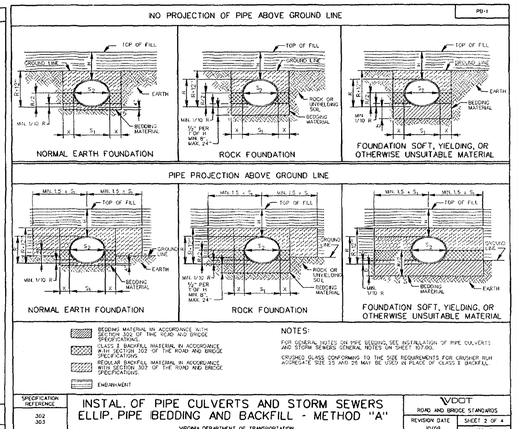

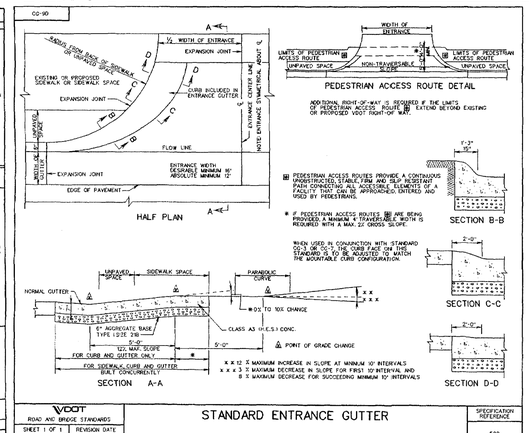

Rev.	Date	Description	Revised By
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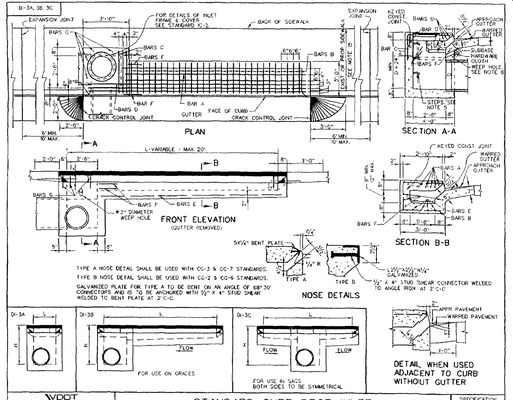
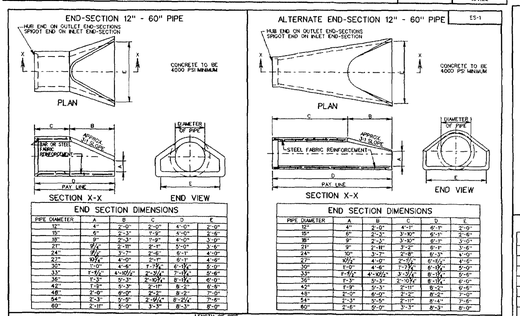
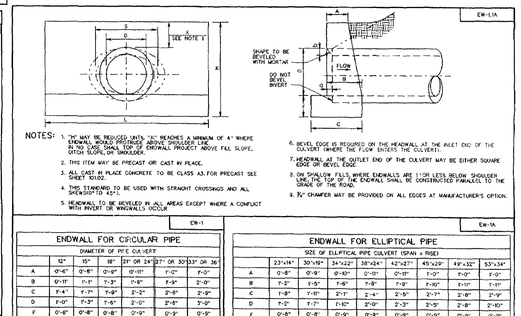
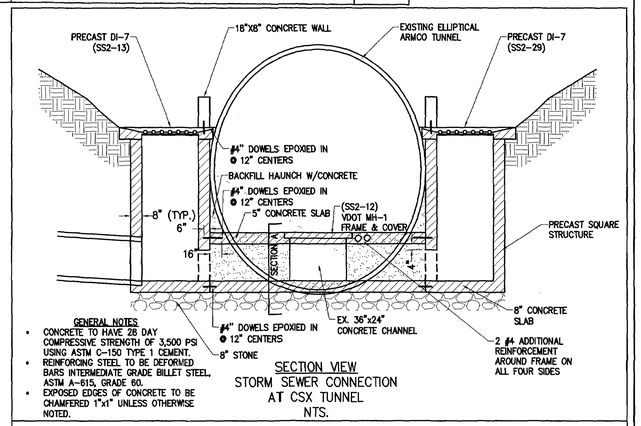
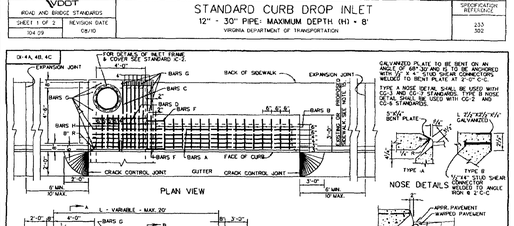
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

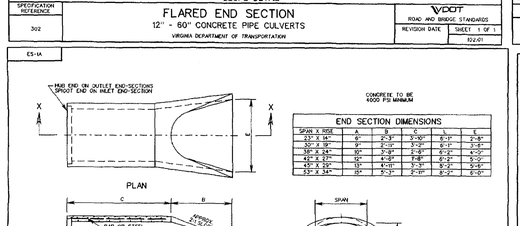


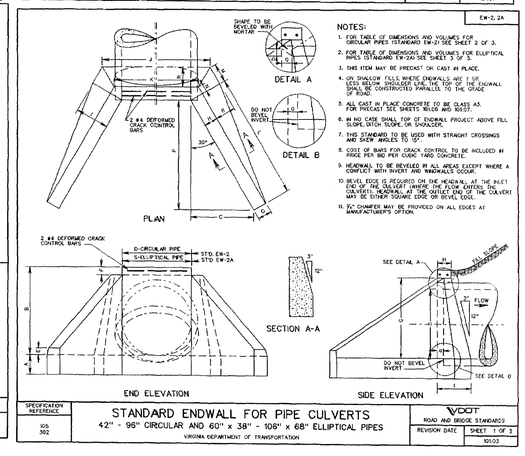


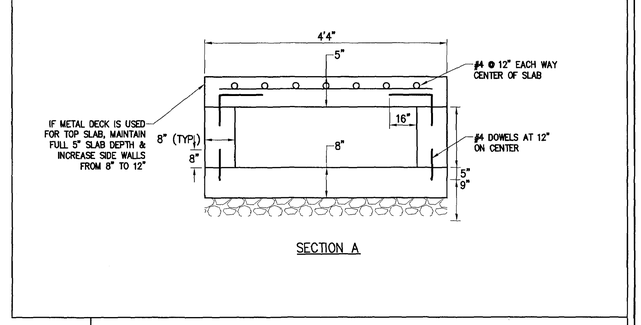


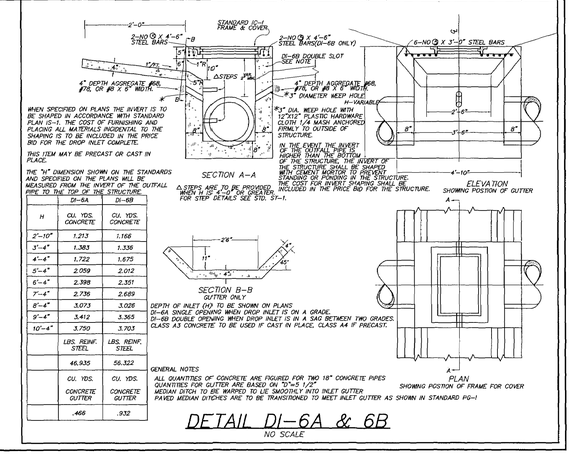












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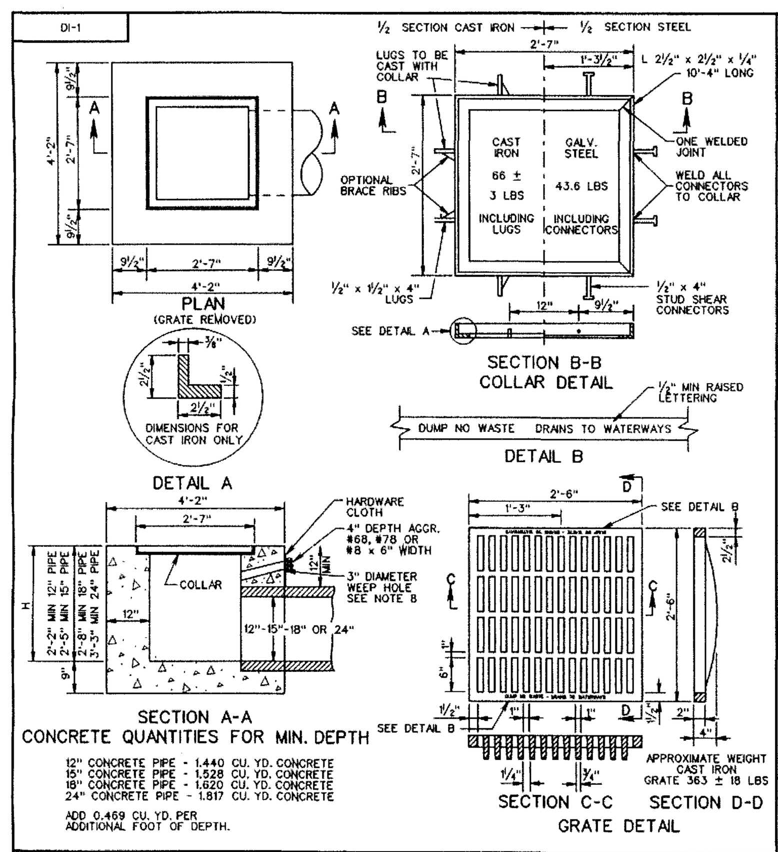


CONCRETE QUANTITIES FOR MIN. DEPTH

12" CONCRETE PIPE - 1.440 CU. YD. CONCRETE
15" CONCRETE PIPE - 1.528 CU. YD. CONCRETE
18" CONCRETE PIPE - 1.620 CU. YD. CONCRETE
24" CONCRETE PIPE - 1.817 CU. YD. CONCRETE

ADD 0.469 CU. YD. PER ADDITIONAL FOOT OF DEPTH.

NOTES

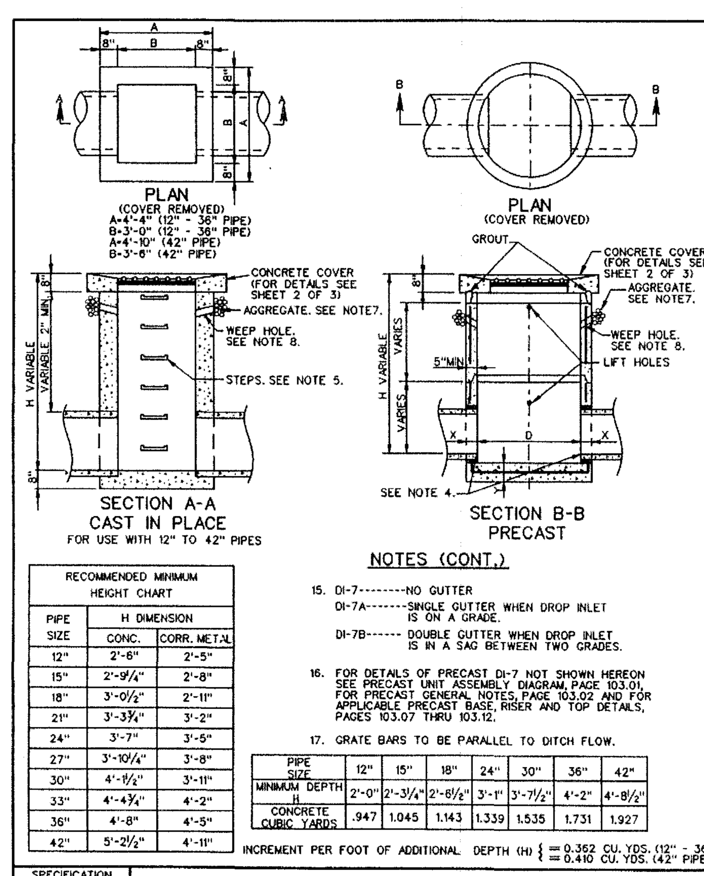
1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS. FOR DEPTH GREATER THAN 10' USE STANDARD DI-1A
2. THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO INLET SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.
7. #4 X 8" SMOOTH DOWELS AT APPROXIMATELY 12" C-C TO BE PLACED IN ALL AREAS ADJACENT TO ABUTTING CONCRETE TO PREVENT SETTLEMENT. IN LIEU OF DOWELS A 2"X4" NOTCH MAY BE PROVIDED. SEE STANDARD T-DI-3, 4 FOR ALTERNATE DESIGN.
8. 3" DIAMETER WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH ¼" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. CAST IN PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
10. ANY ALTERNATE METHODS OF ANCHORAGE MEETING THE APPROVAL OF THE ENGINEER MAY BE SUBSTITUTED FOR THE CAST IRON LUGS AS SHOWN HEREON.
11. DUMP NO WASTE DRAINS TO WATERWAY LETTERING IS REQUIRED ON ALL DI-1 GRATES. LOCATION OF LETTERING MAY VARY BY MANUFACTURER.

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE — 104.01

STANDARD DROP INLET
12" - 24" PIPE: MAXIMUM DEPTH (H) = 10'
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 233 302

DI-7, 7A, 7B



RECOMMENDED MINIMUM HEIGHT CHART		
PIPE SIZE	H DIMENSION CONC.	CORR. METAL
12"	2'-6"	2'-5"
15"	2'-9¼"	2'-8"
18"	3'-0½"	2'-11"
21"	3'-3¾"	3'-2"
24"	3'-7"	3'-5"
27"	3'-10¼"	3'-8"
30"	4'-1½"	3'-11"
33"	4'-4¾"	4'-2"
36"	4'-8"	4'-5"
42"	5'-2½"	4'-11"

NOTES

1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS.
2. THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS. MAXIMUM DEPTH (H) TO BE 12'-8.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICEN FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. REINFORCED CONCRETE FOOTING MAY BE PRECAST OR CAST-IN-PLACE. TWO LIFTING HOOKS OF FABRICATORS DESIGN TO BE PROVIDED IN PRECAST FOOTING
7. 4" DEPTH AGGREGATE #68, #78, OR #8 X 6" WIDTH.
8. 3" DIAMETER WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH ¼" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. THE TYPE OF INLET (PRECAST OR CAST IN PLACE), DETAILED HEREON, TO BE CONSTRUCTED, WILL BE AT THE OPTION OF THE CONTRACTOR.
10. FOR DETAILS OF CONCRETE COVER, COLLAR AND GRATE AND THE METHOD OF PLACING APPROACH GUTTER SEE SHEET 2 OF 3.
11. CAST-IN PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
12. CONCRETE QUANTITIES SHOWN ARE FOR INDICATED DEPTH (H) WITHOUT PIPES. THE AMOUNT DISPLACED BY PIPES MUST BE DEDUCTED TO OBTAIN TRUE QUANTITIES. FOR INLETS OF DIFFERENT DEPTHS ADD OR SUBTRACT THE APPROPRIATE CUBIC YARDS OF CONCRETE FOR EACH FOOT OF DEPTH.
13. PAVED DITCHES ARE TO BE TRANSITIONED TO MEET INLET GUTTER AS SHOWN IN STANDARD PG-2A.
14. PROVIDE SAFETY SLABS WHEN SPECIFIED ON THE PLANS.

NOTES (CONT.)

15. DI-7--------NO GUTTER
DI-7A-------SINGLE GUTTER WHEN DROP INLET IS ON A GRADE.
DI-7B------ DOUBLE GUTTER WHEN DROP INLET IS IN A SAG BETWEEN TWO GRADES.
16. FOR DETAILS OF PRECAST DI-7 NOT SHOWN HEREON SEE PRECAST UNIT ASSEMBLY DIAGRAM, PAGE 103.01, FOR PRECAST GENERAL NOTES, PAGE 103.02 AND FOR APPLICABLE PRECAST BASE, RISER AND TOP DETAILS, PAGES 103.07 THRU 103.12.
17. GRATE BARS TO BE PARALLEL TO DITCH FLOW.

PIPE SIZE	12"	15"	18"	24"	30"	36"	42"
MINIMUM DEPTH H	2'-0"	2'-3¼"	2'-6½"	3'-1"	3'-7½"	4'-2"	4'-8½"
CONCRETE CUBIC YARDS	.947	1.045	1.143	1.339	1.535	1.731	1.927

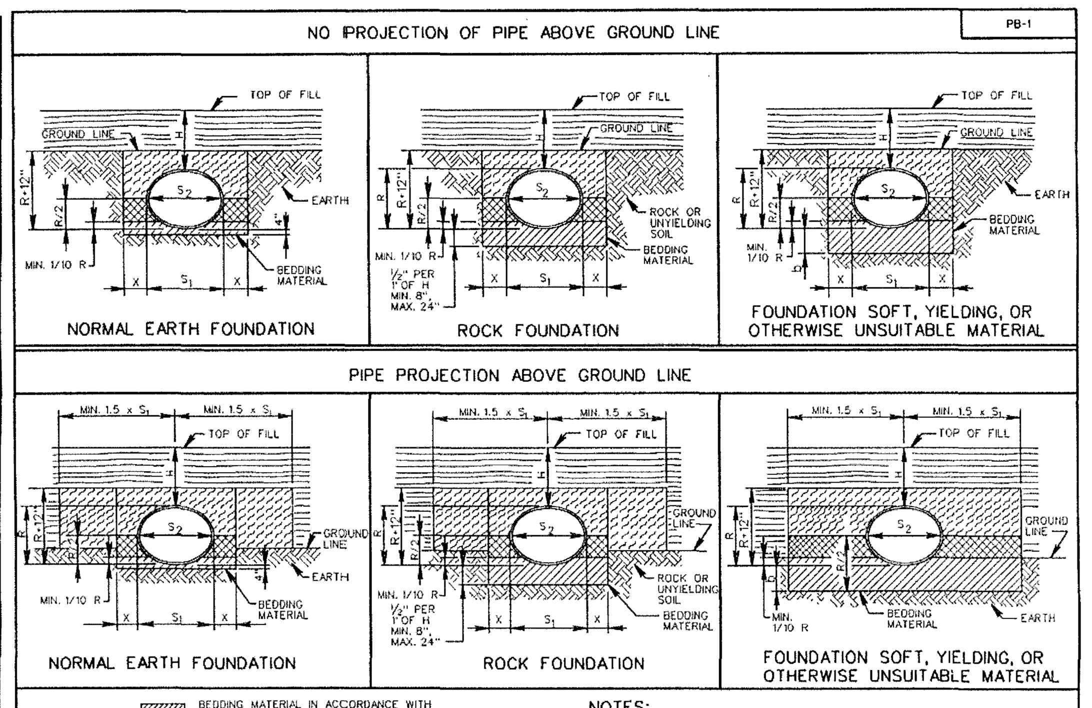
INCREMENT PER FOOT OF ADDITIONAL DEPTH (H) { = 0.362 CU. YDS. (12" - 36" PIPE) = 0.410 CU. YDS. (42" PIPE)

SPECIFICATION REFERENCE 241 503

STANDARD MEDIAN DROP INLET
12" TO 42" PIPE
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 3 — 104.22

PB-1



BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
EMBANKMENT

NOTES:

FOR GENERAL NOTES ON PIPE BEDDING, SEE INSTALLATION OF PIPE CULVERTS AND STORM SEWERS GENERAL NOTES ON SHEET 107.00.

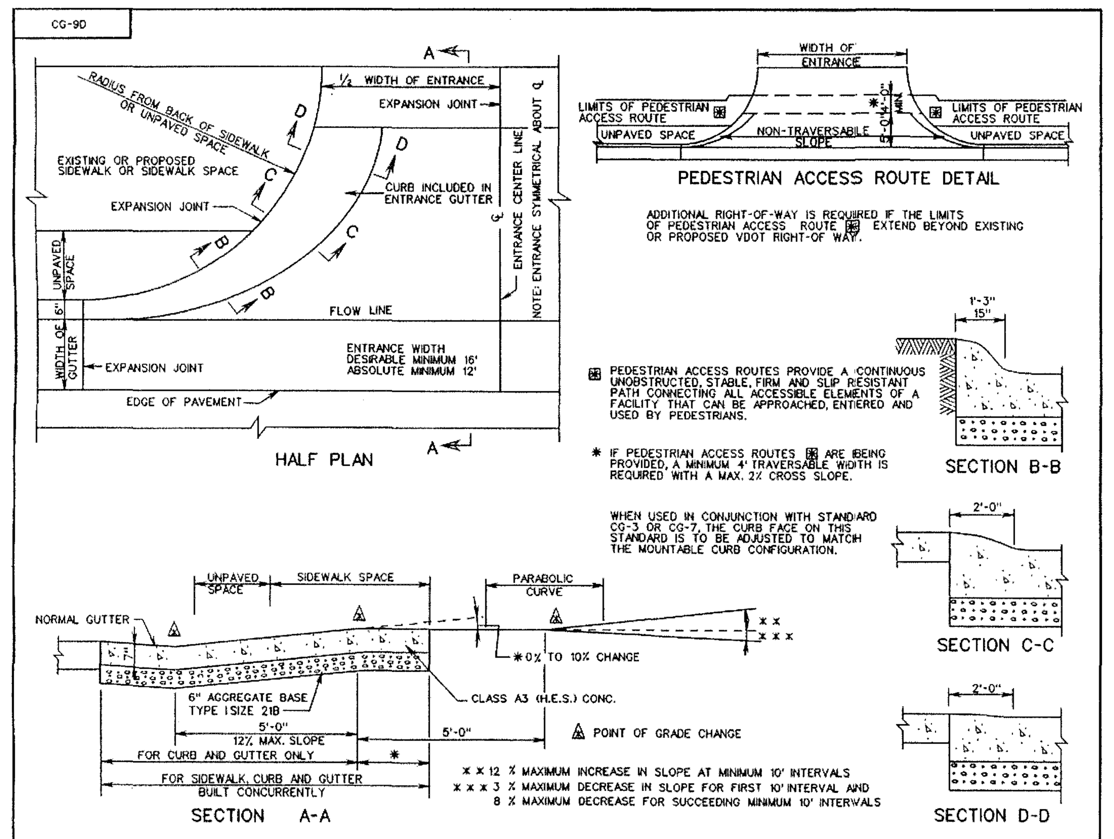
CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 25 AND 26 MAY BE USED IN PLACE OF CLASS I BACKFILL.

SPECIFICATION REFERENCE 302 303

INSTAL. OF PIPE CULVERTS AND STORM SEWERS ELLIP. PIPE BEDDING AND BACKFILL - METHOD "A"
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE 10/09 — SHEET 2 OF 4 — 107.02

CG-9D



ADDITIONAL RIGHT-OF-WAY IS REQUIRED IF THE LIMITS OF PEDESTRIAN ACCESS ROUTE ⊞ EXTEND BEYOND EXISTING OR PROPOSED VDOT RIGHT-OF-WAY.

⊞ PEDESTRIAN ACCESS ROUTES PROVIDE A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.

* IF PEDESTRIAN ACCESS ROUTES ⊞ ARE BEING PROVIDED, A MINIMUM 4' TRAVERSABLE WIDTH IS REQUIRED WITH A MAX. 2% CROSS SLOPE.

WHEN USED IN CONJUNCTION WITH STANDARD CG-3 OR CG-7, THE CURB FACE ON THIS STANDARD IS TO BE ADJUSTED TO MATCH THE MOUNTABLE CURB CONFIGURATION.

* 0% TO 10% CHANGE

△ POINT OF GRADE CHANGE

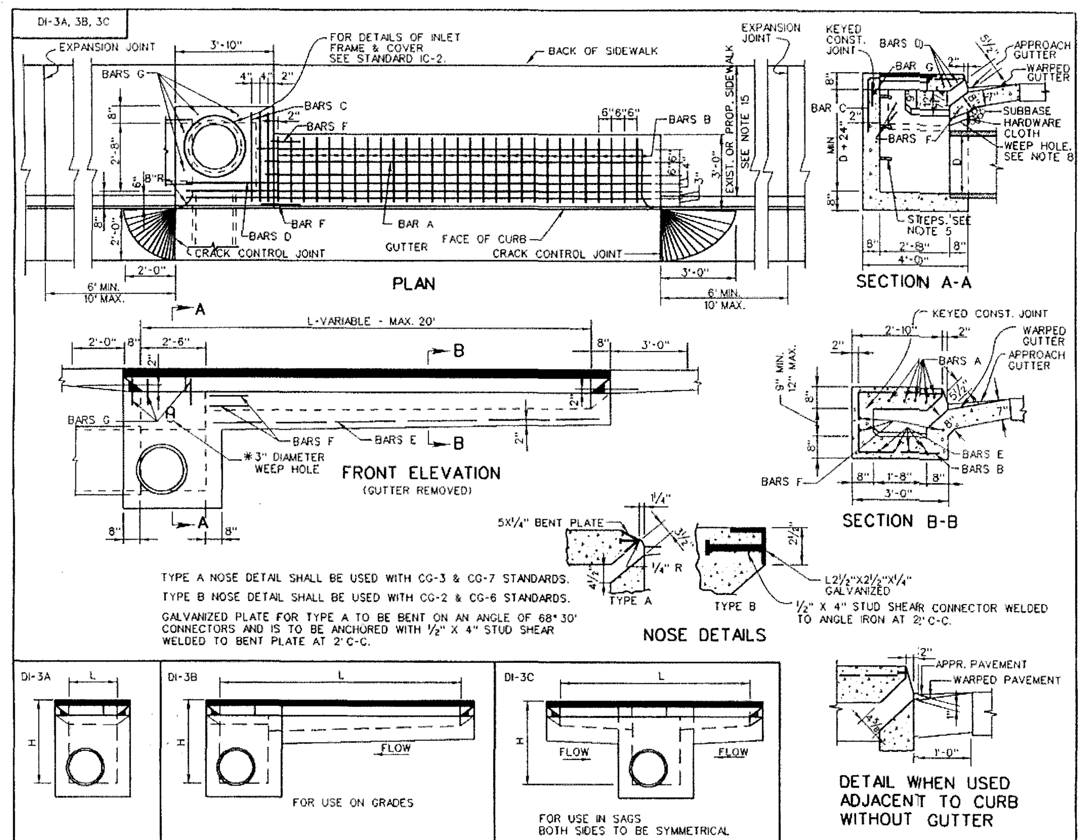
X X 12 % MAXIMUM INCREASE IN SLOPE AT MINIMUM 10' INTERVALS
X X X 3 % MAXIMUM DECREASE IN SLOPE FOR FIRST 10' INTERVAL AND 8 % MAXIMUM DECREASE FOR SUCCEEDING MINIMUM 10' INTERVALS

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE — 203.03

STANDARD ENTRANCE GUTTER
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 502

DI-3A, 3B, 3C



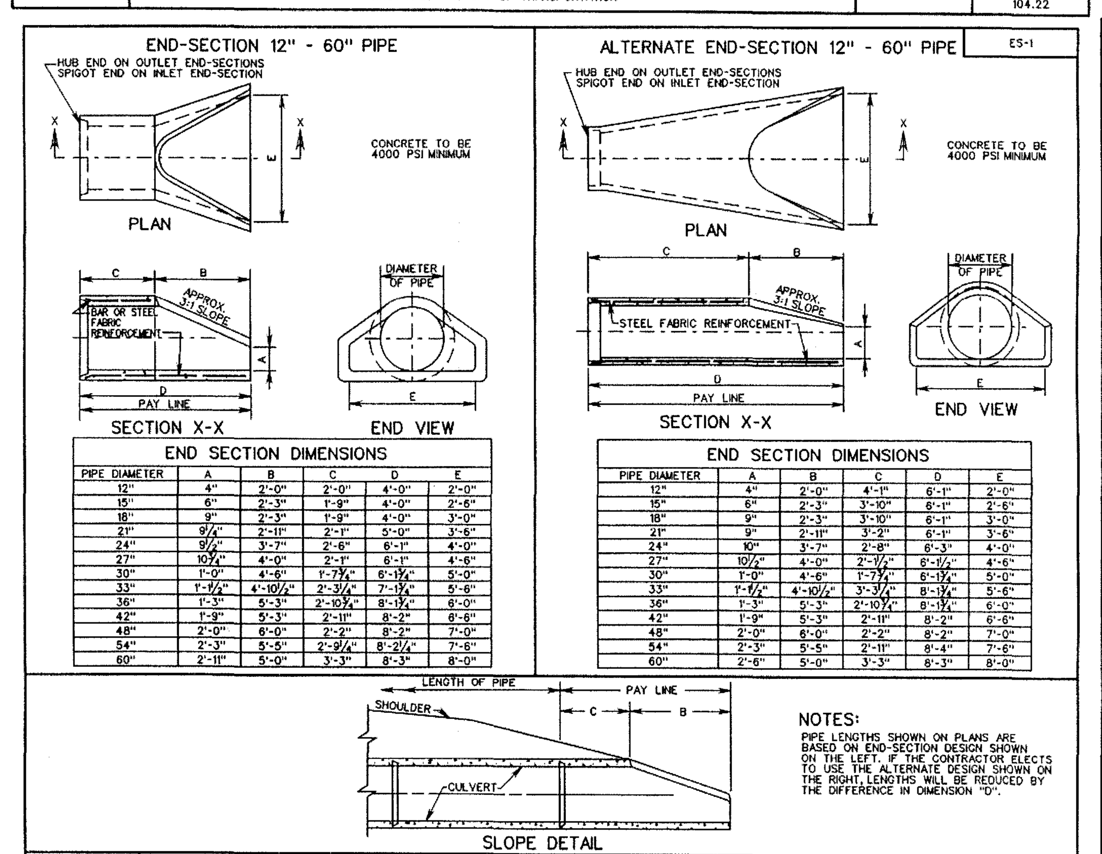
TYPE A NOSE DETAIL SHALL BE USED WITH CG-3 & CG-7 STANDARDS.
TYPE B NOSE DETAIL SHALL BE USED WITH CG-2 & CG-6 STANDARDS.
GALVANIZED PLATE FOR TYPE A TO BE BENT ON AN ANGLE OF 68°30' CONNECTORS AND IS TO BE ANCHORED WITH ½" X 4" STUD SHEAR WELDED TO BENT PLATE AT 2' C-C.

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 2 — REVISION DATE 08/10 — 104.09

STANDARD CURB DROP INLET
12" - 30" PIPE: MAXIMUM DEPTH (H) = 8'
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 233 302

ES-1



END SECTION DIMENSIONS					
PIPE DIAMETER	A	B	C	D	E
12"	4"	2'-0"	2'-0"	4'-0"	2'-0"
15"	6"	2'-3"	1'-9"	4'-0"	2'-6"
18"	9"	2'-3"	1'-9"	4'-0"	3'-0"
21"	9¼"	2'-11"	2'-1"	5'-0"	3'-6"
24"	9½"	3'-7"	2'-6"	6'-1"	4'-0"
27"	10½"	4'-0"	2'-1"	6'-1"	4'-6"
30"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"
33"	1'-1½"	4'-10½"	2'-3¼"	7'-1¾"	5'-6"
36"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"
48"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"
54"	2'-3"	5'-5"	2'-9¼"	8'-2¼"	7'-6"
60"	2'-11"	5'-0"	3'-3"	8'-3"	8'-0"

END SECTION DIMENSIONS (ALTERNATE)					
PIPE DIAMETER	A	B	C	D	E
12"	4"	2'-0"	4'-1"	6'-1"	2'-0"
15"	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	9"	2'-11"	3'-2"	6'-1"	3'-6"
24"	10"	3'-7"	2'-8"	6'-3"	4'-0"
27"	10½"	4'-0"	2'-1½"	6'-1½"	4'-6"
30"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"
33"	1'-1½"	4'-10½"	3'-3¾"	8'-1¾"	5'-6"
36"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"
48"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"
54"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"
60"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"

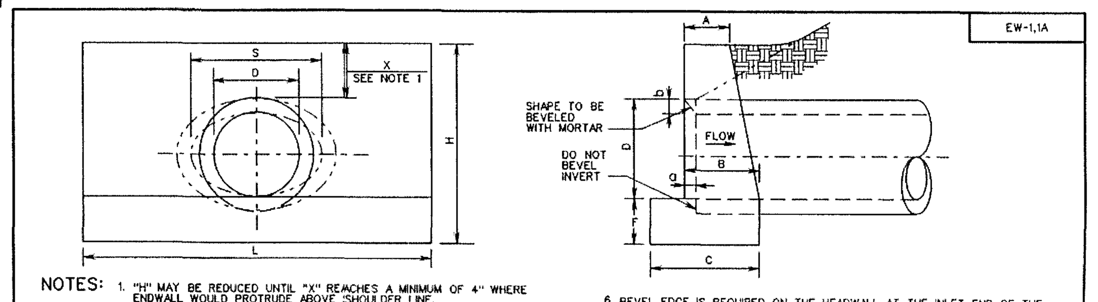
NOTES:
PIPE LENGTHS SHOWN ON PLANS ARE BASED ON END-SECTION DESIGN SHOWN ON THE LEFT. IF THE CONTRACTOR ELECTS TO USE THE ALTERNATE DESIGN SHOWN ON THE RIGHT, LENGTHS WILL BE REDUCED BY THE DIFFERENCE IN DIMENSION "D".

SPECIFICATION REFERENCE 302

FLARED END SECTION
12" - 60" CONCRETE PIPE CULVERTS
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 1 — 102.01

EW-1,1A



NOTES:
1. "H" MAY BE REDUCED UNTIL "X" REACHES A MINIMUM OF 4" WHERE ENDWALL WOULD PROTRUDE ABOVE SHOULDER LINE. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEET 101.02.
4. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND ALL SKEWS(0° TO 45°).
5. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR
6. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT).
7. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
8. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
9. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

EW-1

ENDWALL FOR CIRCULAR PIPE						
DIAMETER OF PIPE CULVERT	12"	15"	18"	21" OR 24"	27" OR 30"	33" OR 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-11"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-4"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-3"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	4'-0"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
a	0'-1¼"	0'-1¾"	0'-2"	0'-2½"	0'-3¼"	0'-3¾"
b	0'-1"	0'-1¼"	0'-1½"	0'-2"	0'-2½"	0'-3"
CUBIC YARDS OF CONCRETE						
CONC. PIPE	0.241	0.492	0.697	1.319	2.067	2.947
C.M. PIPE	0.257	0.521	0.739	1.398	2.198	3.145

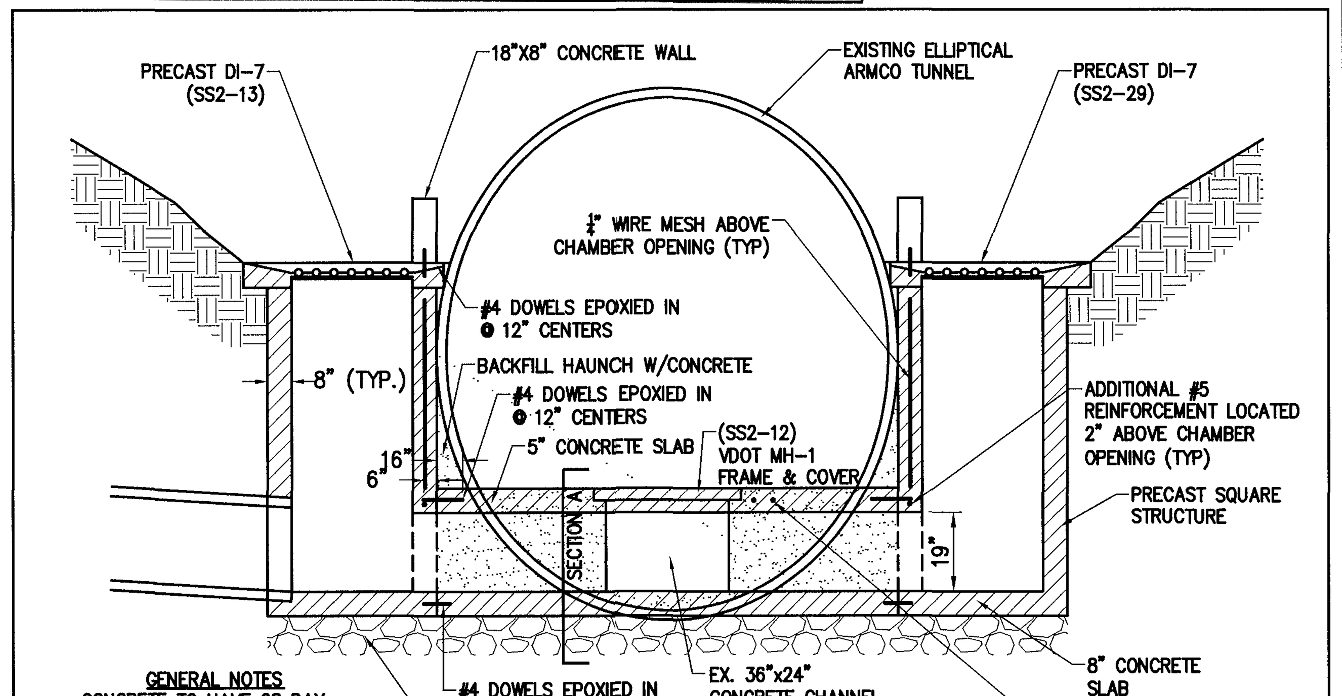
EW-1A

ENDWALL FOR ELLIPTICAL PIPE								
SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)	23"x14"	30"x19"	34"x22"	38"x24"	42"x27"	45"x29"	49"x32"	53"x34"
A	0'-8"	0'-9"	0'-10"	0'-11"	0'-11"	1'-0"	1'-0"	1'-0"
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"
a	0'-2½"	0'-3¼"	0'-3½"	0'-4"	0'-4½"	0'-4¾"	0'-5"	0'-5½"
b	0'-2"	0'-2½"	0'-2¾"	0'-3"	0'-3½"	0'-3¾"	0'-4"	0'-4½"
CUBIC YARDS OF CONCRETE								
CONC.PIPE	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801

SPECIFICATION REFERENCE 105 302

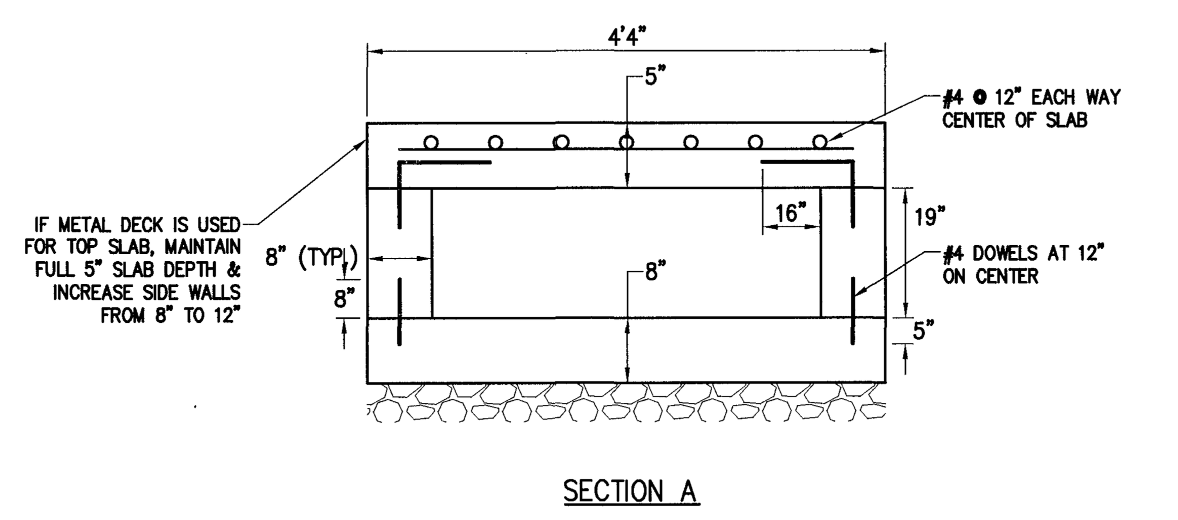
STANDARD ENDWALL FOR PIPE CULVERTS
12" - 36" CIRCULAR AND 23" x 14" - 53" x 34" ELLIPTICAL PIPES
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 1 — 101.01



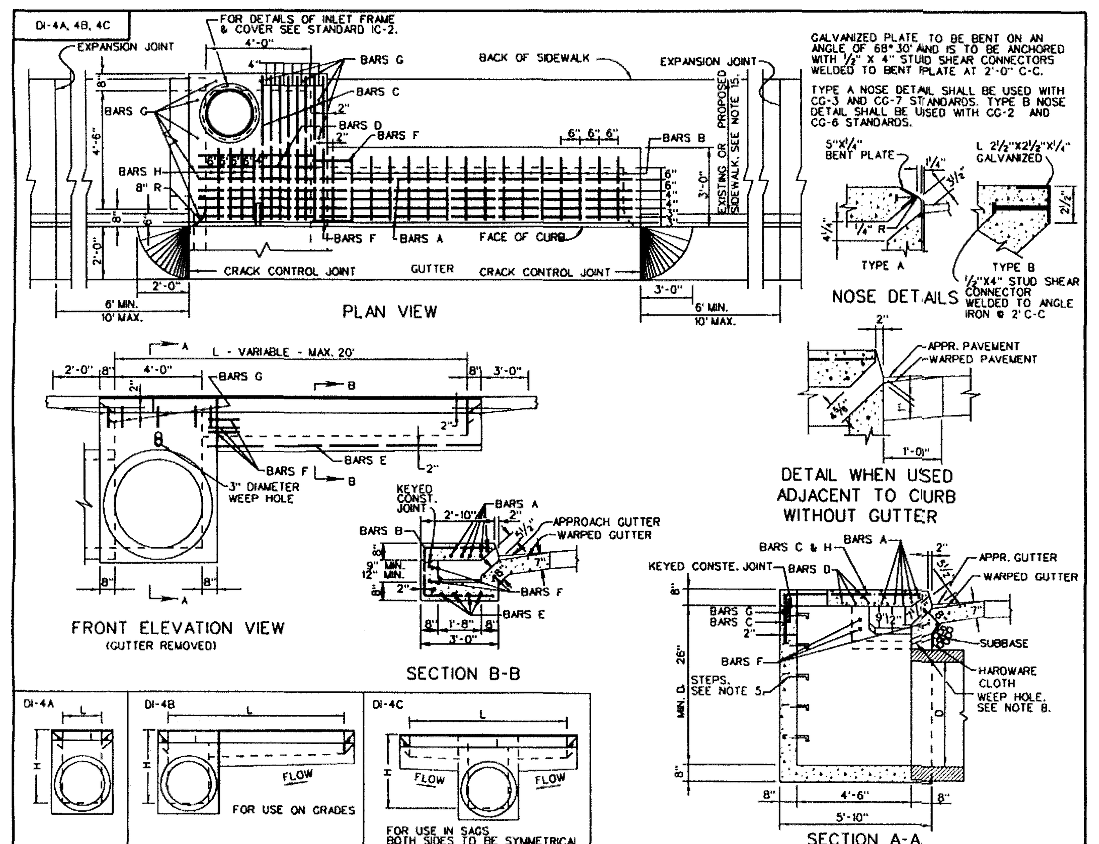
GENERAL NOTES
- CONCRETE TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI USING ASTM C-150 TYPE 1 CEMENT.
- REINFORCING STEEL TO BE DEFORMED BARS INTERMEDIATE GRADE BILLET STEEL, ASTM A-615, GRADE 60.
- EXPOSED EDGES OF CONCRETE TO BE CHAMFERED 1"x1" UNLESS OTHERWISE NOTED.

SECTION VIEW
STORM SEWER CONNECTION
AT CSX TUNNEL
NTS.



SECTION A

DI-4A, 4B, 4C



GALVANIZED PLATE TO BE BENT ON AN ANGLE OF 68°30' AND IS TO BE ANCHORED WITH ½" X 4" STUD SHEAR CONNECTORS WELDED TO BENT PLATE AT 2'-0" C-C.

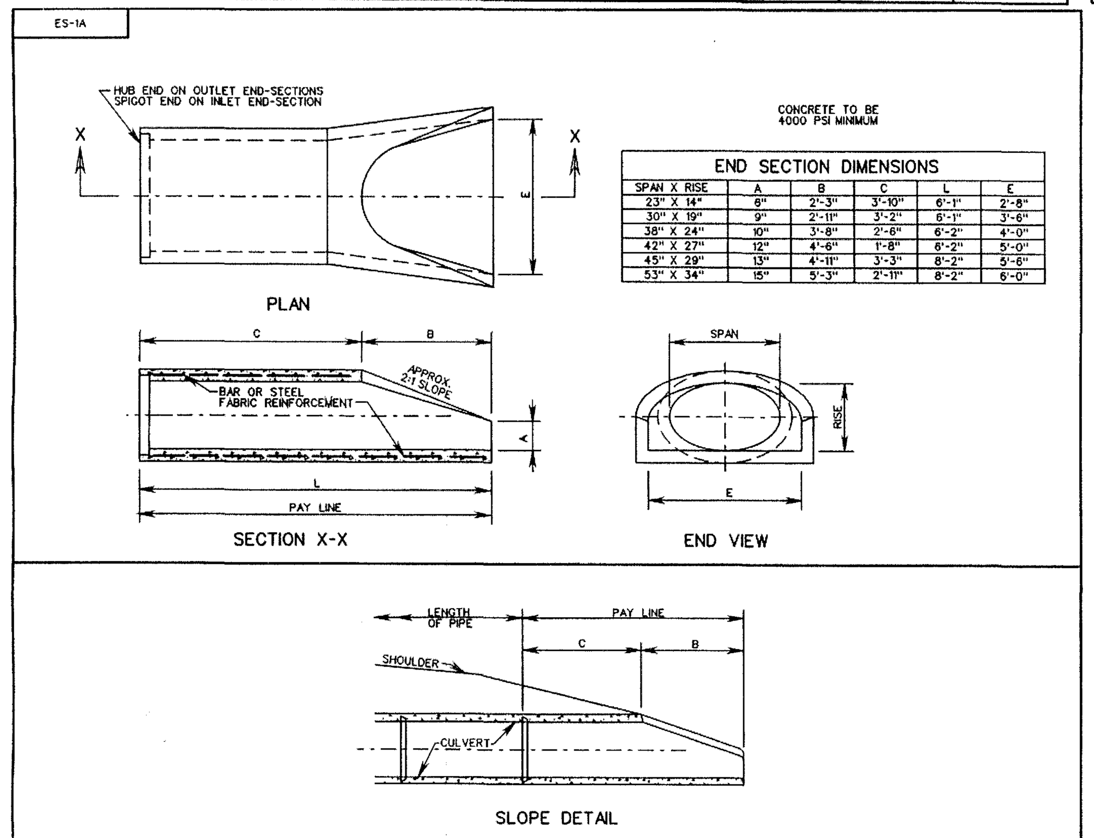
TYPE A NOSE DETAIL SHALL BE USED WITH CG-3 AND CG-7 STANDARDS. TYPE B NOSE DETAIL SHALL BE USED WITH CG-2 AND CG-6 STANDARDS.

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 2 — REVISION DATE 10/09 — 104.15

STANDARD CURB DROP INLET
36" - 48" PIPE: MAXIMUM DEPTH (H) = 8'
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 233 302

ES-1A



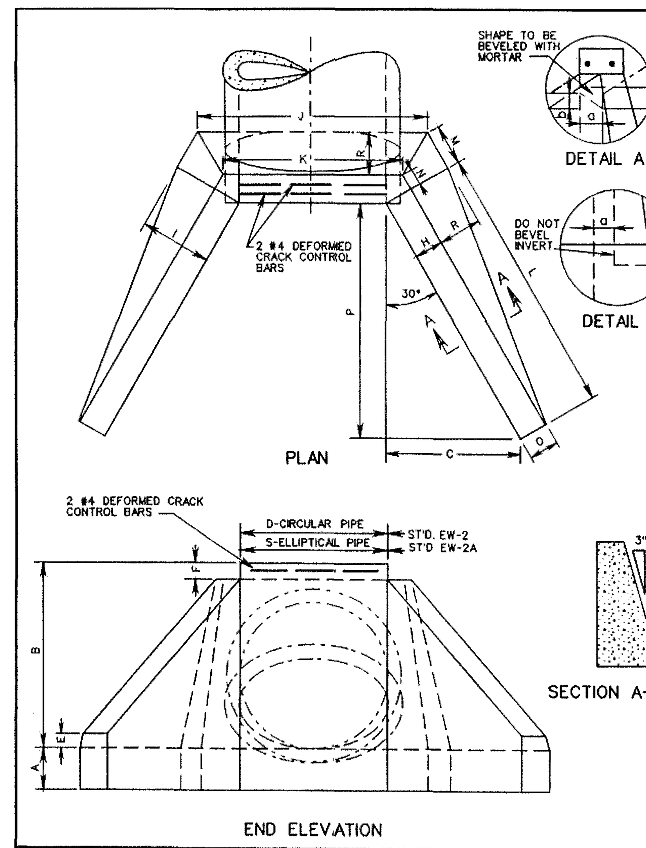
END SECTION DIMENSIONS					
SPAN X RISE	A	B	C	L	E
23" X 14"	6"	2'-3"	3'-10"	6'-1"	2'-8"
30" X 19"	9"	2'-11"	3'-2"	6'-1"	3'-6"
38" X 24"	10"	3'-8"	2'-6"	6'-2"	4'-0"
42" X 27"	12"	4'-6"	1'-8"	6'-2"	5'-0"
45" X 29"	13"	4'-11"	3'-3"	8'-2"	5'-6"
53" X 34"	15"	5'-3"	2'-11"	8'-2"	6'-0"

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE — 102.02

FLARED END-SECTION
23" x 14" TO 53" x 34" ELLIPTICAL CONCRETE PIPE CULVERTS
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 302

EW-2, 2A

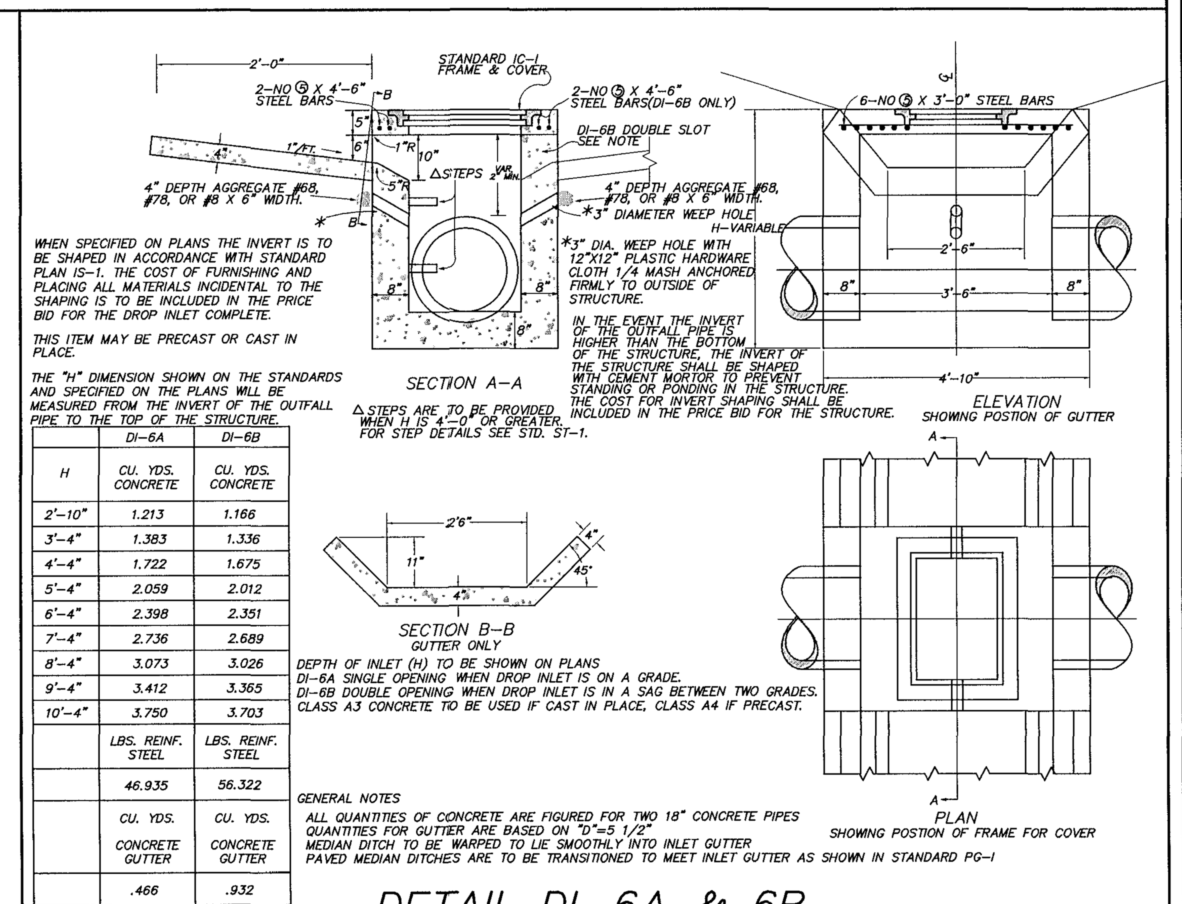


NOTES:
1. FOR TABLE OF DIMENSIONS AND VOLUMES FOR CIRCULAR PIPES (STANDARD EW-2) SEE SHEET 2 OF 3.
2. FOR TABLE OF DIMENSIONS AND VOLUMES FOR ELLIPTICAL PIPES (STANDARD EW-2A) SEE SHEET 3 OF 3.
3. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
4. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF ROAD.
5. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEETS 101.06 AND 101.07.
6. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
7. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND SKEW ANGLES TO 15°.
8. COST OF BARS FOR CRACK CONTROL TO BE INCLUDED IN PRICE PER BID PER CUBIC YARD CONCRETE.
9. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT AND WINGWALLS OCCUR.
10. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT). HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
11. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

SPECIFICATION REFERENCE 105 302

STANDARD ENDWALL FOR PIPE CULVERTS
42" - 96" CIRCULAR AND 60" x 38" - 106" x 68" ELLIPTICAL PIPES
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 3 — 101.03



WHEN SPECIFIED ON PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD PLAN IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE PRICE BID FOR THE DROP INLET COMPLETE.

THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE.

*3" DIA. WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH 1/4 MASH ANCHORED FIRMLY TO OUTSIDE OF STRUCTURE.

IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTOR TO PREVENT STANDING OR PONDING IN THE STRUCTURE. THE COST FOR INVERT SHAPING SHALL BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.

△ STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR STEP DETAILS SEE STD. ST-1.

H	DI-6A CU. YDS. CONCRETE	DI-6B CU. YDS. CONCRETE
2'-10"	1.213	1.166
3'-4"	1.383	1.336
4'-4"	1.722	1.675
5'-4"	2.059	2.012
6'-4"	2.398	2.351
7'-4"	2.736	2.689
8'-4"	3.073	3.026
9'-4"	3.412	3.365
10'-4"	3.750	3.703
	LBS. REINF. STEEL	LBS. REINF. STEEL
	46.935	56.322
	CU. YDS. CONCRETE GUTTER	CU. YDS. CONCRETE GUTTER
	.466	.932

DEPTH OF INLET (H) TO BE SHOWN ON PLANS
DI-6A SINGLE OPENING WHEN DROP INLET IS ON A GRADE.
DI-6B DOUBLE OPENING WHEN DROP INLET IS IN A SAG BETWEEN TWO GRADES.
CLASS A3 CONCRETE TO BE USED IF CAST IN PLACE, CLASS A4 IF PRECAST.

GENERAL NOTES
ALL QUANTITIES OF CONCRETE ARE FIGURED FOR TWO 18" CONCRETE PIPES
QUANTITIES FOR GUTTER ARE BASED ON "D"=5 1/2"
MEDIAN DITCH TO BE WARPED TO LIE SMOOTHLY INTO INLET GUTTER
PAVED MEDIAN DITCHES ARE TO BE TRANSITIONED TO MEET INLET GUTTER AS SHOWN IN STANDARD PG-1

DETAIL DI-6A & 6B
NO SCALE

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised R/W Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Notes & Details

Sheet Number
24

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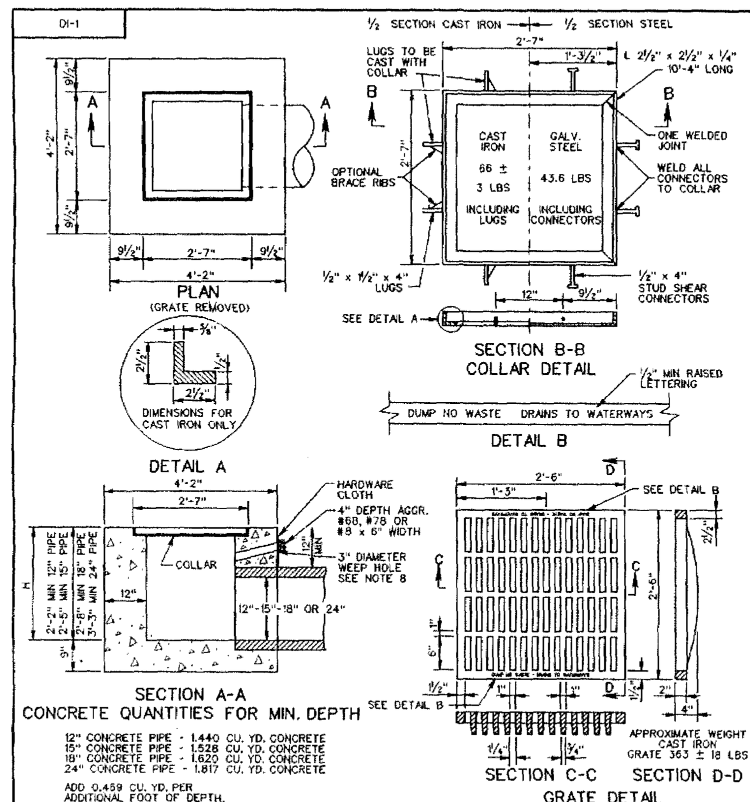
DI-1



CONCRETE QUANTITIES FOR MIN. DEPTH

12" CONCRETE PIPE - 1.440 CU. YD. CONCRETE
15" CONCRETE PIPE - 1.528 CU. YD. CONCRETE
18" CONCRETE PIPE - 1.620 CU. YD. CONCRETE
24" CONCRETE PIPE - 1.817 CU. YD. CONCRETE

ADD 0.459 CU. YD. PER ADDITIONAL FOOT OF DEPTH.

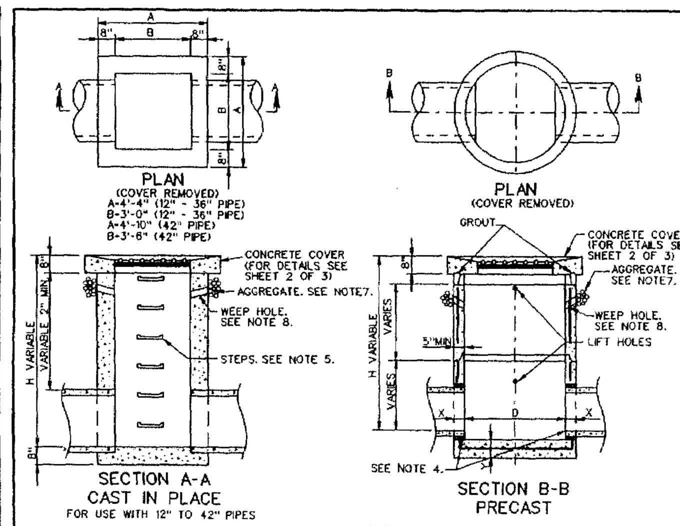
NOTES

1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS. FOR DEPTH GREATER THAN 10' USE STANDARD DI-1A
2. THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO INLET SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.
7. #4 X 8" SMOOTH DOWELS AT APPROXIMATELY 12" C-C TO BE PLACED IN ALL AREAS ADJACENT TO ABUTTING CONCRETE TO PREVENT SETTLEMENT. IN LIEU OF DOWELS A 2"X4" NOTCH MAY BE PROVIDED. SEE STANDARD T-DI-3, 4 FOR ALTERNATE DESIGN.
8. 3" DIAMETER WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH ¼" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. CAST IN PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
10. ANY ALTERNATE METHODS OF ANCHORAGE MEETING THE APPROVAL OF THE ENGINEER MAY BE SUBSTITUTED FOR THE CAST IRON LUGS AS SHOWN HEREON.
11. DUMP NO WASTE DRAINS TO WATERWAY LETTERING IS REQUIRED ON ALL DI-1 GRATES. LOCATION OF LETTERING MAY VARY BY MANUFACTURER.

VDOT ROAD AND BRIDGE STANDARDS | SHEET 1 OF 1 | REVISION DATE | 104.01

STANDARD DROP INLET
12" - 24" PIPE: MAXIMUM DEPTH (H) - 10'
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 233 302

DI-7, 7A, 7B



RECOMMENDED MINIMUM HEIGHT CHART

PIPE SIZE	H DIMENSION CONC.	H DIMENSION CORR. METAL
12"	2'-6"	2'-5"
15"	2'-9¼"	2'-8"
18"	3'-0½"	2'-11"
21"	3'-3¾"	3'-2"
24"	3'-7"	3'-5"
27"	3'-10¼"	3'-8"
30"	4'-1½"	3'-11"
33"	4'-4¾"	4'-2"
36"	4'-8"	4'-5"
42"	5'-2½"	4'-11"

PIPE SIZE	12"	15"	18"	24"	30"	36"	42"
MINIMUM DEPTH H	2'-0"	2'-3¾"	2'-6½"	3'-1"	3'-7½"	4'-2"	4'-8½"
CONCRETE CUBIC YARDS	.947	1.045	1.143	1.339	1.535	1.731	1.927

INCREMENT PER FOOT OF ADDITIONAL DEPTH (H) { = 0.362 CU. YDS. (12" - 36" PIPE) = 0.410 CU. YDS. (42" PIPE)

NOTES

1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS.
2. THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS. MAXIMUM DEPTH (H) TO BE 12'-8.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICEN FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. REINFORCED CONCRETE FOOTING MAY BE PRECAST OR CAST-IN-PLACE. TWO LIFTING HOOKS OF FABRICATORS DESIGN TO BE PROVIDED IN PRECAST FOOTING
7. 4" DEPTH AGGREGATE #68, #78, OR #8 X 6" WIDTH.
8. 3" DIAMETER WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH ¼" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. THE TYPE OF INLET (PRECAST OR CAST IN PLACE), DETAILED HEREON, TO BE CONSTRUCTED, WILL BE AT THE OPTION OF THE CONTRACTOR.
10. FOR DETAILS OF CONCRETE COVER, COLLAR AND GRATE AND THE METHOD OF PLACING APPROACH GUTTER SEE SHEET 2 OF 3.
11. CAST-IN-PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
12. CONCRETE QUANTITIES SHOWN ARE FOR INDICATED DEPTH (H) WITHOUT PIPES. THE AMOUNT DISPLACED BY PIPES MUST BE DEDUCTED TO OBTAIN TRUE QUANTITIES. FOR INLETS OF DIFFERENT DEPTHS ADD OR SUBTRACT THE APPROPIATE CUBIC YARDS OF CONCRETE FOR EACH FOOT OF DEPTH.
13. PAVED DITCHES ARE TO BE TRANSITIONED TO MEET INLET GUTTER AS SHOWN IN STANDARD PG-2A.
14. PROVIDE SAFETY SLABS WHEN SPECIFIED ON THE PLANS.

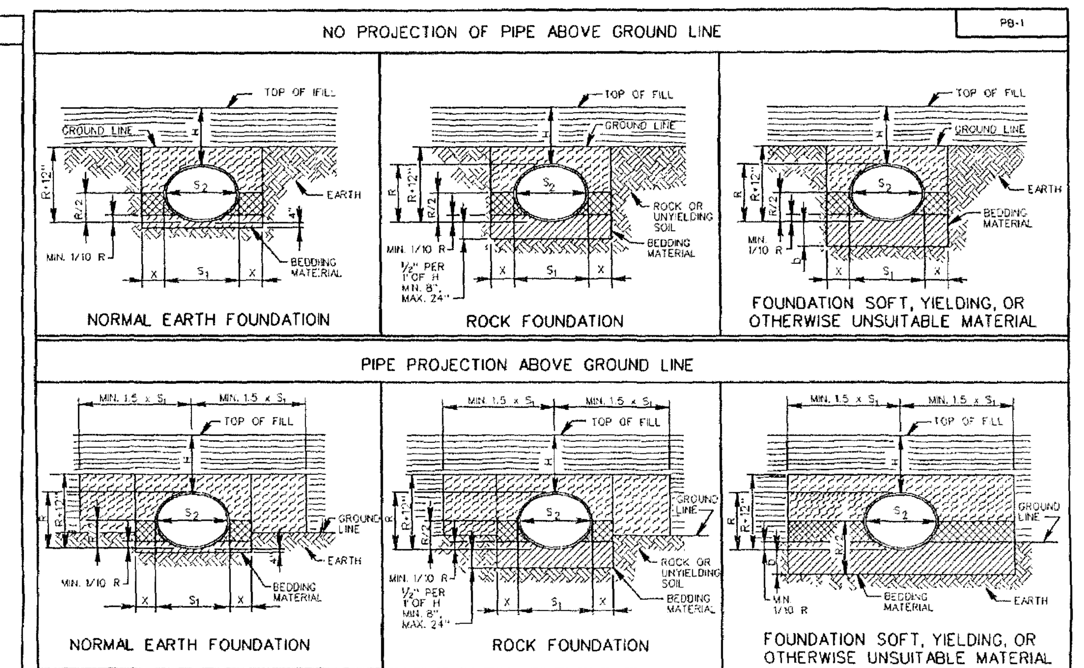
NOTES (CONT.)

15. DI-7--------NO GUTTER
DI-7A-------SINGLE GUTTER WHEN DROP INLET IS ON A GRADE.
DI-7B------ DOUBLE GUTTER WHEN DROP INLET IS IN A SAG BETWEEN TWO GRADES.
16. FOR DETAILS OF PRECAST DI-7 NOT SHOWN HEREON SEE PRECAST UNIT ASSEMBLY DIAGRAM, PAGE 103.01. FOR PRECAST GENERAL NOTES, PAGE 103.02 AND FOR APPLICABLE PRECAST BASE, RISER AND TOP DETAILS, PAGES 103.07 THRU 103.12.
17. GRATE BARS TO BE PARALLEL TO DITCH FLOW.

SPECIFICATION REFERENCE 241 503

STANDARD MEDIAN DROP INLET
12" TO 42" PIPE
VIRGINIA DEPARTMENT OF TRANSPORTATION
VDOT ROAD AND BRIDGE STANDARDS | REVISION DATE | SHEET 1 OF 3 | 104.22

PB-1



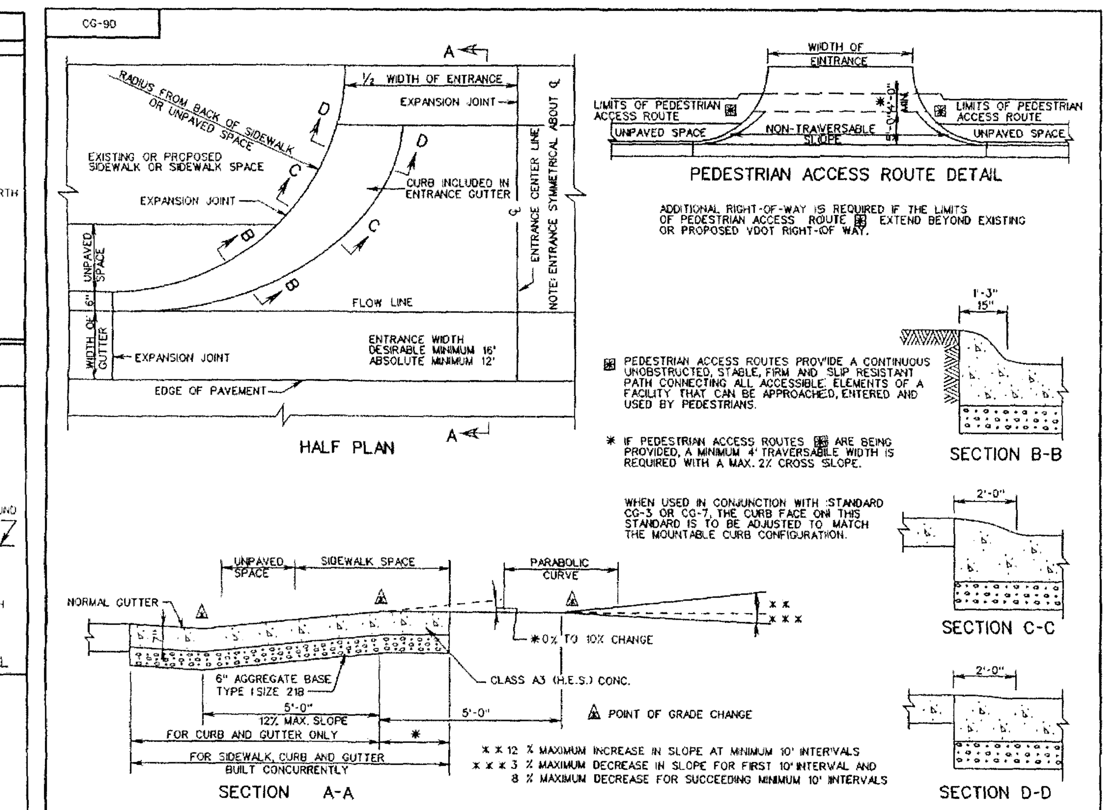
BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
EMBANKMENT

NOTES:
FOR GENERAL NOTES ON PIPE BEDDING, SEE INSTALLATION OF PIPE CULVERTS AND STORM SEWERS GENERAL NOTES ON SHEET 107.00.
CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 25 AND 26 MAY BE USED IN PLACE OF CLASS I BACKFILL.

SPECIFICATION REFERENCE 302 303

INSTAL. OF PIPE CULVERTS AND STORM SEWERS ELLIP. PIPE BEDDING AND BACKFILL - METHOD "A"
VIRGINIA DEPARTMENT OF TRANSPORTATION
VDOT ROAD AND BRIDGE STANDARDS | REVISION DATE 10/09 | SHEET 2 OF 4 | 107.02

CG-9D



ADDITIONAL RIGHT-OF-WAY IS REQUIRED IF THE LIMITS OF PEDESTRIAN ACCESS ROUTE ▣ EXTEND BEYOND EXISTING OR PROPOSED VDOT RIGHT-OF-WAY.

▣ PEDESTRIAN ACCESS ROUTES PROVIDE A CONTINUOUS UNOBSTRUCTED, STABLE, FIRM AND SLIP RESISTANT PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.

* IF PEDESTRIAN ACCESS ROUTES ▣ ARE BEING PROVIDED, A MINIMUM 4' TRAVERSABLE WIDTH IS REQUIRED WITH A MAX. 2% CROSS SLOPE.

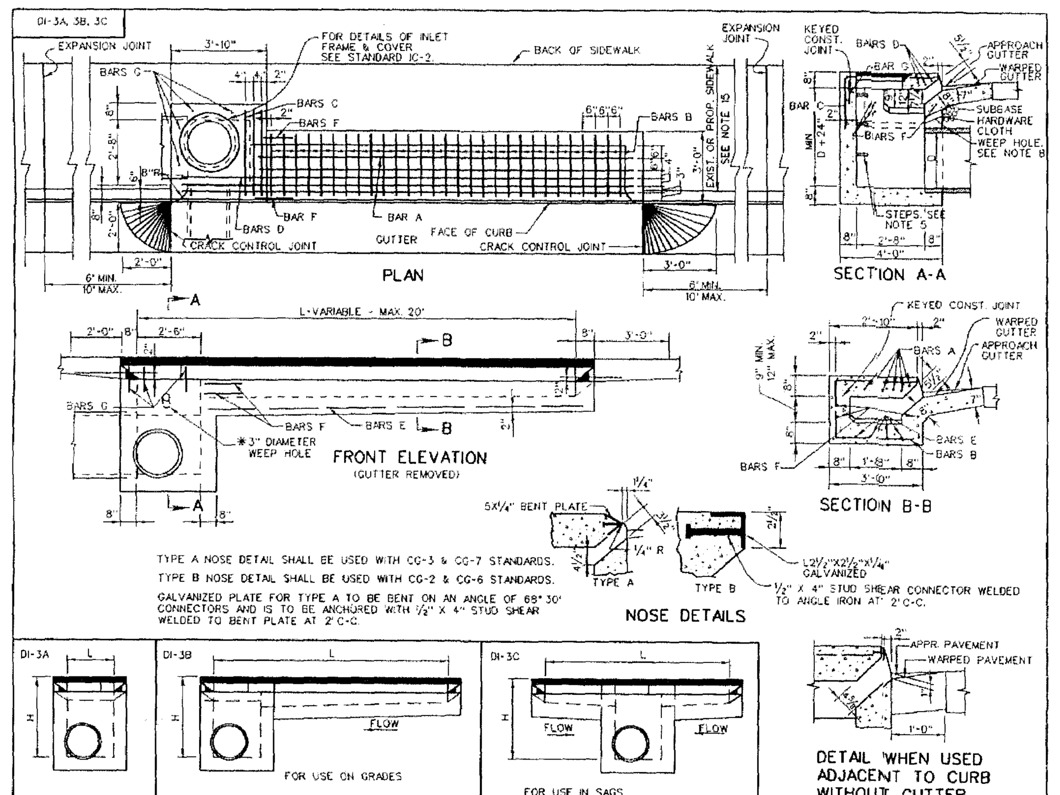
WHEN USED IN CONJUNCTION WITH STANDARD CG-3 OR CG-7, THE CURB FACE ON THIS STANDARD IS TO BE ADJUSTED TO MATCH THE MOUNTABLE CURB CONFIGURATION.

x x 12 % MAXIMUM INCREASE IN SLOPE AT MINIMUM 10' INTERVALS
x x x 3 % MAXIMUM DECREASE IN SLOPE FOR FIRST 10' INTERVAL AND 8 % MAXIMUM DECREASE FOR SUCCEEDING MINIMUM 10' INTERVALS

VDOT ROAD AND BRIDGE STANDARDS | SHEET 1 OF 1 | REVISION DATE | 203.03

STANDARD ENTRANCE GUTTER
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 502

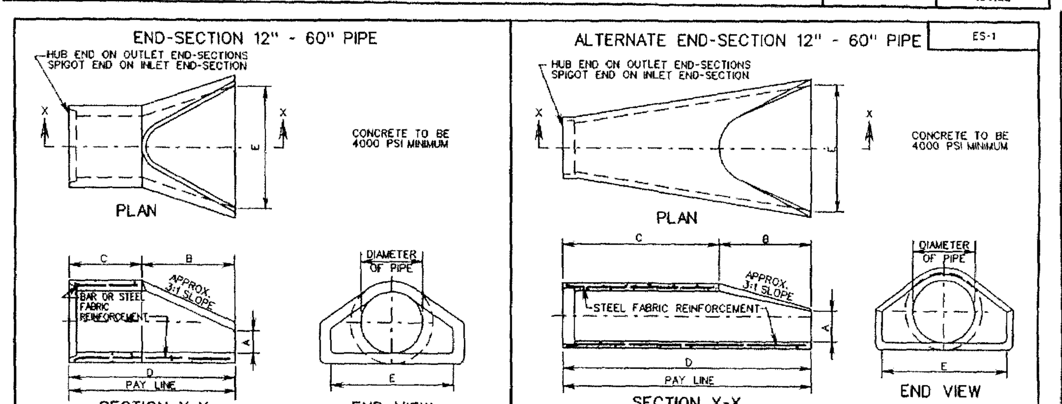
DI-3A, 3B, 3C



VDOT ROAD AND BRIDGE STANDARDS | SHEET 1 OF 2 | REVISION DATE 08/10 | 104.09

STANDARD CURB DROP INLET
12" - 30" PIPE: MAXIMUM DEPTH (H) = 8'
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 233 302

ES-1

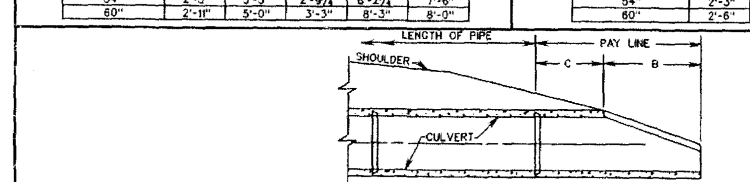


END SECTION DIMENSIONS

PIPE DIAMETER	A	B	C	D	E
12"	4"	2'-0"	2'-0"	4'-0"	2'-0"
15"	6"	2'-3"	1'-9"	4'-0"	2'-6"
18"	9"	2'-3"	1'-9"	4'-0"	3'-0"
21"	9¼"	2'-11"	2'-1"	5'-0"	3'-6"
24"	9½"	3'-7"	2'-6"	6'-1"	4'-0"
27"	10½"	4'-0"	2'-1"	6'-1"	4'-6"
30"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"
33"	1'-1½"	4'-10½"	2'-3¼"	7'-1¾"	5'-6"
36"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"
48"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"
54"	2'-3"	5'-5"	2'-9¼"	8'-2¼"	7'-6"
60"	2'-11"	5'-0"	3'-3"	8'-3"	8'-0"

END SECTION DIMENSIONS (ALTERNATE)

PIPE DIAMETER	A	B	C	D	E
12"	4"	2'-0"	4'-1"	6'-1"	2'-0"
15"	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	9"	2'-11"	3'-2"	6'-1"	3'-6"
24"	10"	3'-7"	2'-8"	6'-3"	4'-0"
27"	10½"	4'-0"	2'-1½"	6'-1½"	4'-6"
30"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"
33"	1'-1½"	4'-10½"	3'-3¼"	8'-1¾"	5'-6"
36"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"
48"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"
54"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"
60"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"

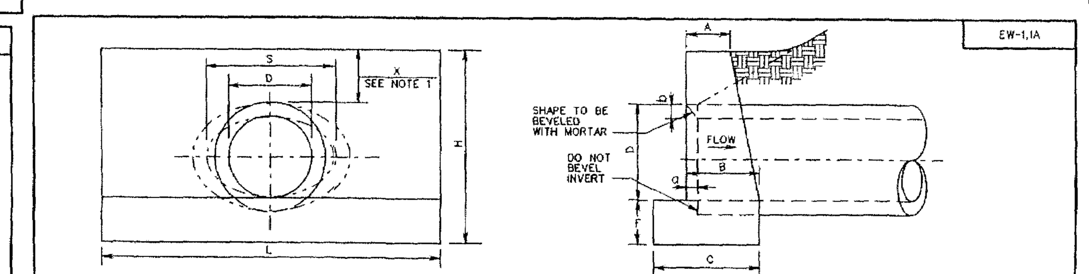


NOTES:
PIPE LENGTHS SHOWN ON PLANS ARE BASED ON END-SECTION DESIGN SHOWN ON THE LEFT. IF THE CONTRACTOR ELECTS TO USE THE ALTERNATE DESIGN SHOWN ON THE RIGHT, LENGTHS WILL BE REDUCED BY THE DIFFERENCE IN DIMENSION "D".

SPECIFICATION REFERENCE 302

FLARED END SECTION
12" - 60" CONCRETE PIPE CULVERTS
VIRGINIA DEPARTMENT OF TRANSPORTATION
VDOT ROAD AND BRIDGE STANDARDS | REVISION DATE | SHEET 1 OF 1 | 102.01

EW-1,1A



NOTES:
1. "H" MAY BE REDUCED UNTIL "X" REACHES A MINIMUM OF 4" WHERE ENDWALL WOULD PROTRUDE ABOVE SHOULDER LINE. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEET 101.02.
4. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND ALL SKEWS(0° TO 45°).
5. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR.
6. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT).
7. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
8. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
9. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

EW-1

ENDWALL FOR CIRCULAR PIPE (DIAMETER OF PIPE CULVERT)

	12"	15"	18"	21" OR 24"	27" OR 30"	33" OR 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-11"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-4"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-3"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	4'-0"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
a	0'-¼"	0'-1¾"	0'-2"	0'-2½"	0'-3¼"	0'-3¾"
b	0'-1"	0'-1¼"	0'-1½"	0'-2"	0'-2½"	0'-3"
CUBIC YARDS OF CONCRETE						
CONC. PIPE	0.241	0.492	0.697	1.319	2.067	2.947
C.M. PIPE	0.257	0.521	0.739	1.398	2.198	3.145

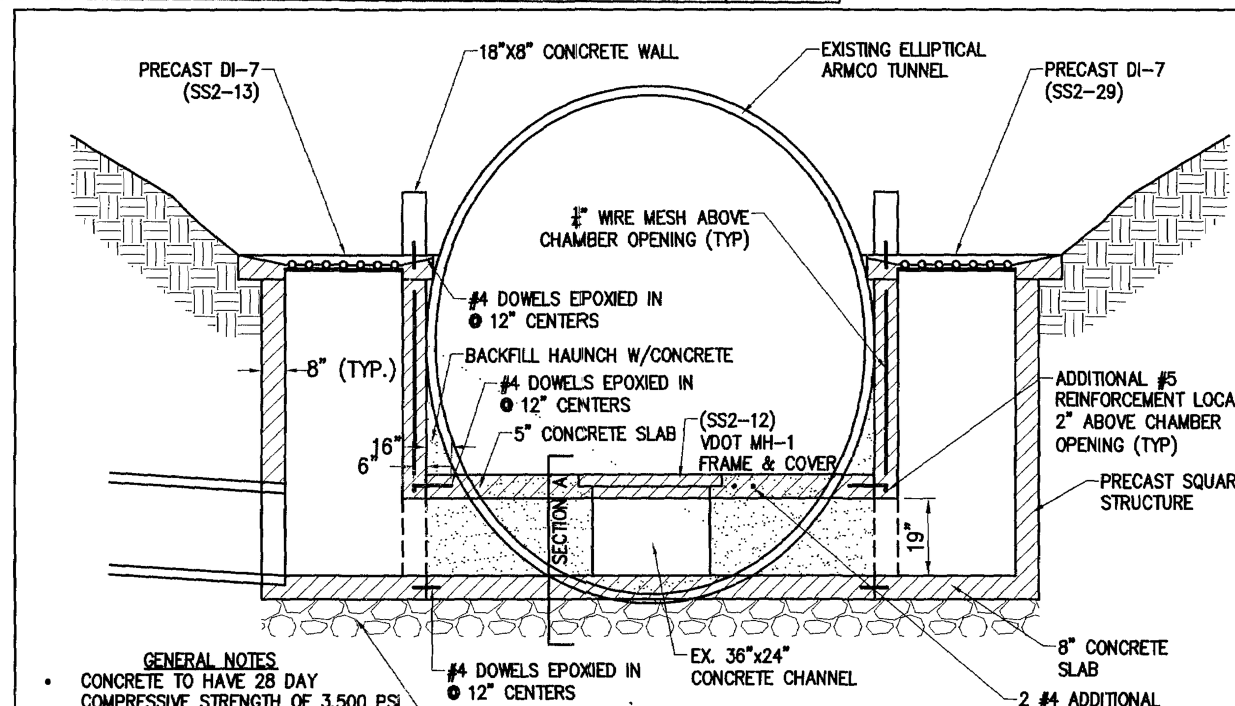
EW-1A

ENDWALL FOR ELLIPTICAL PIPE (SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE))

	23"x14"	30"x19"	34"x22"	38"x24"	42"x27"	45"x29"	49"x32"	53"x34"
A	0'-8"	0'-9"	0'-10"	0'-11"	0'-11"	1'-0"	1'-0"	1'-0"
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"
a	0'-2½"	0'-3¼"	0'-3½"	0'-4"	0'-4½"	0'-4¾"	0'-5"	0'-5½"
b	0'-2"	0'-2½"	0'-2¾"	0'-3"	0'-3½"	0'-3¾"	0'-4"	0'-4½"
CUBIC YARDS OF CONCRETE								
CONC.PIPE	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801

SPECIFICATION REFERENCE 105 302

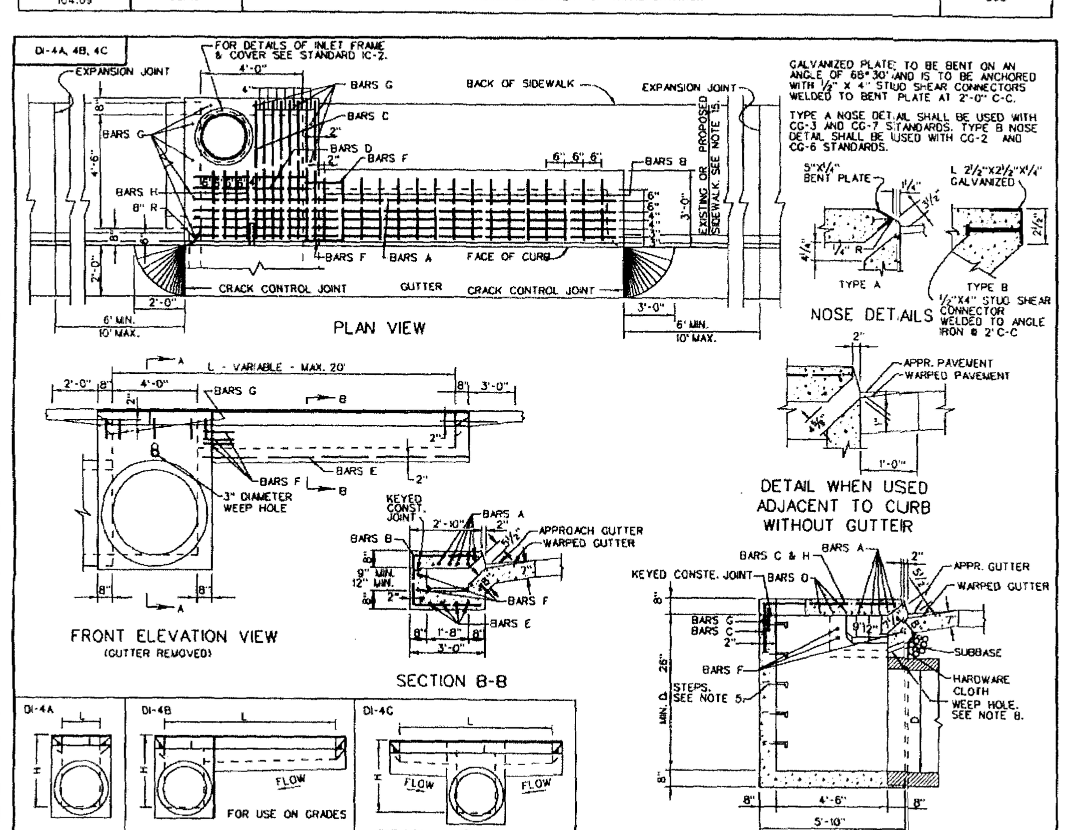
STANDARD ENDWALL FOR PIPE CULVERTS
12" - 36" CIRCULAR AND 23" x 14" - 53" x 34" ELLIPTICAL PIPES
VIRGINIA DEPARTMENT OF TRANSPORTATION
VDOT ROAD AND BRIDGE STANDARDS | REVISION DATE | SHEET 1 OF 1 | 101.01



GENERAL NOTES
- CONCRETE TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI USING ASTM C-150 TYPE 1 CEMENT.
- REINFORCING STEEL TO BE DEFORMED BARS INTERMEDIATE GRADE BILLET STEEL, ASTM A-615, GRADE 60.
- EXPOSED EDGES OF CONCRETE TO BE CHAMFERED 1"x1" UNLESS OTHERWISE NOTED.

SECTION VIEW
STORM SEWER CONNECTION AT CSX TUNNEL
NTS.

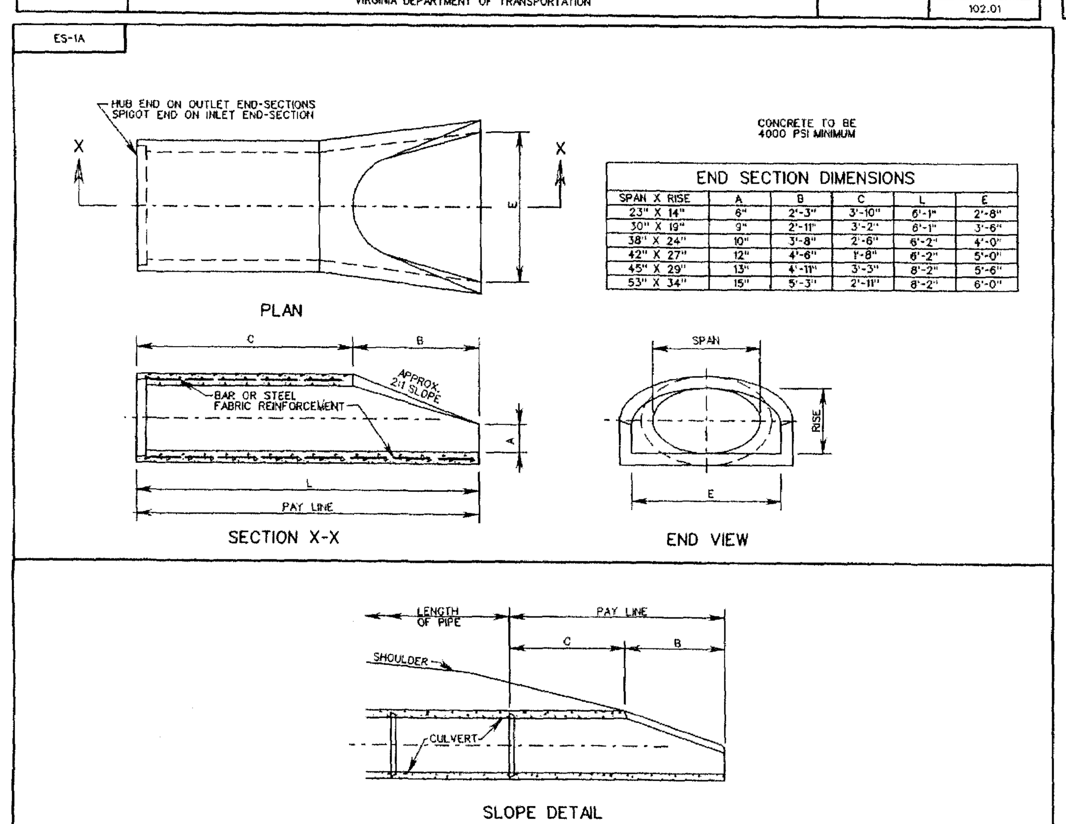
DI-4A, 4B, 4C



VDOT ROAD AND BRIDGE STANDARDS | SHEET 1 OF 2 | REVISION DATE 10/09 | 104.15

STANDARD CURB DROP INLET
36" - 48" PIPE: MAXIMUM DEPTH (H) = 8'
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 233 302

ES-1A



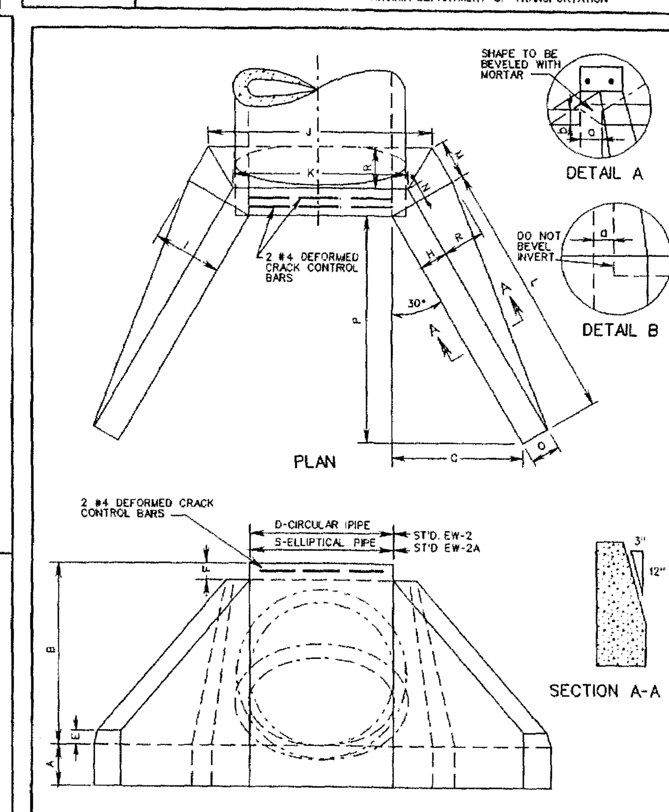
END SECTION DIMENSIONS

SPAN X RISE	A	B	C	L	E
23" X 14"	6"	2'-3"	3'-10"	6'-1"	2'-8"
30" X 19"	9"	2'-11"	3'-2"	6'-1"	3'-6"
38" X 24"	10"	3'-8"	2'-6"	6'-2"	4'-0"
42" X 27"	12"	4'-6"	1'-8"	6'-2"	5'-0"
45" X 29"	13"	4'-11"	3'-3"	8'-2"	5'-6"
53" X 34"	15"	5'-3"	2'-11"	8'-2"	6'-0"

VDOT ROAD AND BRIDGE STANDARDS | SHEET 1 OF 1 | REVISION DATE | 102.02

FLARED END-SECTION
23" x 14" TO 53" x 34" ELLIPTICAL CONCRETE PIPE CULVERTS
VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIFICATION REFERENCE 302

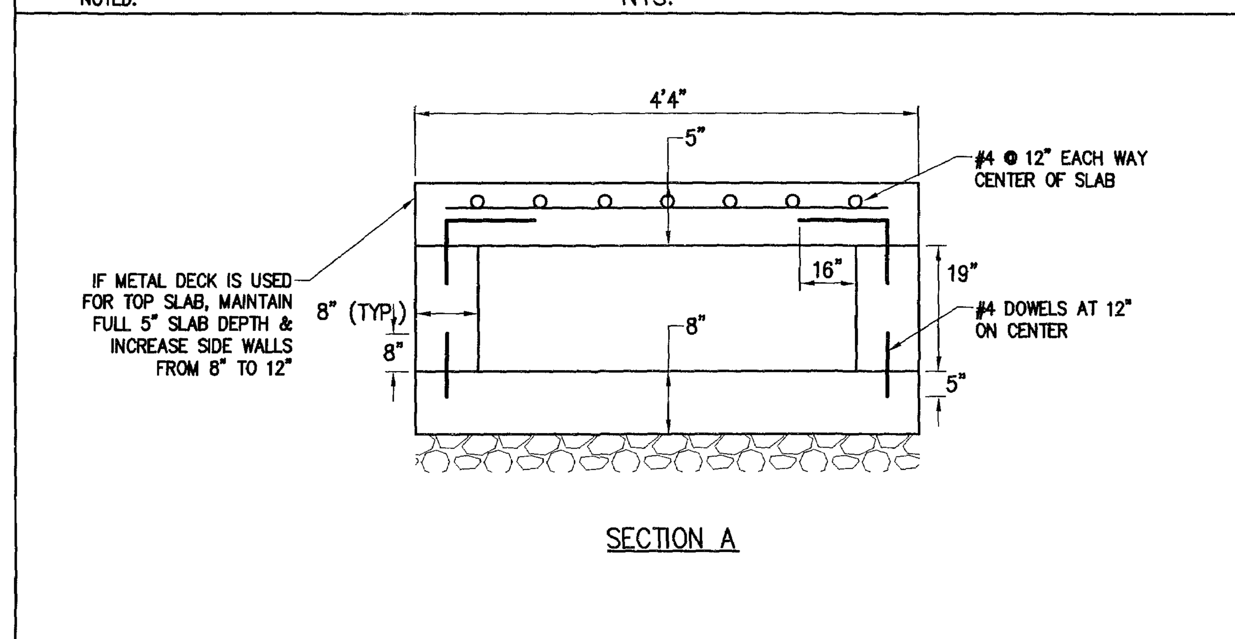
EW-2, 2A



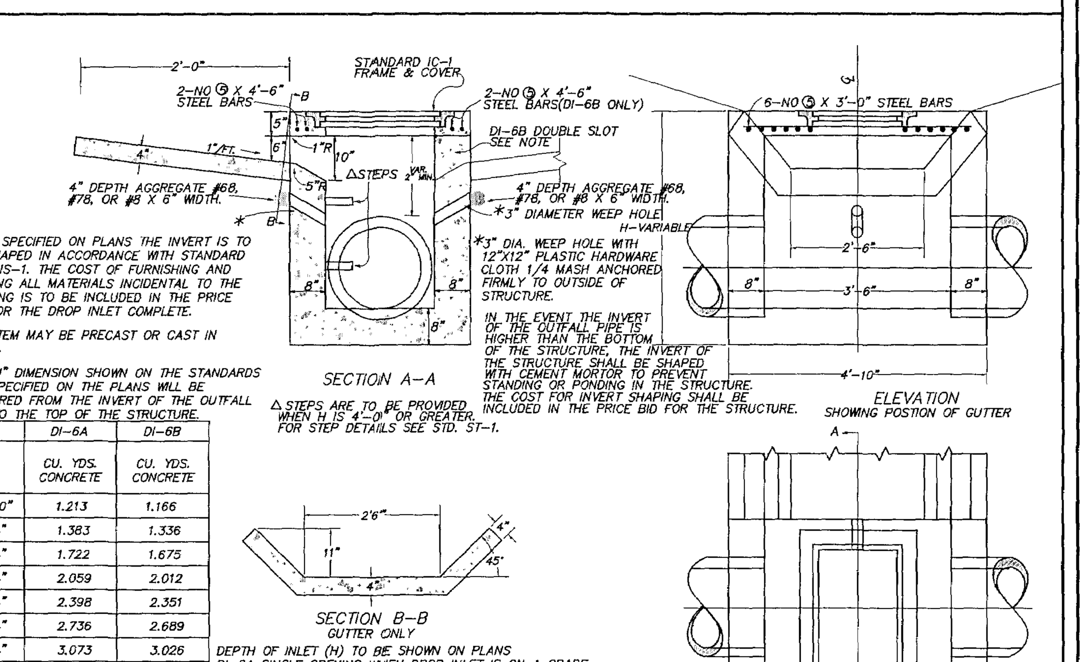
NOTES:
1. FOR TABLE OF DIMENSIONS AND VOLUMES FOR CIRCULAR PIPES (STANDARD EW-2) SEE SHEET 2 OF 3.
2. FOR TABLE OF DIMENSIONS AND VOLUMES FOR ELLIPTICAL PIPES (STANDARD EW-2A) SEE SHEET 3 OF 3.
3. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
4. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF ROAD.
5. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEETS 101.06 AND 101.07.
6. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
7. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND SKEW ANGLES TO 15°.
8. COST OF BARS FOR CRACK CONTROL TO BE INCLUDED IN PRICE PER BID PER CUBIC YARD CONCRETE.
9. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT AND WINGWALLS OCCUR.
10. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT). HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
11. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

SPECIFICATION REFERENCE 105 302

STANDARD ENDWALL FOR PIPE CULVERTS
42" - 96" CIRCULAR AND 60" x 38" - 106" x 68" ELLIPTICAL PIPES
VIRGINIA DEPARTMENT OF TRANSPORTATION
VDOT ROAD AND BRIDGE STANDARDS | REVISION DATE | SHEET 1 OF 3 | 101.03



SECTION A



WHEN SPECIFIED ON PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD PLAN IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE PRICE BID FOR THE DROP INLET COMPLETE.

THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE.

△ STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR STEP DETAILS SEE STD. ST-1.

*3" DIA. WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH 1/4 MASH ANCHORED FIRMLY TO OUTSIDE OF STRUCTURE.

IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTOR TO PREVENT STANDING OR PONDING IN THE STRUCTURE. THE COST FOR INVERT SHAPING SHALL BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.

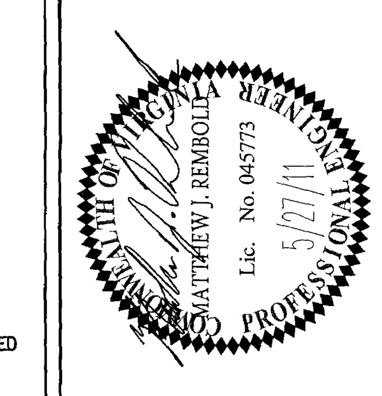
H	DI-6A CU. YDS. CONCRETE	DI-6B CU. YDS. CONCRETE
2'-10"	1.213	1.166
3'-4"	1.383	1.336
4'-4"	1.722	1.675
5'-4"	2.059	2.012
6'-4"	2.398	2.351
7'-4"	2.736	2.689
8'-4"	3.073	3.026
9'-4"	3.412	3.365
10'-4"	3.750	3.703
	LBS. REINF. STEEL	LBS. REINF. STEEL
	46.935	56.322
	CU. YDS. CONCRETE GUTTER	CU. YDS. CONCRETE GUTTER
	.466	.932

DEPTH OF INLET (H) TO BE SHOWN ON PLANS
DI-6A SINGLE OPENING WHEN DROP INLET IS ON A GRADE.
DI-6B DOUBLE OPENING WHEN DROP INLET IS IN A SAG BETWEEN TWO GRADES.
CLASS A3 CONCRETE TO BE USED IF CAST IN PLACE, CLASS A4 IF PRECAST.

GENERAL NOTES
ALL QUANTITIES OF CONCRETE ARE FIGURED FOR TWO 18" CONCRETE PIPES
QUANTITIES FOR GUTTER ARE BASED ON "D"=5 1/2"
MEDIAN DITCH TO BE WARPED TO LIE SMOOTHLY INTO INLET GUTTER
PAVED MEDIAN DITCHES ARE TO BE TRANSITIONED TO MEET INLET GUTTER AS SHOWN IN STANDARD PG-1

DETAIL DI-6A & 6B
NO SCALE

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR



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Williamsburg Pottery
Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Notes & Details

Sheet Number
24

STORMWATER MANAGEMENT/ BMP FACILITY MAINTENANCE PLAN

PROPER MAINTENANCE OF THIS FACILITY IS ENCOURAGED TO PREVENT THE INTRODUCTION OF DEBRIS AND SEDIMENT IN TO THE FACILITY, SPILLWAY(S) AND DOWNSTREAM WATERWAYS. FOLLOWING INSTALLATION OF THE FACILITY AND ESTABLISHMENT OF VEGETATION IN DISTURBED AREAS, INSPECTIONS FOR SEDIMENT BUILDUPS WILL BE PERFORMED AT LEAST QUARTERLY. IT IS ANTICIPATED THAT UNDER NORMAL CONDITIONS, SEDIMENT REMOVAL FROM THE FACILITY WILL BE REQUIRED ONCE EVERY 10 YEARS. IF OTHER CONSTRUCTION OR RELATED ACTIVITIES ARE PERFORMED ON UPSLOPE PARCELS, ADEQUATE PROTECTION SHOULD BE PROVIDED AND INSPECTIONS PERFORMED AT LEAST ONCE WEEKLY OF THESE NEWLY DISTRIBUTED AREAS AS WELL AS INSPECTIONS FOR ACCUMULATED SEDIMENTS AT TWO BMP FACILITY.

A DESIGNATED REPRESENTATIVE OF THE OWNER WILL INSPECT THE BMP STRUCTURE AFTER EACH SIGNIFICANT RAINFALL EVENT OR THE FOLLOWING WORKING DAY IF A WEEKEND OR HOLIDAY OCCURS. A SIGNIFICANT RAINFALL FOR THIS STRUCTURE IS DEFINED AS ONE (1) INCH OR MORE OF GAUGED RAINFALL WITHIN A 24 HOUR PERIOD. ONCE PER YEAR, A REPRESENTATIVE OF THE COUNTY MAY JOINTLY INSPECT THE STRUCTURE. APPROPRIATE ACTION, PERFORMED AT THE COST OF THE OWNER, WILL BE TAKEN TO ENSURE APPROPRIATE MAINTENANCE. KEYS TO LOCKED ACCESS POINTS SHALL BE MADE AVAILABLE TO COUNTY INSPECTION PERSONNEL UPON REQUEST.

INSPECTION AND MAINTENANCE OF THE FACILITY WILL CONSIST OF THE FOLLOWING ADDITIONAL MEASURES:

1. THE INSPECTION FOR SEDIMENT BUILDUP WILL BE PERFORMED BY VISUAL INSPECTION AND A PHYSICAL DETERMINATION OF SEDIMENT DEPTH WITHIN THE STORAGE AREA. SEDIMENT REMOVAL IS REQUIRED USING A RUBBER-WHEELED BACKHOE. AT THE SAME TIME, OR AT LEAST ONCE PER YEAR, THE RISER BOTTOM AND OUTLET PIPE SHALL BE CLEANED OF ACCUMULATED SEDIMENTS. DISPOSE OF SEDIMENTS REMOVED FROM THE FACILITY AT AN ACCEPTABLE DISPOSAL AREA. SEDIMENT SHALL NOT BE ALLOWED TO ACCUMULATE IN DEPTHS GREATER THAN 1-FOOT. NO SEDIMENT SHALL BE ALLOWED TO ACCUMULATE TO PREVENT THE PROPER FUNCTION OF ANY PIPE OR CULVERT.

2. PERFORM MAINTENANCE MOWING OF GRASSED AREAS AT LEAST TWICE EACH YEAR. GRASSES SUCH AS TALL FESCUE SHOULD BE MOWED IN EARLY SUMMER AFTER EMERGENCE OF THE HEADS ON COOL SEASON GRASSES AND IN LATE FALL TO PREVENT SEEDS OF ANNUAL WEEDS FROM MATURING. MOWING OF LEGUMES CAN BE LESS FREQUENT TREES AND SHRUBS SHOULD NOT BE PERMITTED TO GROW ON ANY PART OF THE GRADED EMBANKMENT.

3. PERFORM SOIL SAMPLING ON STABILIZED BMP SOIL AREAS ONCE EVERY FOUR (4) YEARS. SOIL SAMPLING AND TESTING SHOULD BE PERFORMED BY A QUALIFIED INDEPENDENT TESTING LABORATORY. APPLY ADDITIONAL LIME AND FERTILIZER IN ACCORDANCE WITH TEST RECOMMENDATIONS.

4. IN STABILIZED BMP AREAS, IF VEGETATION COVERS LESS THAN 40% OF SOIL SURFACES, LIME, FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDLINGS, AS LISTED IN DAM CONSTRUCTION NOTES. IF VEGETATION COVERS MORE THAN 40% BUT LESS THAN 70% OF SOIL SURFACES, LIME FERTILIZE AND OVERSEED IN ACCORDANCE WITH CURRENT SEEDLING RECOMMENDATIONS.

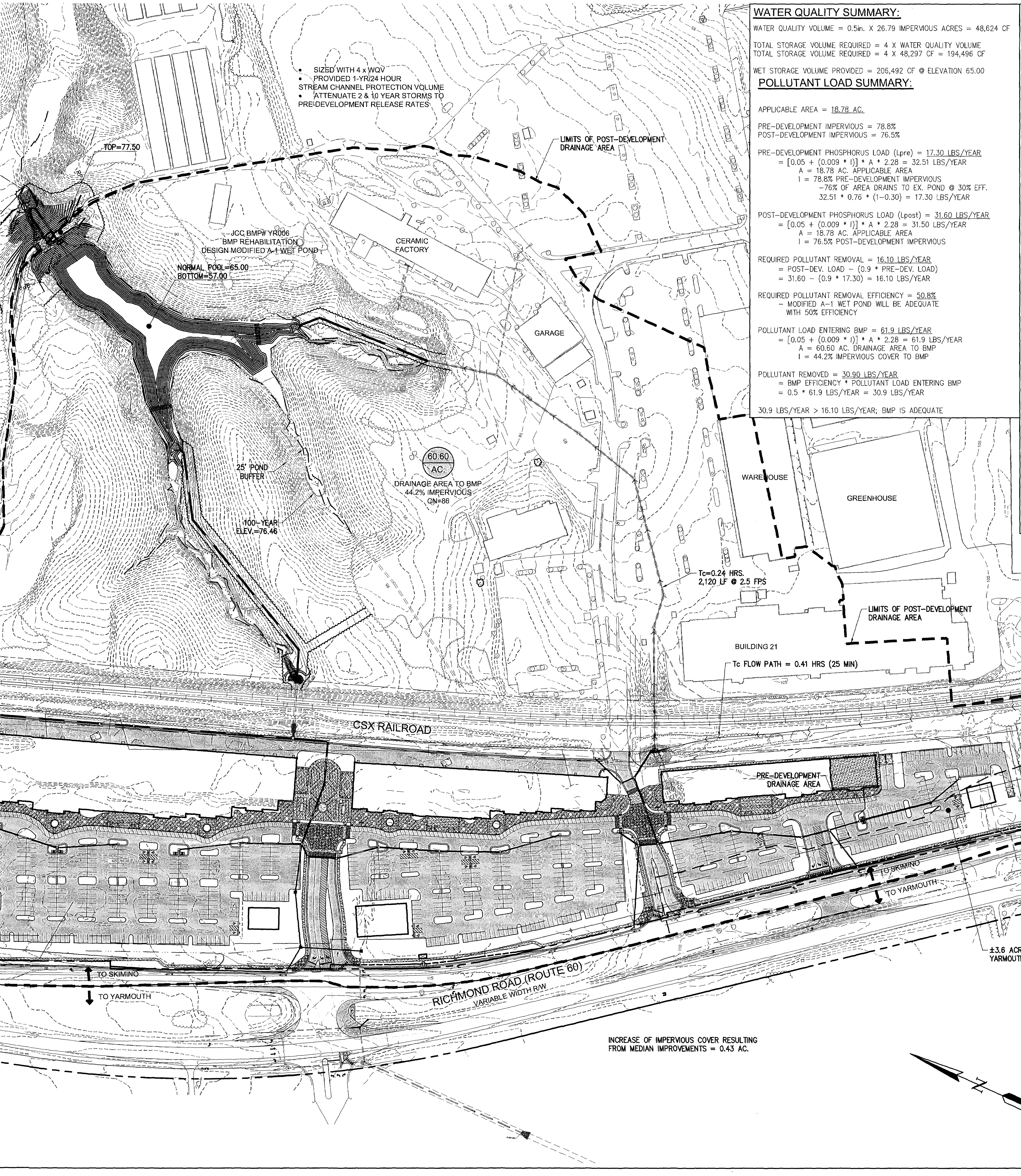
5. PERFORM QUARTERLY INSPECTIONS OF THE RELEASE STRUCTURES, RISER SECTION AND CREST OF SPILLWAY FOR THE OBSERVANCE OF COLLECTED DEBRIS. IMMEDIATELY REMOVE ANY DEBRIS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE. DURING QUARTERLY INSPECTIONS, THE POND DRAIN VALVE, USUALLY LEFT IN THE VALVE "CLOSED" POSITION, SHALL BE INSPECTED AND OPERATED THROUGH TWO COMPLETE FULL-OPEN TO FULL-CLOSE TO FULL-OPEN CYCLES.

6. PERFORM YEARLY STRUCTURAL INSPECTIONS OF THE FACILITY FOR DAMAGE. STRUCTURAL INSPECTION SHALL BE PERFORMED ON THE CONCRETE RISER, ANTI-VORTEX DEVICE, TRASH RACK, ORIFICE/ WEIR(S), OUTLET BARREL AND POND EMBANKMENT. IF DAMAGE IS EVIDENT, FURTHER INVESTIGATION BY A PROFESSIONAL ENGINEER MAY BE REQUIRED TO ASSESS THE CONTINUED INTEGRITY OF THE STRUCTURE.

7. PERFORM QUARTERLY INSPECTIONS OF THE GRADED SIDE SLOPES OF THE FACILITY FOR SIGNS OF ANIMAL/ RODENT BORROWS OR SLOPE EROSION. IMMEDIATELY PERFORM NECESSARY REPAIRS, REFILLING OR RESEEDING AS APPROPRIATE.

8. RECORD KEEPING. THE LANDOWNER OR DESIGNATED REPRESENTATIVE SHALL KEEP REASONABLE, ACCURATE WRITTEN RECORDS OF INSPECTIONS PERFORMED ON THE STRUCTURE. RECORDS SHALL DOCUMENT ROUTINE MAINTENANCE AND/ OR REPAIRS PERFORMED. COPIES SHALL BE PROVIDED TO THE COUNTY UPON REQUEST.

9. THE FACILITY SHALL NOT BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT/ APPROVAL OF THE COUNTY.



WATER QUALITY SUMMARY:

WATER QUALITY VOLUME = 0.5in. X 26.79 IMPERVIOUS ACRES = 48,624 CF

TOTAL STORAGE VOLUME REQUIRED = 4 X WATER QUALITY VOLUME
TOTAL STORAGE VOLUME REQUIRED = 4 X 48,297 CF = 194,496 CF

WET STORAGE VOLUME PROVIDED = 206,492 CF @ ELEVATION 65.00

POLLUTANT LOAD SUMMARY:

APPLICABLE AREA = 18.78 AC.

PRE-DEVELOPMENT IMPERVIOUS = 78.8%
POST-DEVELOPMENT IMPERVIOUS = 76.5%

PRE-DEVELOPMENT PHOSPHORUS LOAD (Lpre) = 17.30 LBS/YEAR
= [0.05 + (0.009 * I)] * A * 2.28 = 32.51 LBS/YEAR
A = 18.78 AC. APPLICABLE AREA
I = 78.8% PRE-DEVELOPMENT IMPERVIOUS
-76% OF AREA DRAINS TO EX. POND @ 30% EFF.
32.51 * 0.76 * (1-0.30) = 17.30 LBS/YEAR

POST-DEVELOPMENT PHOSPHORUS LOAD (Lpost) = 31.60 LBS/YEAR
= [0.05 + (0.009 * I)] * A * 2.28 = 31.50 LBS/YEAR
A = 18.78 AC. APPLICABLE AREA
I = 76.5% POST-DEVELOPMENT IMPERVIOUS

REQUIRED POLLUTANT REMOVAL = 16.10 LBS/YEAR
= POST-DEV. LOAD - (0.9 * PRE-DEV. LOAD)
= 31.60 - (0.9 * 17.30) = 16.10 LBS/YEAR

REQUIRED POLLUTANT REMOVAL EFFICIENCY = 50.8%
- MODIFIED A-1 WET POND WILL BE ADEQUATE
WITH 50% EFFICIENCY

POLLUTANT LOAD ENTERING BMP = 61.9 LBS/YEAR
= [0.05 + (0.009 * I)] * A * 2.28 = 61.9 LBS/YEAR
A = 60.60 AC. DRAINAGE AREA TO BMP
I = 44.2% IMPERVIOUS COVER TO BMP

POLLUTANT REMOVED = 30.90 LBS/YEAR
= BMP EFFICIENCY * POLLUTANT LOAD ENTERING BMP
= 0.5 * 61.9 LBS/YEAR = 30.9 LBS/YEAR

30.9 LBS/YEAR > 16.10 LBS/YEAR; BMP IS ADEQUATE

STORMWATER MANAGEMENT NARRATIVE:

DESCRIPTION
THIS PLAN PROPOSES THE CONSTRUCTION OF AN A-1 WET POND (MODIFIED TO ELIMINATE BENCHES) WITH A 50% REMOVAL EFFICIENCY DESIGNED TO MEET THE REQUIREMENTS OF THE CHESAPEAKE BAY PROTECTION ACT REQUIRING A 10% REDUCTION IN POLLUTANT LOAD LEAVING THE SITE AFTER REDEVELOPMENT. THE WORK IS TO BE PERFORMED IN ACCORDANCE WITH PROFFER CONDITION 7(b) OF THE APPROVED PROFFERS DATED MARCH 19, 2007.

LOCATION
THE LOCATION OF THIS FACILITY IS A REPLACEMENT OF AN EXISTING FARM POND LOCATED WITHIN THE SKIMINO CREEK WATERSHED ON LAND OWNED BY THE WILLIAMSBURG POTTERY FACTORY, INC. NORTHEAST OF THE CSX RAILROAD.

SOIL CHARACTERISTICS
SEE ENVIRONMENTAL INVENTORY SHEET 3.

RECEIVING WATER
THE EXISTING FARM POND AND THE PROPOSED WET POND BMP RECEIVE WATERS FROM THE ADJACENT UPLAND RETAIL AND PARKING AREAS OF THE SITE. AS A RESULT OF THIS REDEVELOPMENT APPROXIMATELY 3.6 ACRES OF THE YARMOUTH CREEK WATERSHED WILL BE REDIRECTED TO THE PROPOSED BMP, LESSENING THE IMPACTS TO YARMOUTH CREEK AND INCREASING THE POLLUTANT REMOVAL BENEFIT OF THIS REDEVELOPMENT.

EXISTING SITE CONDITIONS
THE EXISTING SITE IS A FULLY DEVELOPED RETAIL SHOPPING CENTER WITH EXISTING FARM POND LOCATED IN THE WOODS BELOW THE CSX RAILROAD RUNNING THROUGH THE WILLIAMSBURG POTTERY LANDS. THE EXISTING SUBJECT PARCEL IS 78.8% IMPERVIOUS WITH MILD TO MODERATE SLOPES GENERALLY FROM THE RICHMOND ROAD RIGHT OF WAY TOWARDS THE CSX RAILROAD. STORMWATER IS CONVEYED UNDER THE RAILROAD VIA A 36" CMP PIPE AND A 36"WX24"H CONCRETE CHANNEL RUNNING BENEATH THE POTTERY'S PEDESTRIAN TUNNEL.

PROPOSED DEVELOPMENT
THE PROPOSED REDEVELOPMENT OF THE SUBJECT PARCEL WILL PROVIDE A MODERNIZATION OF THE RETAIL FACILITIES LOCATED ALONG RICHMOND ROAD AND ELIMINATE THE RETAIL OPERATION BEHIND THE CSX RAILROAD. THE REDEVELOPMENT WILL REDUCE THE SITES IMPERVIOUS COVER TO 76.5%. THE SITES SLOPES AND DRAINAGE PATTERNS WILL REMAIN SIMILAR TO EXISTING, WITH PROPOSED STORM SEWER CONNECTIONS TO THE EXISTING STORMWATER CONVEYANCES UNDER THE CSX RAILROAD.

STORMWATER MANAGEMENT PLAN
SEE THIS SHEET, SHEETS 26 AND 27 FOR THE DETAILS OF THE STORMWATER MANAGEMENT PLAN.

HYDROLOGY & HYDRAULICS
SEE ENGINEERING REPORT ATTACHED WITH THE PLAN SUBMITTAL. DRAINAGE AREAS, LAND COVER, AND TIME OF CONCENTRATION INFORMATION CAN BE FOUND ON THIS SHEET. SOILS DATA CAN BE FOUND ON THE ENVIRONMENTAL INVENTORY SHEET 3.

MAINTENANCE
SEE THIS SHEET

ASSUMPTIONS
AS DISCUSSED WITH THE DIRECTOR OF ENVIRONMENTAL ENGINEERING AND JAMES CITY COUNTY, THE PROPOSED A-1 WETPOND DESIGN IS TO BE MODIFIED TO NOT INCLUDE BENCHES. THIS MODIFICATION WILL LIMIT THE AMOUNT OF CLEARING AND LAND DISTURBANCE IN THE AREA OF THE BMP. THE POND WILL BE ABLE TO SATISFY THE POLLUTANT REMOVAL REQUIREMENTS WITH ONLY 50% EFFICIENCY AS OPPOSED TO THE STANDARD 65% ASSOCIATED WITH A-1 WET POND.

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

COMMONWEALTH OF VIRGINIA
MATTHEW J. REMBOLD
Lic. No. 045773
12/15/10
PROFESSIONAL ENGINEER

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Williamsburg Pottery
Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010
Sheet Title:	BMP Drainage Map

Sheet Number
25

STORMWATER MANAGEMENT/ BMP FACILITY MAINTENANCE PLAN

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4. IN STABILIZED BMP AREAS, IF VEGETATION COVERS LESS THAN 40% OF SOIL SURFACES, LIME, FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDINGS, AS LISTED IN DAM CONSTRUCTION NOTES. IF VEGETATION COVERS MORE THAN 40% BUT LESS THAN 70% OF SOIL SURFACES, LIME FERTILIZE AND OVERSEED IN ACCORDANCE WITH CURRENT SEEDING RECOMMENDATIONS.
5. PERFORM QUARTERLY INSPECTIONS OF THE RELEASE STRUCTURES, RISER SECTION AND CREST OF SPILLWAY FOR THE OBSERVANCE OF COLLECTED DEBRIS. IMMEDIATELY REMOVE ANY DEBRIS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE. DURING QUARTERLY INSPECTIONS, THE POND DRAIN VALVE, USUALLY LEFT IN THE VALVE "CLOSED" POSITION, SHALL BE INSPECTED AND OPERATED THROUGH TWO COMPLETE FULL-OPEN TO FULL-CLOSE TO FULL-OPEN CYCLES.
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9. THE FACILITY SHALL NOT BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT/ APPROVAL OF THE COUNTY.

WATER QUALITY SUMMARY:

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TOTAL STORAGE VOLUME REQUIRED = 4 X WATER QUALITY VOLUME
TOTAL STORAGE VOLUME REQUIRED = 4 X 48,297 CF = 194,496 CF

WET STORAGE VOLUME PROVIDED = 206,492 CF @ ELEVATION 65.00

POLLUTANT LOAD SUMMARY:

APPLICABLE AREA = 18.78 AC.

PRE-DEVELOPMENT IMPERVIOUS = 78.8%
POST-DEVELOPMENT IMPERVIOUS = 78.3%

PRE-DEVELOPMENT PHOSPHORUS LOAD (Lpre) = 17.30 LBS/YEAR
= [0.05 + (0.009 * I)] * A * 2.28 = 32.51 LBS/YEAR
A = 18.78 AC. APPLICABLE AREA
I = 78.8% PRE-DEVELOPMENT IMPERVIOUS
-76% OF AREA DRAINS TO EX. POND @ 30% EFF.
32.51 * 0.76 * (1-0.30) = 17.30 LBS/YEAR

POST-DEVELOPMENT PHOSPHORUS LOAD (Lpost) = 32.30 LBS/YEAR
= [0.05 + (0.009 * I)] * A * 2.28 = 32.30 LBS/YEAR
A = 18.78 AC. APPLICABLE AREA
I = 78.3% POST-DEVELOPMENT IMPERVIOUS

REQUIRED POLLUTANT REMOVAL = 16.70 LBS/YEAR
= POST-DEV. LOAD - (0.9 * PRE-DEV. LOAD)
= 32.30 - (0.9 * 17.30) = 16.70 LBS/YEAR

REQUIRED POLLUTANT REMOVAL EFFICIENCY = 51.8%
- MODIFIED A-1 WET POND WILL BE ADEQUATE WITH 50% EFFICIENCY

POLLUTANT LOAD ENTERING BMP = 61.9 LBS/YEAR
= [0.05 + (0.009 * I)] * A * 2.28 = 61.9 LBS/YEAR
A = 60.60 AC. DRAINAGE AREA TO BMP
I = 44.2% IMPERVIOUS COVER TO BMP

POLLUTANT REMOVED = 30.90 LBS/YEAR
= BMP EFFICIENCY * POLLUTANT LOAD ENTERING BMP
= 0.5 * 61.9 LBS/YEAR = 30.9 LBS/YEAR

30.9 LBS/YEAR > 16.70 LBS/YEAR; BMP IS ADEQUATE

STORMWATER MANAGEMENT NARRATIVE:

DESCRIPTION
THIS PLAN PROPOSES THE CONSTRUCTION OF AN A-1 WET POND (MODIFIED TO ELIMINATE BENCHES) WITH A 50% REMOVAL EFFICIENCY DESIGNED TO MEET THE REQUIREMENTS OF THE CHESAPEAKE BAY PROTECTION ACT REQUIRING A 10% REDUCTION IN POLLUTANT LOAD LEAVING THE SITE AFTER REDEVELOPMENT. THE WORK IS TO BE PERFORMED IN ACCORDANCE WITH PROFFER CONDITION 7(b) OF THE APPROVED PROFFERS DATED MARCH 19, 2007.

LOCATION
THE LOCATION OF THIS FACILITY IS A REPLACEMENT OF AN EXISTING FARM POND LOCATED WITHIN THE SKIMINO CREEK WATERSHED ON LAND OWNED BY THE WILLIAMSBURG POTTERY FACTORY, INC. NORTHEAST OF THE CSX RAILROAD.

SOIL CHARACTERISTICS
SEE ENVIRONMENTAL INVENTORY SHEET 3.

RECEIVING WATER
THE EXISTING FARM POND AND THE PROPOSED WET POND BMP RECEIVE WATERS FROM THE ADJACENT UPLAND RETAIL AND PARKING AREAS OF THE SITE. AS A RESULT OF THIS REDEVELOPMENT APPROXIMATELY 3.6 ACRES OF THE YARMOUTH CREEK WATERSHED WILL BE REDIRECTED TO THE PROPOSED BMP, LESSENING THE IMPACTS TO YARMOUTH CREEK AND INCREASING THE POLLUTANT REMOVAL BENEFIT OF THIS REDEVELOPMENT.

EXISTING SITE CONDITIONS
THE EXISTING SITE IS A FULLY DEVELOPED RETAIL SHOPPING CENTER WITH EXISTING FARM POND LOCATED IN THE WOODS BELOW THE CSX RAILROAD RUNNING THROUGH THE WILLIAMSBURG POTTERY LANDS. THE EXISTING SUBJECT PARCEL IS 78.8% IMPERVIOUS WITH MILD TO MODERATE SLOPES GENERALLY FROM THE RICHMOND ROAD RIGHT OF WAY TOWARDS THE CSX RAILROAD. STORMWATER IS CONVEYED UNDER THE RAILROAD VIA A 36" CMP PIPE AND A 36"WX24"H CONCRETE CHANNEL RUNNING BENEATH THE POTTERY'S PEDESTRIAN TUNNEL.

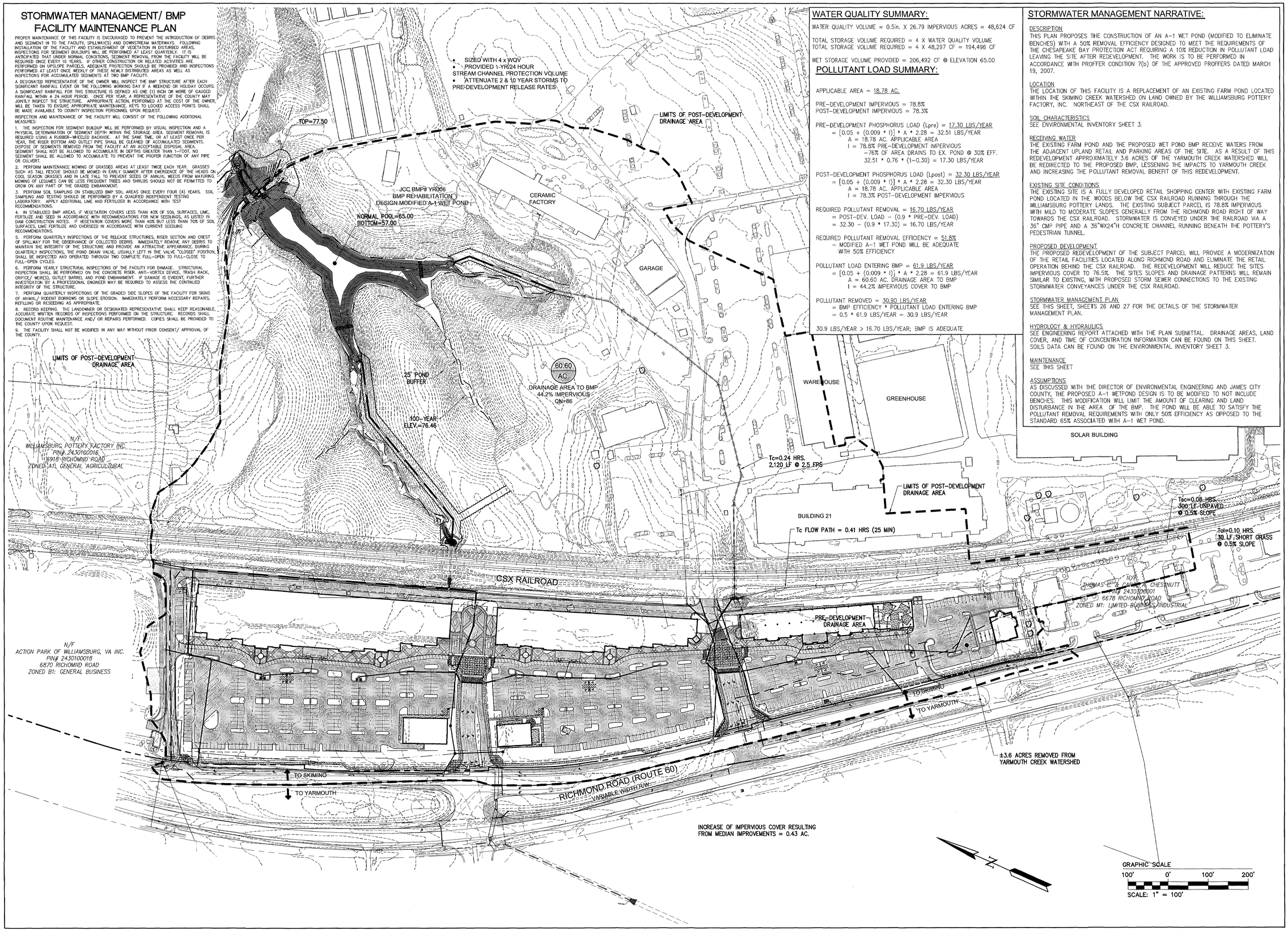
PROPOSED DEVELOPMENT
THE PROPOSED REDEVELOPMENT OF THE SUBJECT PARCEL WILL PROVIDE A MODERNIZATION OF THE RETAIL FACILITIES LOCATED ALONG RICHMOND ROAD AND ELIMINATE THE RETAIL OPERATION BEHIND THE CSX RAILROAD. THE REDEVELOPMENT WILL REDUCE THE SITES IMPERVIOUS COVER TO 76.3%. THE SITES SLOPES AND DRAINAGE PATTERNS WILL REMAIN SIMILAR TO EXISTING, WITH PROPOSED STORM SEWER CONNECTIONS TO THE EXISTING STORMWATER CONVEYANCES UNDER THE CSX RAILROAD.

STORMWATER MANAGEMENT PLAN
SEE THIS SHEET, SHEETS 26 AND 27 FOR THE DETAILS OF THE STORMWATER MANAGEMENT PLAN.

HYDROLOGY & HYDRAULICS
SEE ENGINEERING REPORT ATTACHED WITH THE PLAN SUBMITTAL. DRAINAGE AREAS, LAND COVER, AND TIME OF CONCENTRATION INFORMATION CAN BE FOUND ON THIS SHEET. SOILS DATA CAN BE FOUND ON THE ENVIRONMENTAL INVENTORY SHEET 3.

MAINTENANCE
SEE THIS SHEET

ASSUMPTIONS
AS DISCUSSED WITH THE DIRECTOR OF ENVIRONMENTAL ENGINEERING AND JAMES CITY COUNTY, THE PROPOSED A-1 WETPOND DESIGN IS TO BE MODIFIED TO NOT INCLUDE BENCHES. THIS MODIFICATION WILL LIMIT THE AMOUNT OF CLEARING AND LAND DISTURBANCE IN THE AREA OF THE BMP. THE POND WILL BE ABLE TO SATISFY THE POLLUTANT REMOVAL REQUIREMENTS WITH ONLY 50% EFFICIENCY AS OPPOSED TO THE STANDARD 65% ASSOCIATED WITH A-1 WET POND.



Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/27/11	Hankamp Detail Revision Per Client	GRR
7	9/9/11	Revised RW Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

COMMONWEALTH OF VIRGINIA
MATTHEW J. REMBOLD
Lic. No. 045773
7/25/12
PROFESSIONAL ENGINEER

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Hampton Roads | Central Virginia | Middle Peninsula

Williamsburg Pottery
Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
BMP Drainage Map

Sheet Number
25

STORMWATER MANAGEMENT/ BMP FACILITY MAINTENANCE PLAN

PROPER MAINTENANCE OF THIS FACILITY IS ENCOURAGED TO PREVENT THE INTRODUCTION OF DEBRIS AND SEDIMENT INTO THE FACILITY, SPILLWAY(S) AND DOWNSTREAM WATERWAYS. FOLLOWING INSTALLATION OF THE FACILITY AND ESTABLISHMENT OF VEGETATION IN DISTURBED AREAS, INSPECTIONS FOR SEDIMENT BUILDUPS WILL BE PERFORMED AT LEAST QUARTERLY. IT IS ANTICIPATED THAT UNDER NORMAL CONDITIONS, SEDIMENT REMOVAL FROM THE FACILITY WILL BE REQUIRED ONCE EVERY 10 YEARS. IF OTHER CONSTRUCTION OR RELATED ACTIVITIES ARE PERFORMED ON UPSLOPE PARCELS, ADEQUATE PROTECTION SHOULD BE PROVIDED AND INSPECTIONS PERFORMED AT LEAST ONCE WEEKLY OF THESE NEWLY DISTRIBUTED AREAS AS WELL AS INSPECTIONS FOR ACCUMULATED SEDIMENTS AT TWO BMP FACILITY.

A DESIGNATED REPRESENTATIVE OF THE OWNER WILL INSPECT THE BMP STRUCTURE AFTER EACH SIGNIFICANT RAINFALL EVENT OR THE FOLLOWING WORKING DAY IF A WEEKEND OR HOLIDAY OCCURS. A SIGNIFICANT RAINFALL FOR THIS STRUCTURE IS DEFINED AS ONE (1) INCH OR MORE OF GAUGED RAINFALL WITHIN A 24 HOUR PERIOD. ONCE PER YEAR, A REPRESENTATIVE OF THE COUNTY MAY JOINTLY INSPECT THE STRUCTURE. APPROPRIATE ACTION, PERFORMED AT THE COST OF THE OWNER, WILL BE TAKEN TO ENSURE APPROPRIATE MAINTENANCE. KEYS TO LOCKED ACCESS POINTS SHALL BE MADE AVAILABLE TO COUNTY INSPECTION PERSONNEL UPON REQUEST.

INSPECTION AND MAINTENANCE OF THE FACILITY WILL CONSIST OF THE FOLLOWING ADDITIONAL MEASURES:

1. THE INSPECTION FOR SEDIMENT BUILDUP WILL BE PERFORMED BY VISUAL INSPECTION AND A PHYSICAL DETERMINATION OF SEDIMENT DEPTH WITHIN THE STORAGE AREA. SEDIMENT REMOVAL IS REQUIRED USING A RUBBER-WHEELED BACKHOE. AT THE SAME TIME, OR AT LEAST ONCE PER YEAR, THE RISER BOTTOM AND OUTLET PIPE SHALL BE CLEANED OF ACCUMULATED SEDIMENTS. DISPOSE OF SEDIMENTS REMOVED FROM THE FACILITY AT AN ACCEPTABLE DISPOSAL AREA. SEDIMENT SHALL NOT BE ALLOWED TO ACCUMULATE IN DEPTHS GREATER THAN 1-FOOT. NO SEDIMENT SHALL BE ALLOWED TO ACCUMULATE TO PREVENT THE PROPER FUNCTION OF ANY PIPE OR CULVERT.

2. PERFORM MAINTENANCE MOWING OF GRASSED AREAS AT LEAST TWICE EACH YEAR. GRASSES SUCH AS TALL FESCUE SHOULD BE MOWED IN EARLY SUMMER AFTER EMERGENCE OF THE HEADS ON COOL SEASON GRASSES AND IN LATE FALL TO PREVENT SEEDS OF ANNUAL WEEDS FROM MATURING. MOWING OF LEGUMES CAN BE LESS FREQUENT TREES AND SHRUBS SHOULD NOT BE PERMITTED TO GROW ON ANY PART OF THE GRADED EMBANKMENT.

3. PERFORM SOIL SAMPLING ON STABILIZED BMP SOIL AREAS ONCE EVERY FOUR (4) YEARS. SOIL SAMPLING AND TESTING SHOULD BE PERFORMED BY A QUALIFIED INDEPENDENT TESTING LABORATORY. APPLY ADDITIONAL LIME AND FERTILIZER IN ACCORDANCE WITH TEST RECOMMENDATIONS.

4. IN STABILIZED BMP AREAS, IF VEGETATION COVERS LESS THAN 40% OF SOIL SURFACES, LIME, FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDLINGS, AS LISTED IN DAM CONSTRUCTION NOTES. IF VEGETATION COVERS MORE THAN 40% BUT LESS THAN 70% OF SOIL SURFACES, LIME FERTILIZE AND OVERSEED IN ACCORDANCE WITH CURRENT SEEDLING RECOMMENDATIONS.

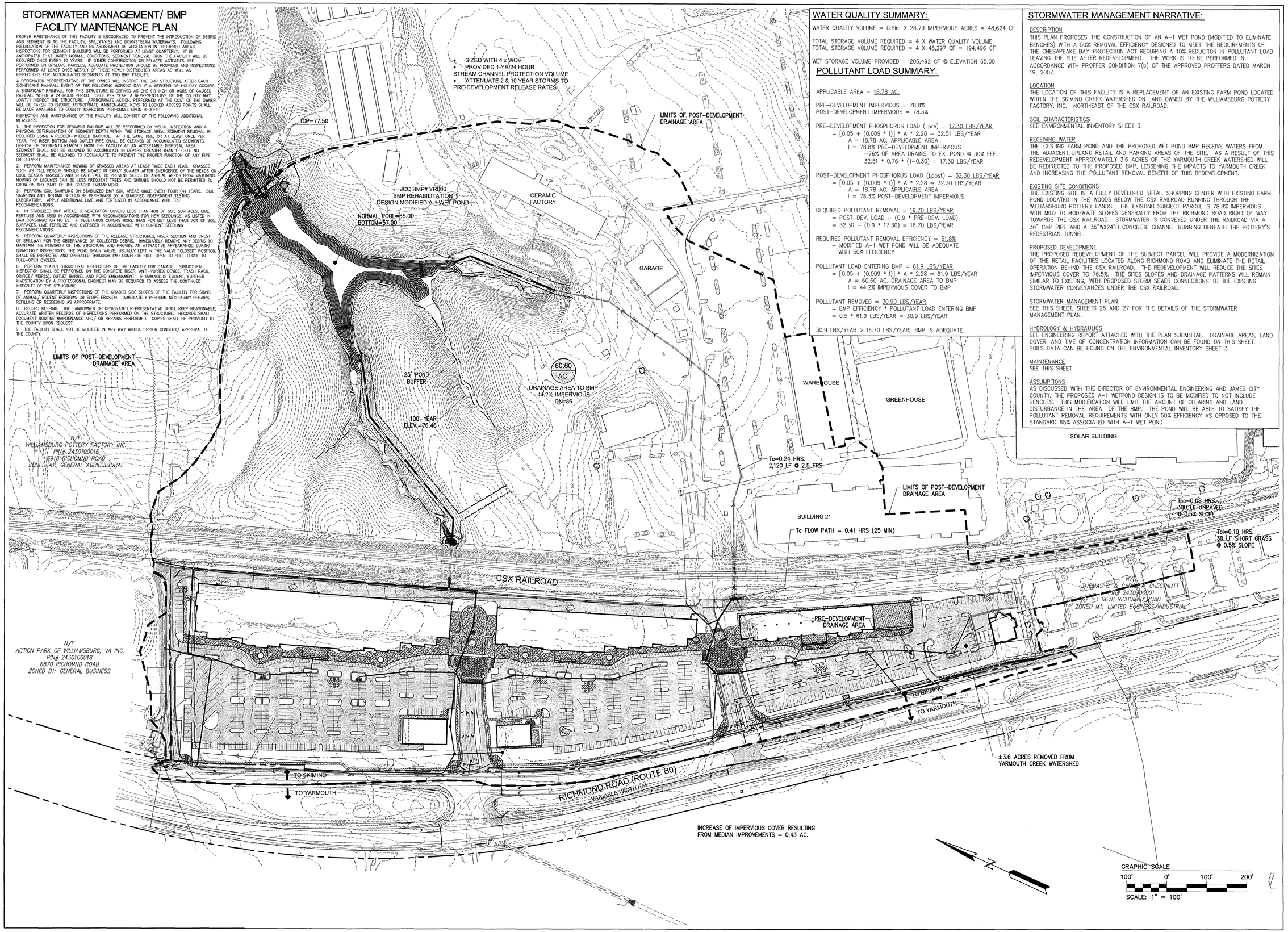
5. PERFORM QUARTERLY INSPECTIONS OF THE RELEASE STRUCTURES, RISER SECTION AND CREST OF SPILLWAY FOR THE OBSERVANCE OF COLLECTED DEBRIS. IMMEDIATELY REMOVE ANY DEBRIS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE. DURING QUARTERLY INSPECTIONS, THE POND DRAIN VALVE, USUALLY LEFT IN THE VALVE "CLOSED" POSITION, SHALL BE INSPECTED AND OPERATED THROUGH TWO COMPLETE FULL-OPEN TO FULL-CLOSE TO FULL-OPEN CYCLES.

6. PERFORM YEARLY STRUCTURAL INSPECTIONS OF THE FACILITY FOR DAMAGE. STRUCTURAL INSPECTION SHALL BE PERFORMED ON THE CONCRETE RISER, ANTI-VORTEX DEVICE, TRASH RACK, ORIFICE/ WEIR(S), OUTLET BARREL AND POND EMBANKMENT. IF DAMAGE IS EVIDENT, FURTHER INVESTIGATION BY A PROFESSIONAL ENGINEER MAY BE REQUIRED TO ASSESS THE CONTINUED INTEGRITY OF THE STRUCTURE.

7. PERFORM QUARTERLY INSPECTIONS OF THE GRADED SIDE SLOPES OF THE FACILITY FOR SIGNS OF ANIMAL/ RODENT BORROWS OR SLOPE EROSION. IMMEDIATELY PERFORM NECESSARY REPAIRS, REFILLING OR RESEEDING AS APPROPRIATE.

8. RECORD KEEPING. THE LANDOWNER OR DESIGNATED REPRESENTATIVE SHALL KEEP REASONABLE, ACCURATE WRITTEN RECORDS OF INSPECTIONS PERFORMED ON THE STRUCTURE. RECORDS SHALL DOCUMENT ROUTINE MAINTENANCE AND/ OR REPAIRS PERFORMED. COPIES SHALL BE PROVIDED TO THE COUNTY UPON REQUEST.

9. THE FACILITY SHALL NOT BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT/ APPROVAL OF THE COUNTY.



WATER QUALITY SUMMARY:

WATER QUALITY VOLUME = 0.5in. X 26.79 IMPERVIOUS ACRES = 48,624 CF

TOTAL STORAGE VOLUME REQUIRED = 4 X WATER QUALITY VOLUME
TOTAL STORAGE VOLUME REQUIRED = 4 X 48,297 CF = 194,496 CF

WET STORAGE VOLUME PROVIDED = 206,492 CF @ ELEVATION 65.00

POLLUTANT LOAD SUMMARY:

APPLICABLE AREA = 18.78 AC.

PRE-DEVELOPMENT IMPERVIOUS = 78.8%
POST-DEVELOPMENT IMPERVIOUS = 78.3%

PRE-DEVELOPMENT PHOSPHORUS LOAD (Lpre) = 17.30 LBS/YEAR
= [0.05 + (0.009 * I)] * A * 2.28 = 32.51 LBS/YEAR
A = 18.78 AC. APPLICABLE AREA
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-76% OF AREA DRAINS TO EX. POND @ 30% EFF.
32.51 * 0.76 * (1-0.30) = 17.30 LBS/YEAR

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REQUIRED POLLUTANT REMOVAL = 16.70 LBS/YEAR
= POST-DEV. LOAD - (0.9 * PRE-DEV. LOAD)
= 32.30 - (0.9 * 17.30) = 16.70 LBS/YEAR

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Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
3	12/25/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

COMMONWEALTH OF VIRGINIA
MATTHEW J. REMBOLD
Lic. No. 045773
5/27/11
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Hampton Roads | Central Virginia | Middle Peninsula

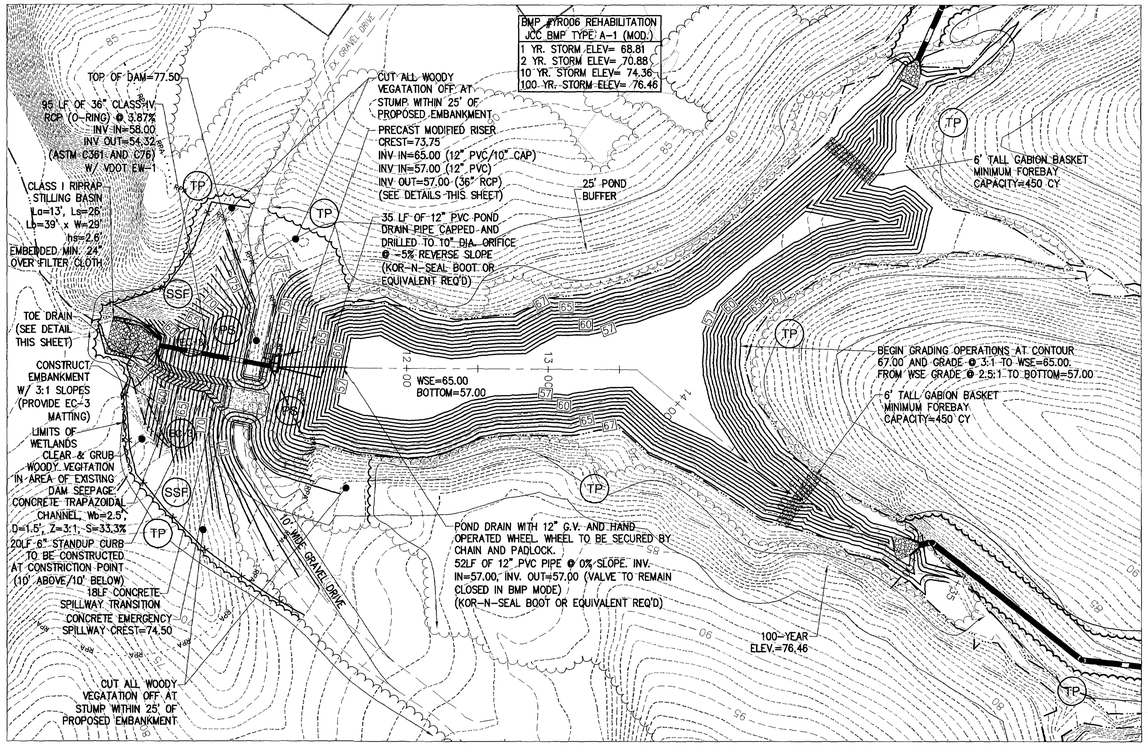
Williamsburg Pottery

Stonehouse District | James City County | Virginia

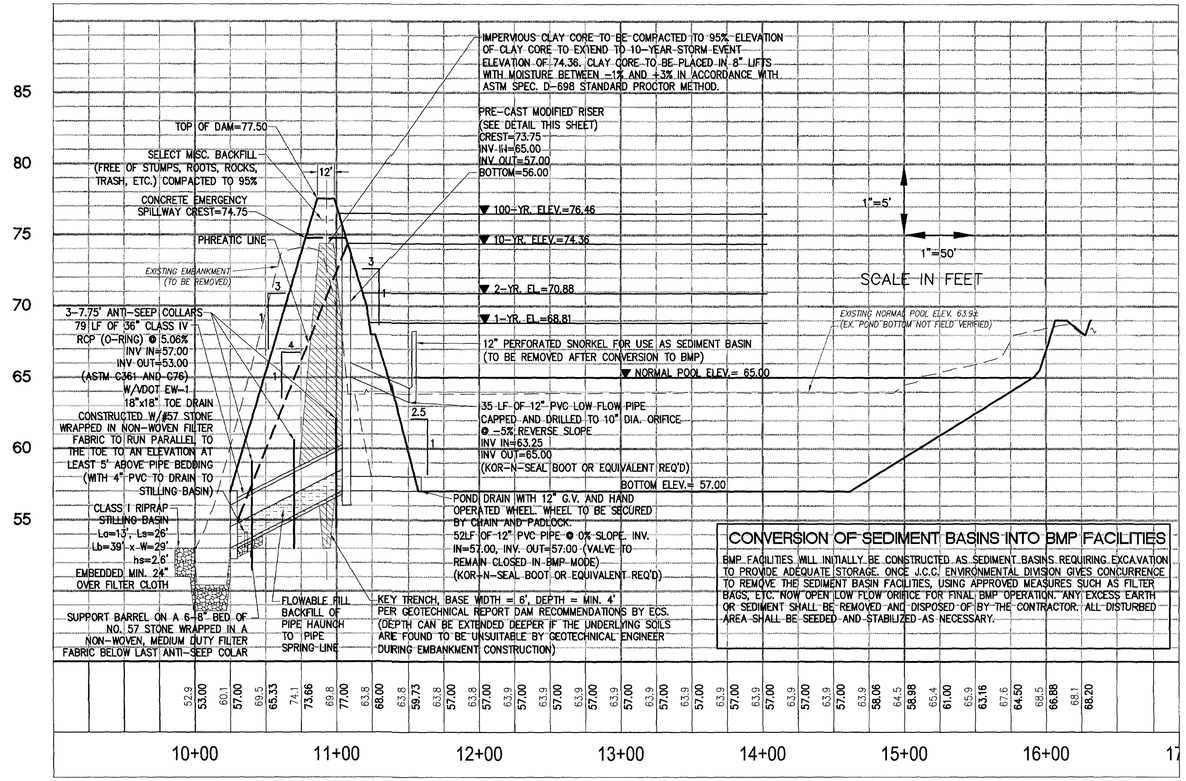
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
BMP Drainage Map

Sheet Number
25



BMP PLAN VIEW (COUNTY BMP #YR006)



BMP PROFILE VIEW (COUNTY BMP #YR006)

CONVERSION OF SEDIMENT BASINS INTO BMP FACILITIES

BMP FACILITIES WILL INITIALLY BE CONSTRUCTED AS SEDIMENT BASINS REQUIRING EXCAVATION TO PROVIDE ADEQUATE STORAGE. ONCE J.C.C. ENVIRONMENTAL DIVISION GIVES CONCURRENCE TO REMOVE THE SEDIMENT BASIN FACILITIES, USING APPROVED MEASURES SUCH AS FILTER BAGS, ETC. NOW OPEN LOW FLOW ORIFICE FOR FINAL BMP OPERATION. ANY EXCESS EARTH OR SEDIMENT SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. ALL DISTURBED AREA SHALL BE SEEDED AND STABILIZED AS NECESSARY.

GENERAL NOTES FOR CONSTRUCTION OF STORMWATER BASINS

1. THE CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS NEEDED TO CONSTRUCT THE STORMWATER BASIN, STORMWATER MANAGEMENT PONDS, BEST MANAGEMENT PRACTICES, SEDIMENT BASINS AND SEDIMENT TRAPS. THE WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETION OF GRADING AND EARTHWORK ASSOCIATED WITH THE CONSTRUCTION.

2. THE CONTRACTOR SHALL CONSULT AND PROVIDE FOR THE SERVICES OF A GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL PROVIDE TEST RESULTS ON PLACED DAM MATERIALS, IDENTIFYING SOIL CLASSIFICATION, PERMEABILITY, PLASTICITY INDEX, AND COMPACTION. ALL TESTS SHALL BE IN CONFORMANCE WITH ASTM STANDARDS. THE COST OF THE SERVICES OF THE GEOTECHNICAL ENGINEER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SATISFACTORY GEOTECHNICAL RESULTS ARE NEEDED PRIOR TO FINAL APPROVAL.

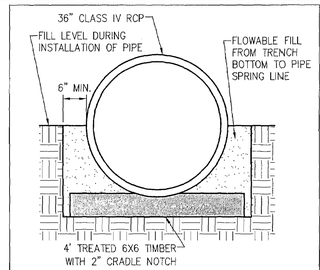
3. ALL INSPECTIONS REQUIRED FOR THE WORK SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEER AT THE EXPENSE OF THE GENERAL CONTRACTOR.

4. ON-SITE EXCAVATED MATERIAL, IF DETERMINED SUITABLE FOR USE IN DAM CONSTRUCTION BY A GEOTECHNICAL ENGINEER, MAY BE USED FOR DAM CONSTRUCTION. SHOULD ADDITIONAL MATERIAL BE REQUIRED, THE CONTRACTOR SHALL IDENTIFY THE NEED FOR MATERIAL TO THE OWNER, AS ADDITIONAL BORROW MATERIAL MAY BE AVAILABLE ON THE PROPERTY. ALL EXCAVATED MATERIAL DETERMINED BY THE GEOTECHNICAL ENGINEER TO BE UNSUITABLE SHALL BE DISPOSED OF PROPERLY AT THE CONTRACTOR'S EXPENSE. ALL EXCAVATED MATERIAL NOT REQUIRED FOR BACKFILLING SHALL EITHER BE DEPOSITED ON SITE AND SPREAD BY THE CONTRACTOR, OR SHALL BE DEPOSITED IN AN AREA ON THE PROPERTY AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE PROPER STABILIZATION, AND EROSION AND SEDIMENT CONTROL MEASURES NEEDED TO CONTROL AS PER THE VESCH THIRD EDITION.

5. UNDERCUT FOR THE FOUNDATION OF THE DAM EMBANKMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. THE FOUNDATION SHALL BE BACKFILLED WITH SOILS CLASSIFIED AS SM, SC, OR CL UNDER THE UNIFIED SOIL CLASSIFICATION SYSTEM. SOILS SHALL HAVE A MINIMUM OF 15% BY WEIGHT FINES, HAVING A PLASTICITY INDEX OF 30% AND A PERMEABILITY OF 0.0004 IN./SEC. OR LESS. FILL SHALL BE COMPACTED IN 8-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO A DRY DENSITY OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). EXCAVATION FOR THE DAM KEY SHALL BE IN ACCORDANCE TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. HEIGHT, DEPTH, AND WIDTH OF THE KEY SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. THE KEY SHALL BE FORMED USING SOILS CLASSIFIED AS CH OR CL, WITH A PERMEABILITY OF 0.0004 IN./SEC. OR LESS.

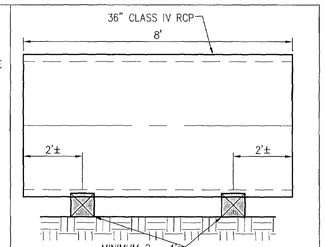
6. THE DAM CORE SHALL BE AS CONSTRUCTED WITH NON-EXPANSIVE CH OR CL CLAYEY MATERIAL WITH PERMEABILITY OF 0.0004 IN./SEC. OR LESS. THE FILL OF THE CORE SHALL BE MADE IN 8-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). SIZE, SHAPE, WIDTH, DEPTH, AND HEIGHT OF THE DAM CORE SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. TO COVER THE DAM CORE, A SILTY FINE SAND OR CLAYEY SOIL (SM, SC, OR CL) SHALL BE PLACED. A VEGETATIVE COVER USING VDOT EC-2 EROSION CONTROL BLANKETS SHALL BE PLACED ON DAM SLOPES AND CREST TO PREVENT EROSION.

7. THE STORMWATER MANAGEMENT / BMP FACILITIES SHOWN ON THESE PLANS REQUIRE THE SUBMISSION, REVIEW AND APPROVAL OF RECORD DRAWING(S) AND CONSTRUCTION CERTIFICATION PRIOR TO RELEASE OF THE POSTED BOND / SURETY. THE GEOTECHNICAL ENGINEER IS TO ENSURE THAT HIS / HER INSPECTION OF THE SWM / BMP CONSTRUCTION ACTIVITY IS PERFORMED DURING AND FOLLOWING CONSTRUCTION OF THE SWM / BMP IN ACCORDANCE WITH THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION STORMWATER MANAGEMENT / BMP FACILITIES DESIGN GUIDELINES HANDBOOK, DATED AUGUST 30, 2000.

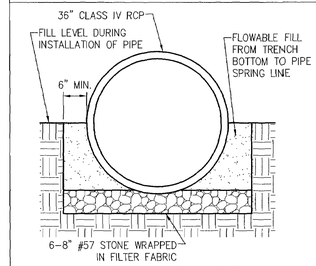


NOTE: FLOWABLE FILL TO BE POURED IN LIFTS NOT GREATER THAN 6" FROM SIDE TO SIDE TO PREVENT PIPE FROM ROLLING

TYPICAL BEDDING DETAIL
NTS

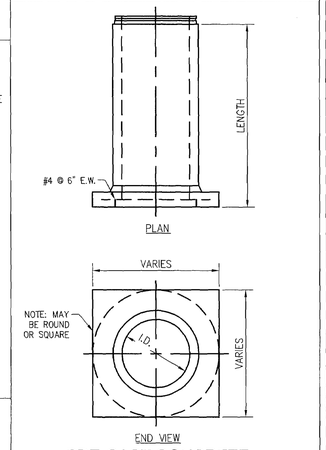


TYPICAL BEDDING SECTION
NTS

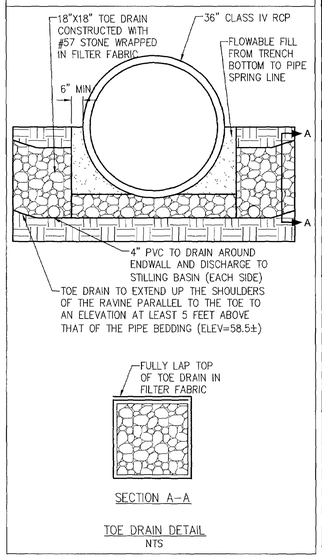


NOTE: FLOWABLE FILL TO BE POURED IN LIFTS NOT GREATER THAN 6" FROM SIDE TO SIDE TO PREVENT PIPE FROM ROLLING

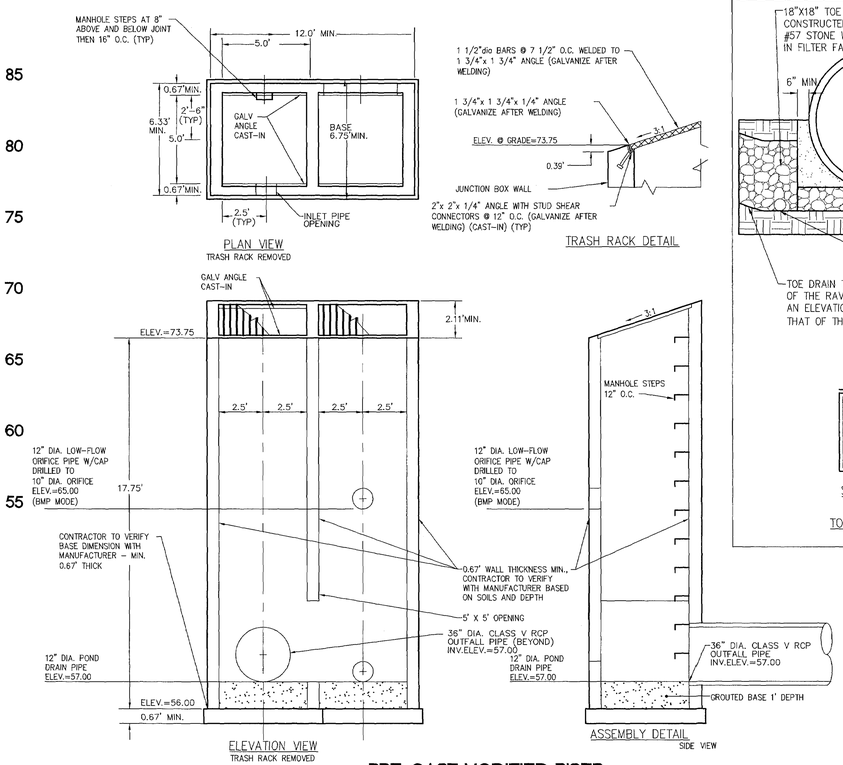
TYPICAL BEDDING DETAIL (BELOW LAST ANTI-SEEP COLLAR)
NTS



PRE-CAST CONCRETE ANTI-SEEP COLLAR
N.T.S.



TOE DRAIN DETAIL
NTS



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3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

COMMONWEALTH OF VIRGINIA
MARK J. REMOLDI
Lic. No. 045773
12/15/10
PROFESSIONAL ENGINEER

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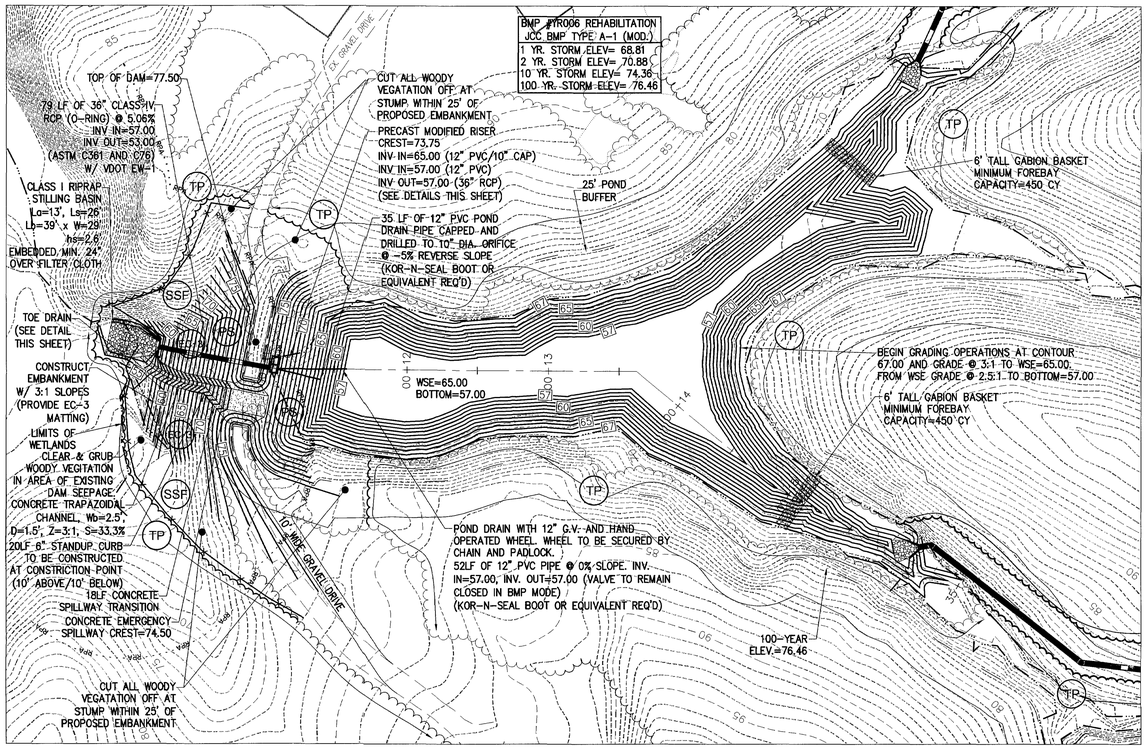
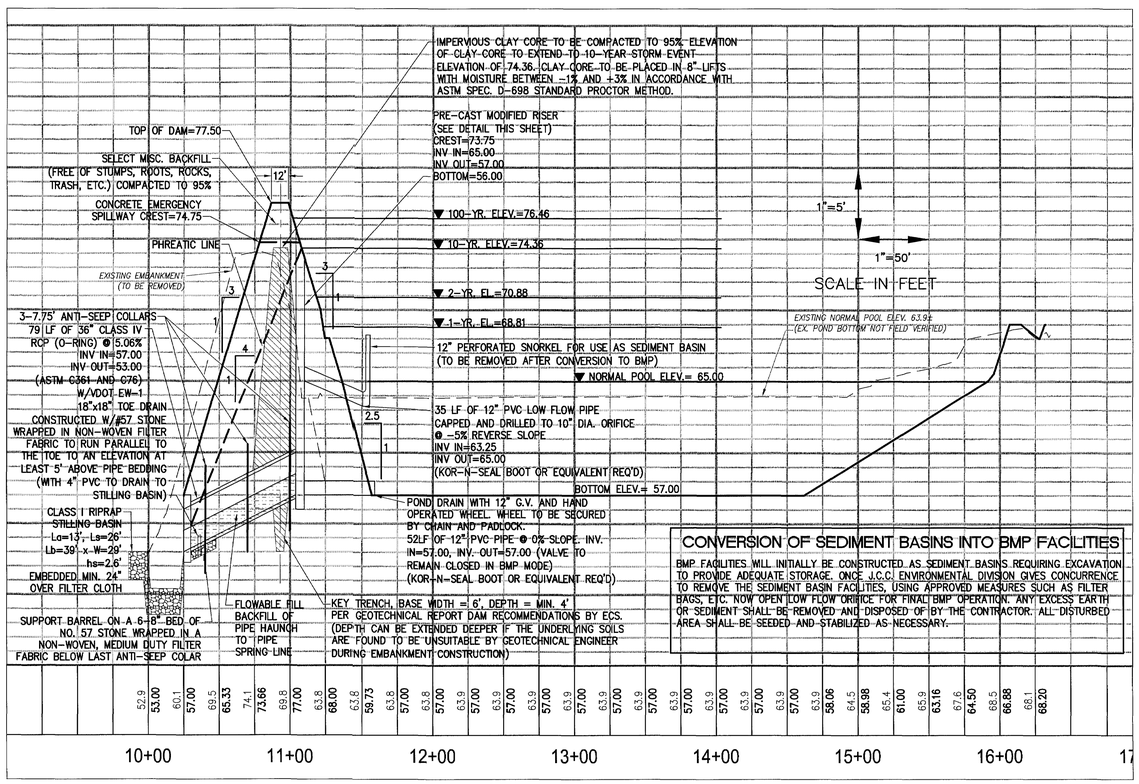
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: NOTED	Date: 9/3/2010
Sheet Title: BMP Plan & Profile	

Sheet Number
26



BMP PLAN VIEW (COUNTY BMP #YR006)



BMP PROFILE VIEW (COUNTY BMP #YR006)

CONVERSION OF SEDIMENT BASINS INTO BMP FACILITIES

BMP FACILITIES WILL INITIALLY BE CONSTRUCTED AS SEDIMENT BASINS REQUIRING EXCAVATION TO PROVIDE ADEQUATE STORAGE. ONCE J.C.C. ENVIRONMENTAL DIVISION GIVES CONCURRENCE TO REMOVE THE SEDIMENT BASIN FACILITIES, USING APPROVED MEASURES SUCH AS FILTER BAGS, ETC. NOW OPEN LOW FLOW ORIFICE FOR FINAL BMP OPERATION. ANY EXCESS EARTH OR SEDIMENT SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. ALL DISTURBED AREA SHALL BE SEEDED AND STABILIZED AS NECESSARY.

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5. UNDERCUT FOR THE FOUNDATION OF THE DAM EMBANKMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. THE FOUNDATION SHALL BE BACKFILLED WITH SOILS CLASSIFIED AS SM, SC, OR CL UNDER THE UNIFIED SOIL CLASSIFICATION SYSTEM. SOILS SHALL HAVE A MINIMUM OF 15% BY WEIGHT FINES, HAVING A PLASTICITY INDEX OF 30% AND A PERMEABILITY OF 0.0004 IN./SEC. OR LESS. FILL SHALL BE COMPACTED IN 8-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO A DRY DENSITY OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). EXCAVATION FOR THE DAM KEY SHALL BE IN ACCORDANCE TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. HEIGHT, DEPTH, AND WIDTH OF THE KEY SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. THE KEY SHALL BE FORMED USING SOILS CLASSIFIED AS CH OR CL, WITH A PERMEABILITY OF 0.0004 IN./SEC. OR LESS.

6. THE DAM CORE SHALL BE AS CONSTRUCTED WITH NON-EXPANSIVE CH OR CL CLAYEY MATERIAL WITH PERMEABILITY OF 0.0004 IN./SEC. OR LESS. THE FILL OF THE CORE SHALL BE MADE IN 8-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). SIZE, SHAPE, WIDTH, DEPTH, AND HEIGHT OF THE DAM CORE SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. TO COVER THE DAM CORE, A SILTY FINE SAND OR CLAYEY SOIL (SM, SC, OR CL) SHALL BE PLACED. A VEGETATIVE COVER USING VDOT EC-2 EROSION CONTROL BLANKETS SHALL BE PLACED ON DAM SLOPES AND CREST TO PREVENT EROSION.

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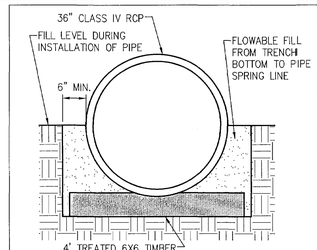
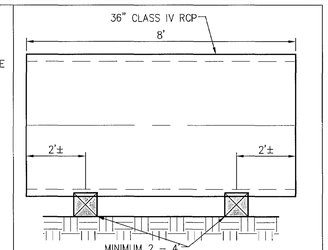


NOTE: FLOWABLE FILL TO BE POURED IN LIFTS NOT GREATER THAN 6" FROM SIDE TO SIDE TO PREVENT PIPE FROM ROLLING

TYPICAL BEDDING DETAIL
NTS



TYPICAL BEDDING SECTION
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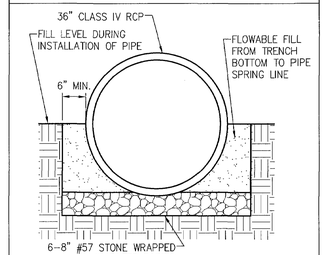

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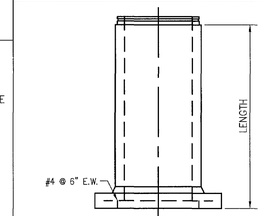
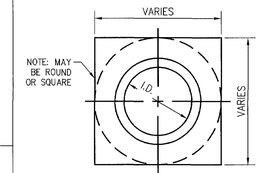
TYPICAL BEDDING DETAIL (BELOW LAST ANTI-SEEP COLLAR)
NTS



PLAN



END VIEW

PRE-CAST CONCRETE ANTI-SEEP COLLAR

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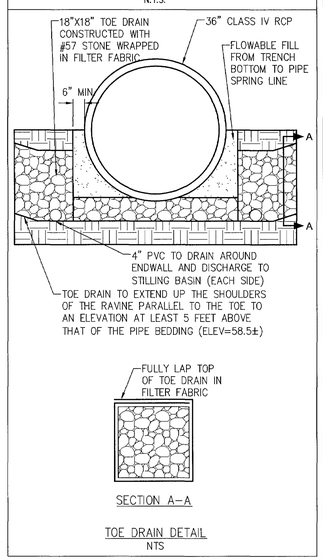

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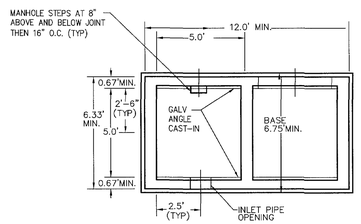
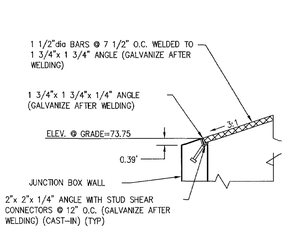


PLAN VIEW
TRASH RACK REMOVED



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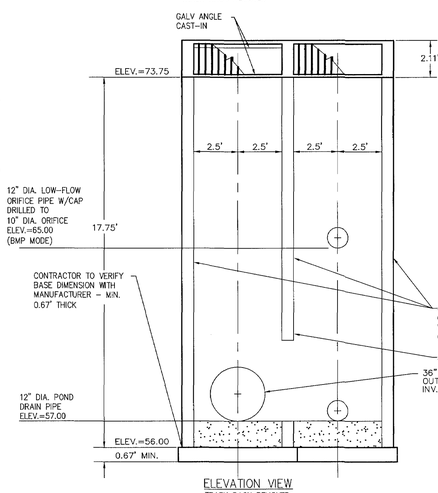
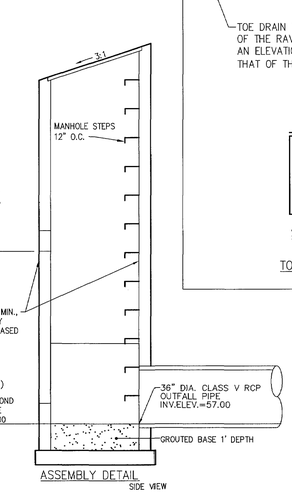


ELEVATION VIEW
TRASH RACK REMOVED



ASSEMBLY DETAIL
SIDE VIEW

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11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/27/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GERR
8	10/07/11	Hydrologic Detail Revision Per Client	GERR
7	9/9/11	Revised R/W Inspection Delays for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

STATE OF VIRGINIA
MATTHEW J. REMBOLD
Lic. No. 045773
7/25/12
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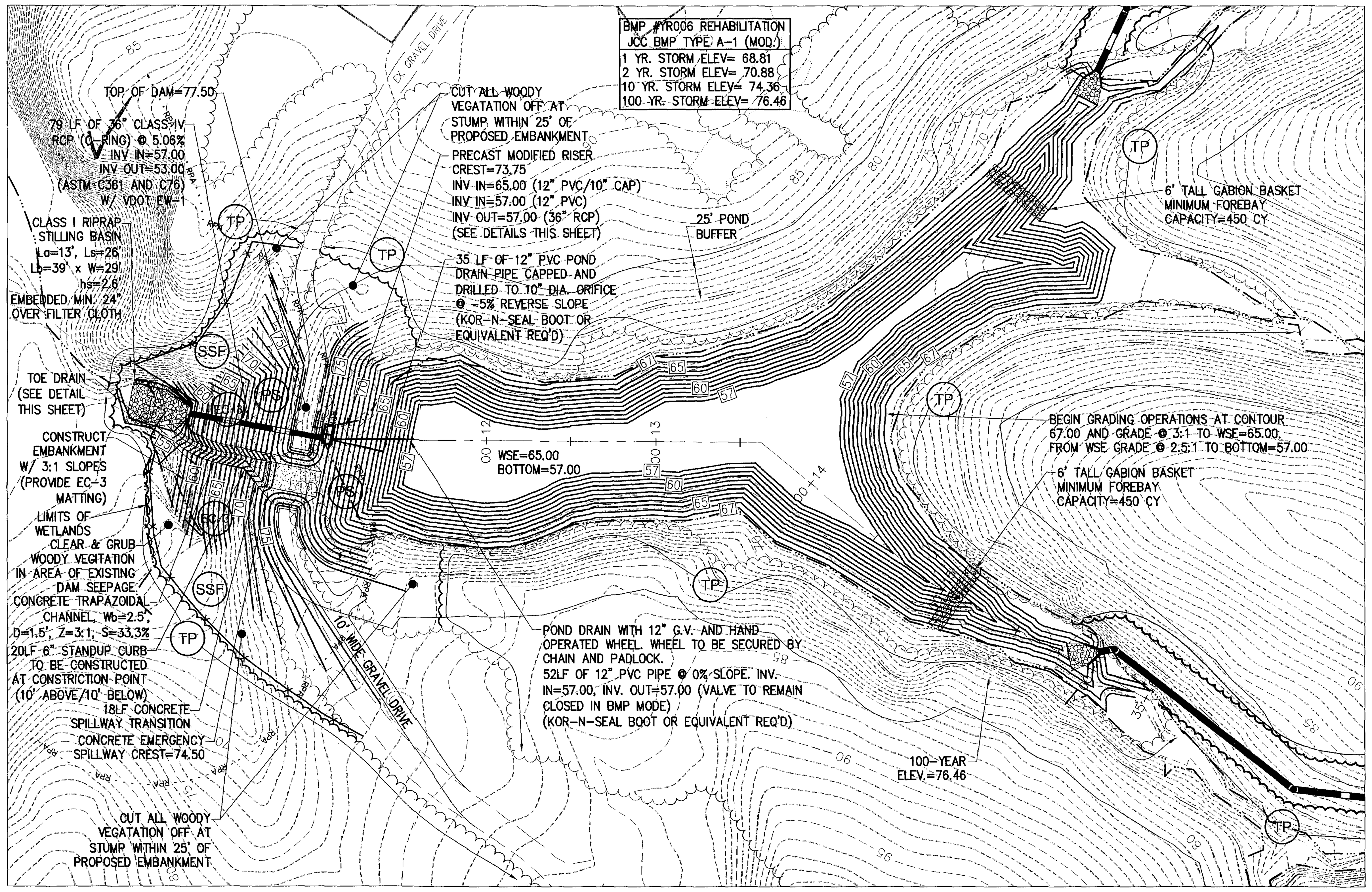

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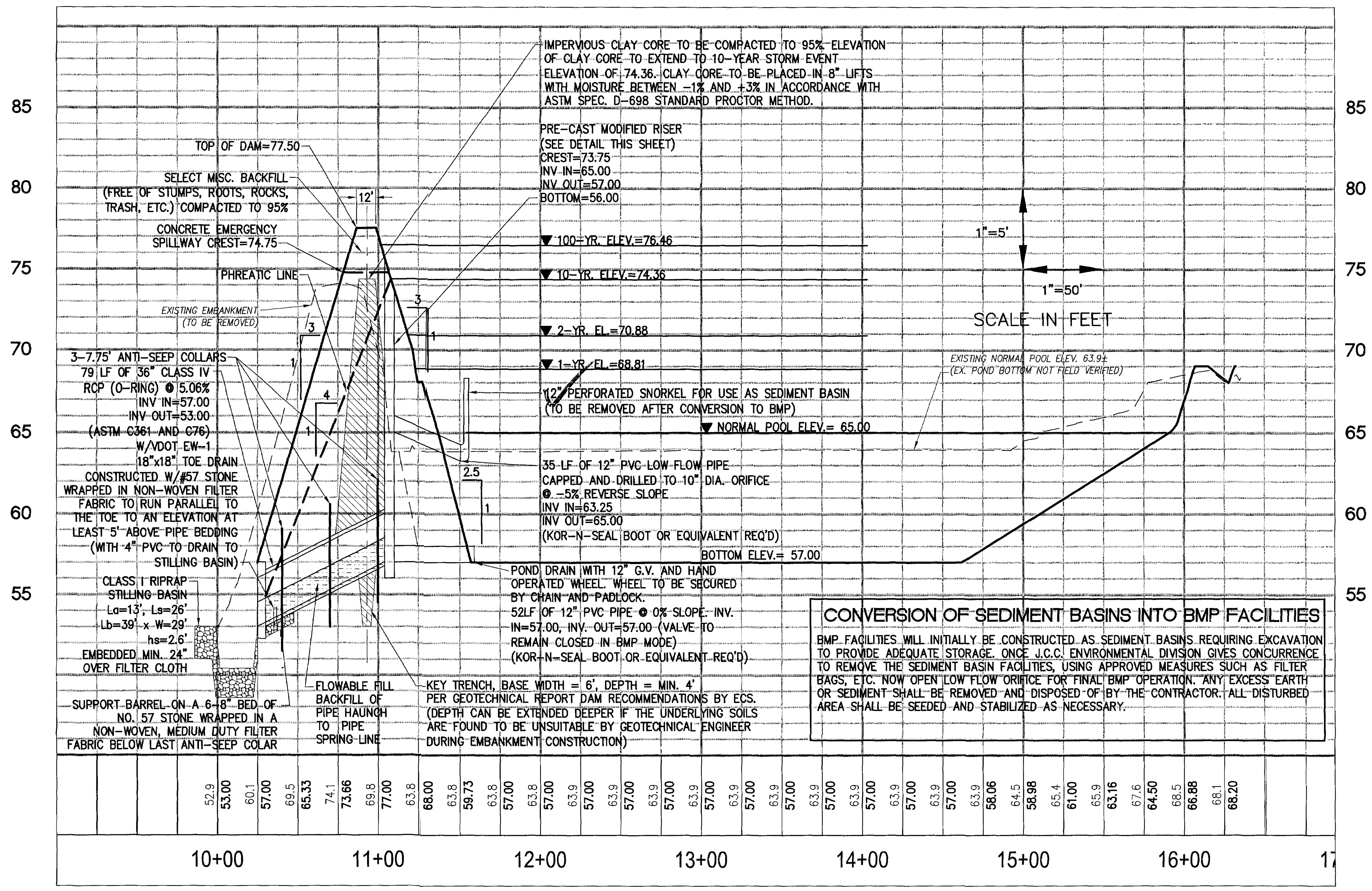

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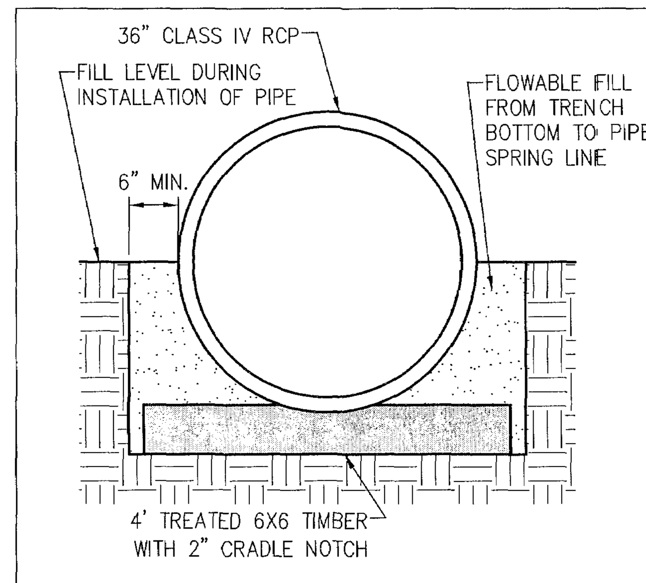

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TYPICAL BEDDING DETAIL
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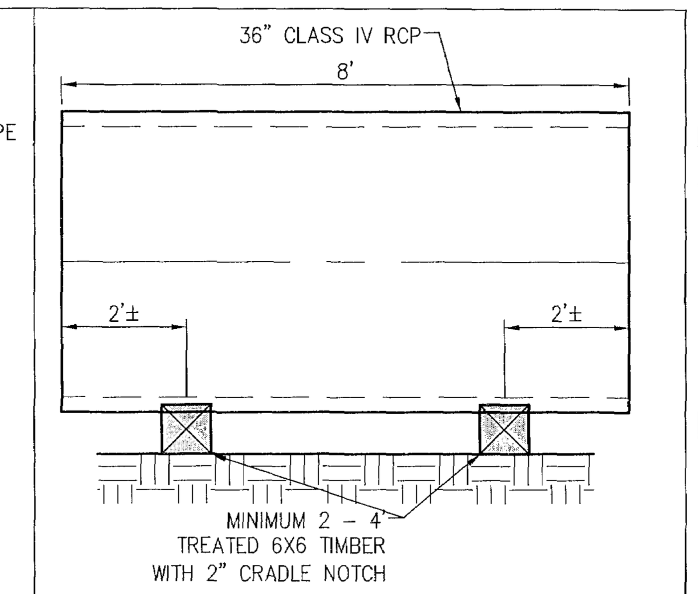

TYPICAL BEDDING SECTION
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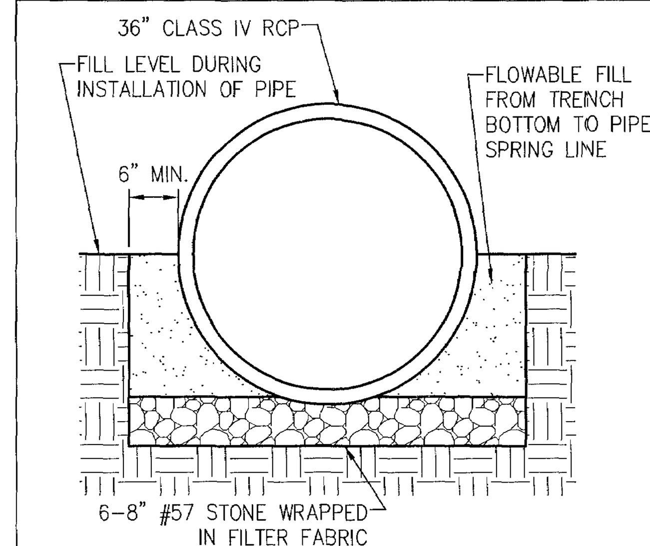

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TYPICAL BEDDING DETAIL (BELOW LAST ANTI-SEEP COLLAR)
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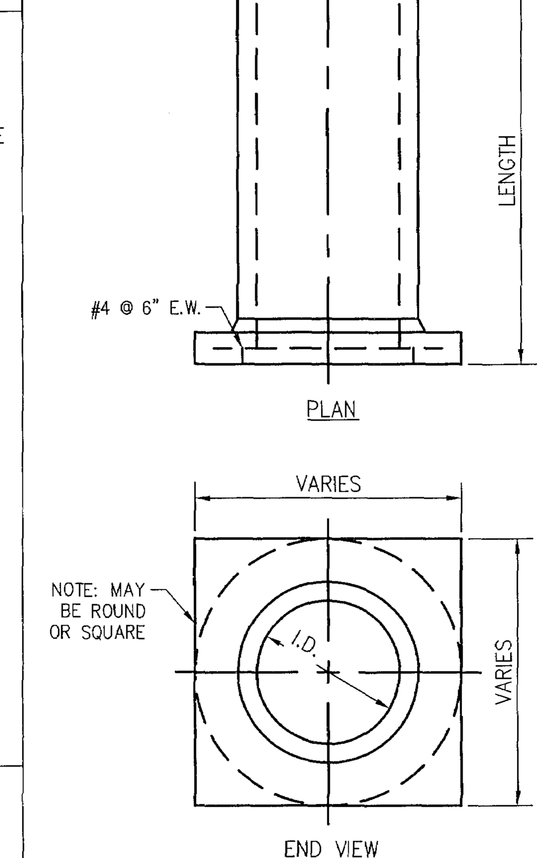

PRE-CAST CONCRETE ANTI-SEEP COLLAR
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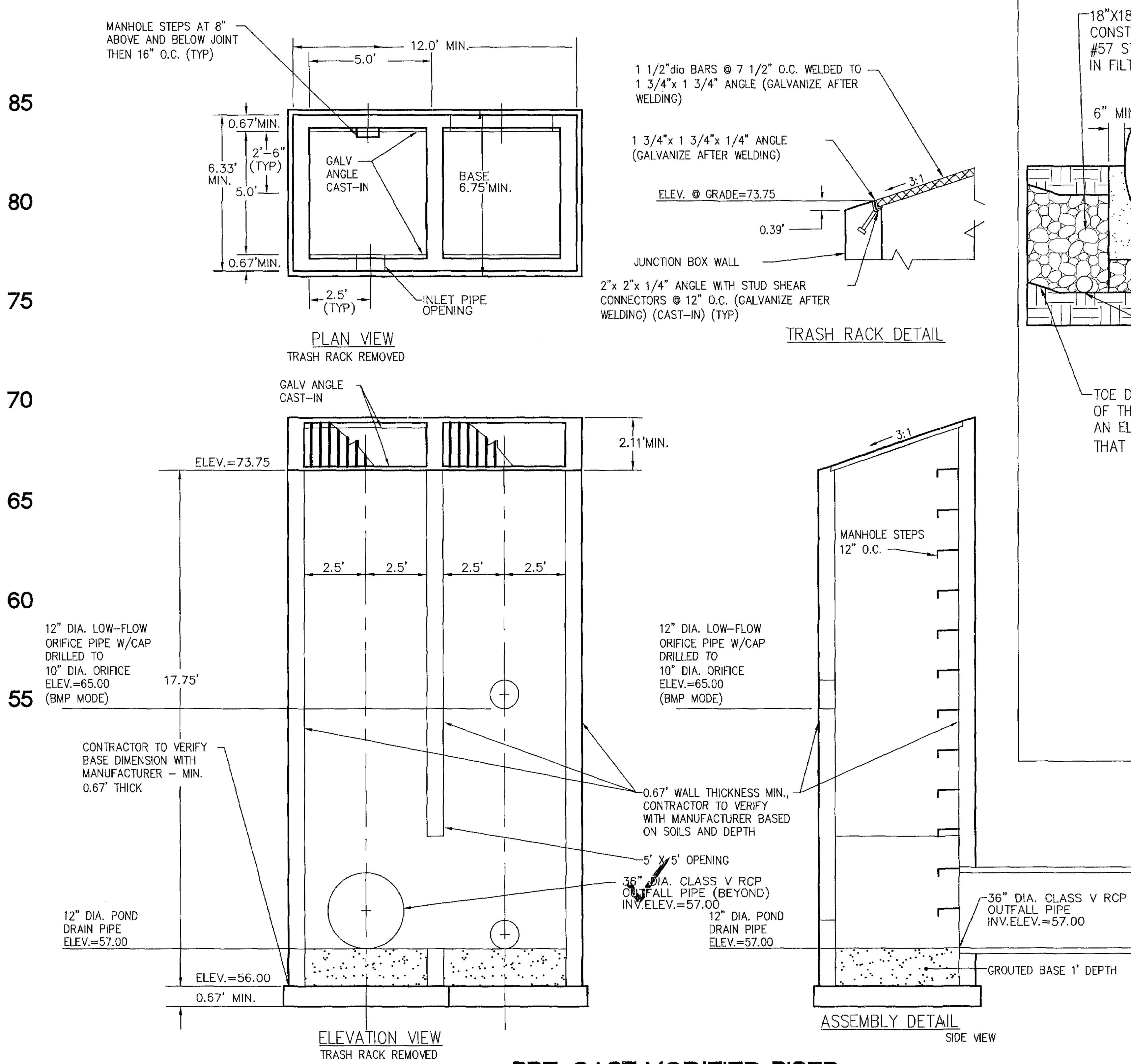

PRE-CAST MODIFIED RISER
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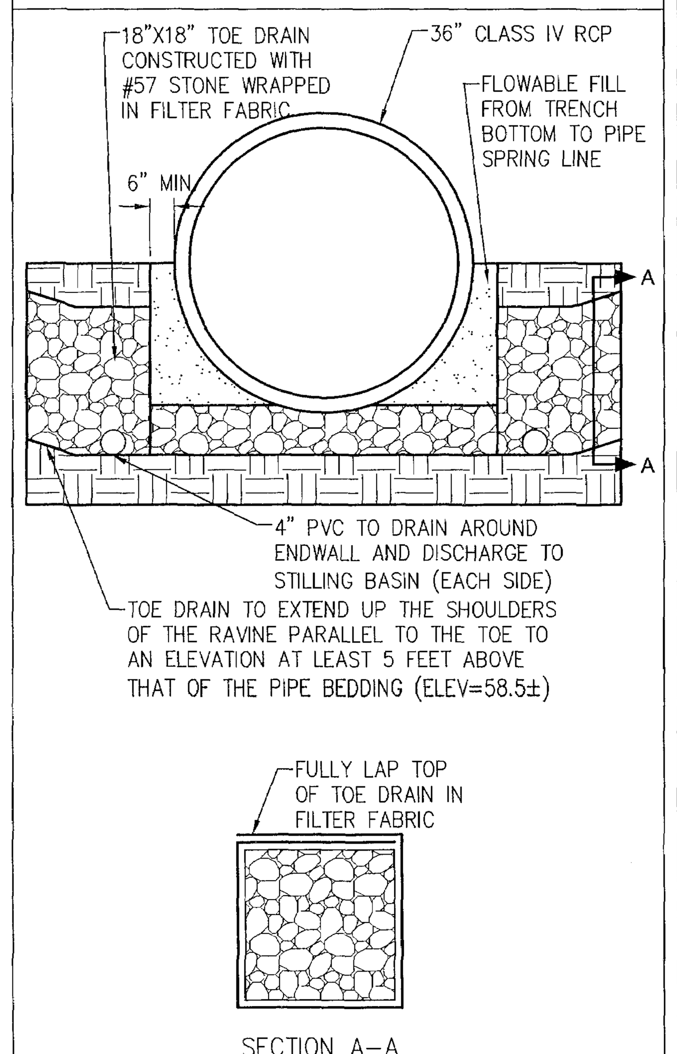

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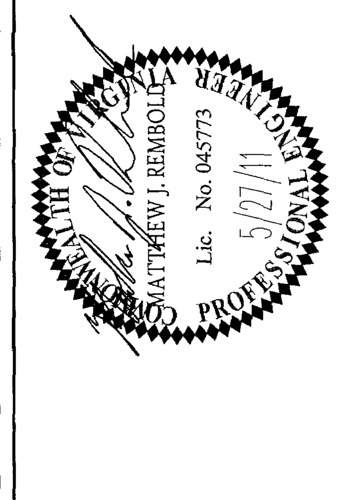
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR



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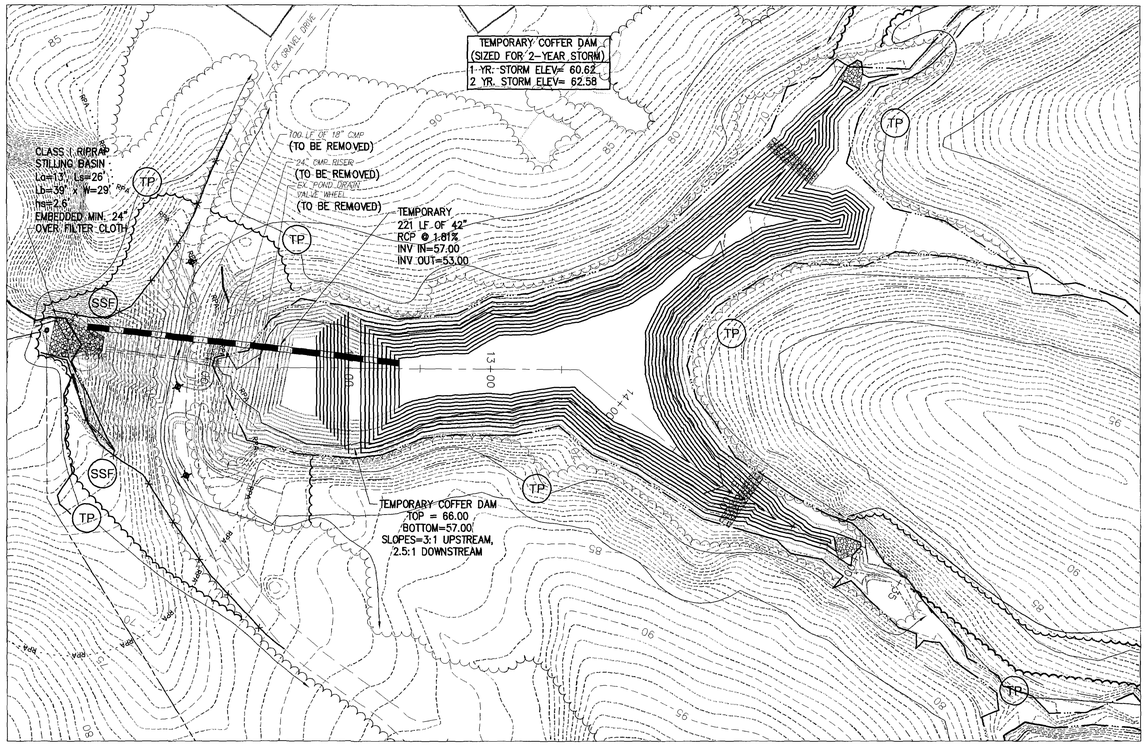
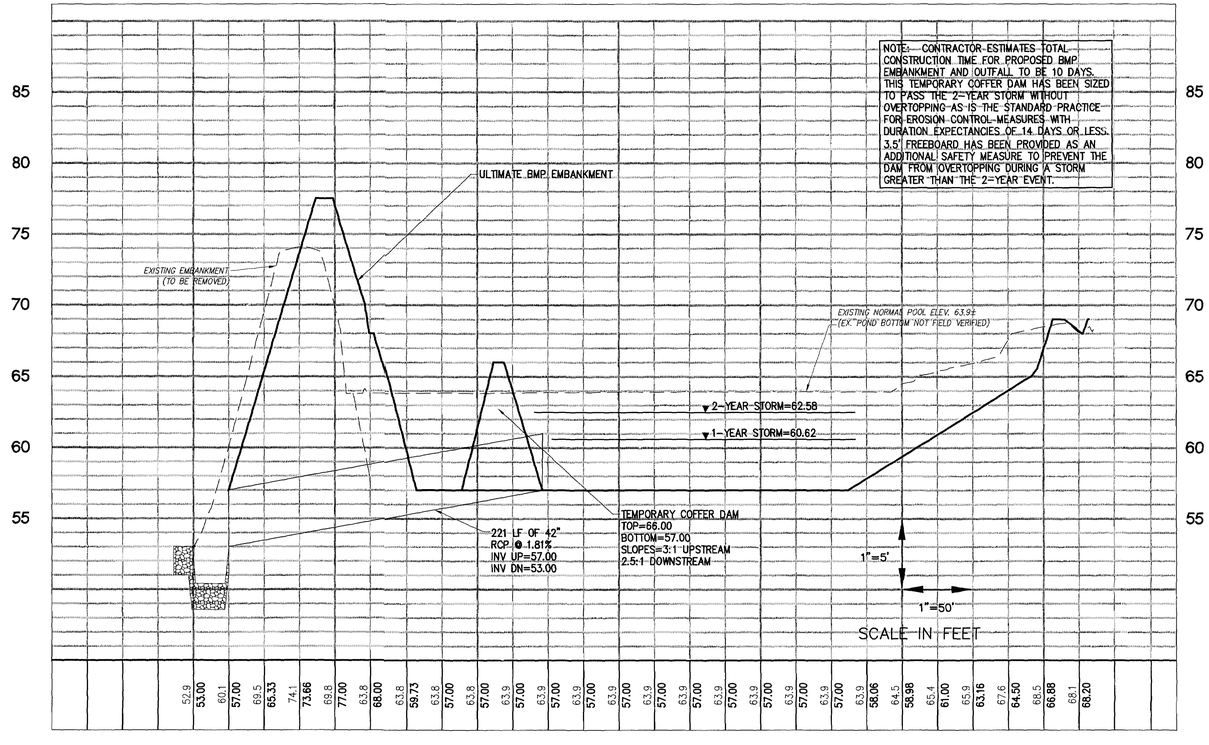


BMP PLAN VIEW (COUNTY BMP #YR006)



BMP PROFILE VIEW (COUNTY BMP #YR006)

EXISTING RUNOFF ESTIMATES TO COFFER DAM
(SEE EXISTING HYDROGRAPHS IN ENGINEERING REPORT)
1-YEAR=84.10 CFS
2-YEAR=138.46 CFS

PIPE CAPACITY
42" RCP @ 1.81% SLOPE = 146.63 CFS

TEMPORARY STORMWATER MANAGEMENT SEQUENCE OF CONSTRUCTION

1. INSTALL PERIMETER TREE PROTECTION AND SUPER SILT FENCE BELOW EXISTING DAM EMBANKMENT.
2. CLEAR AREA SUFFICIENT TO CONSTRUCT PROPOSED RIPRAP STILLING BASIN TO FUNCTION AS DEWATERING STRUCTURE FOR DAM CONSTRUCTION.
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Project Number:	9510-04
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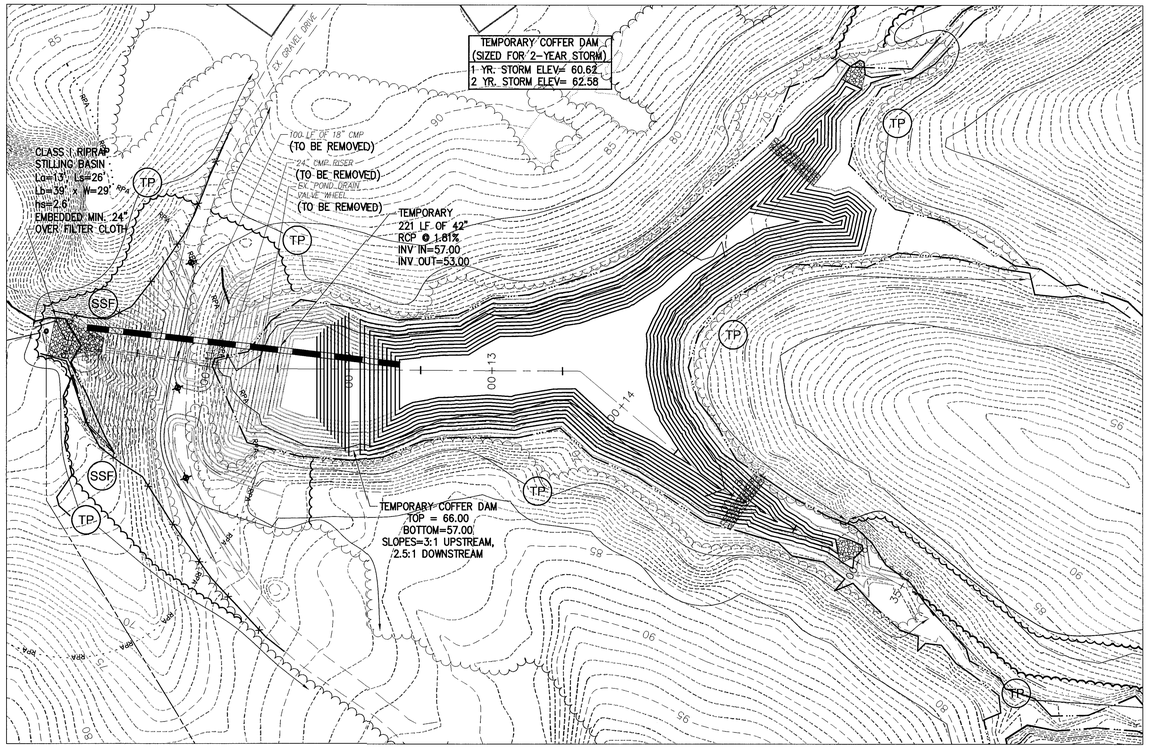
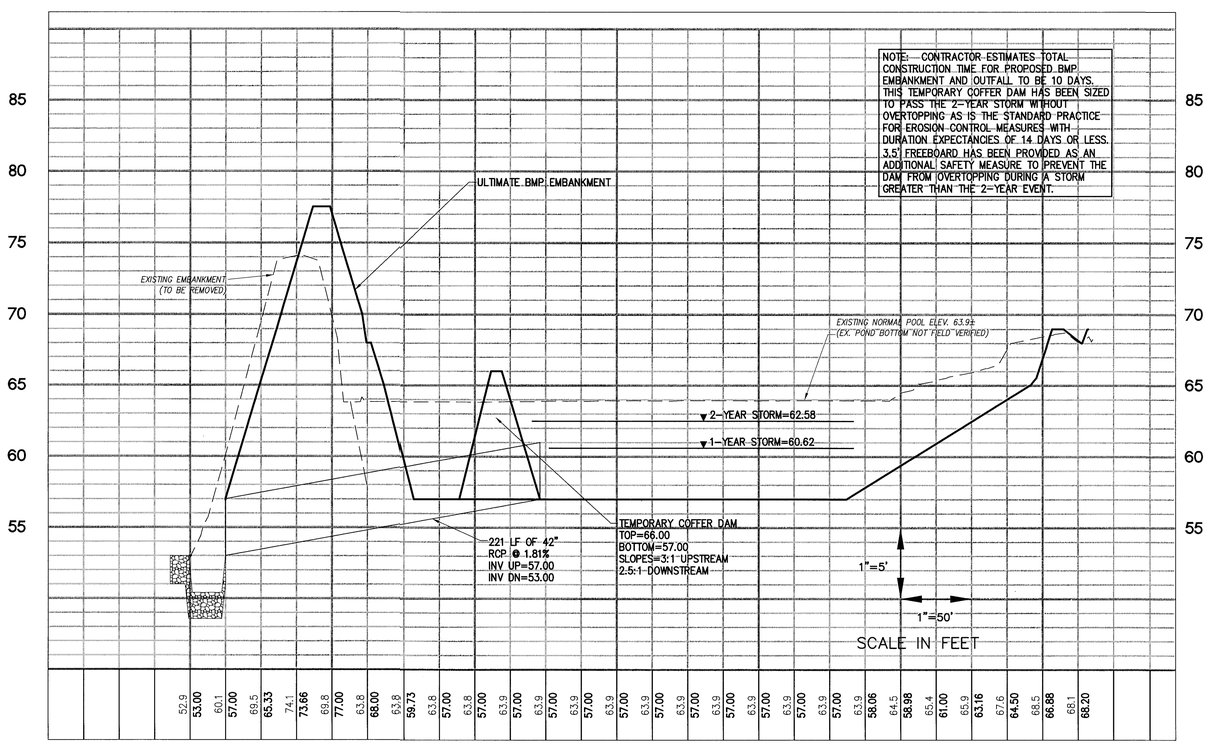


BMP PLAN VIEW (COUNTY BMP #YR006)



BMP PROFILE VIEW (COUNTY BMP #YR006)

EXISTING RUNOFF ESTIMATES TO COFFER DAM
(SEE EXISTING HYDROGRAPHS IN ENGINEERING REPORT)
1-YEAR=84.10 CFS
2-YEAR=138.46 CFS

PIPE CAPACITY
42" RCP @ 1.81% SLOPE = 146.63 CFS

TEMPORARY STORMWATER MANAGEMENT SEQUENCE OF CONSTRUCTION

1. INSTALL PERIMETER TREE PROTECTION AND SUPER SILT FENCE BELOW EXISTING DAM EMBANKMENT.
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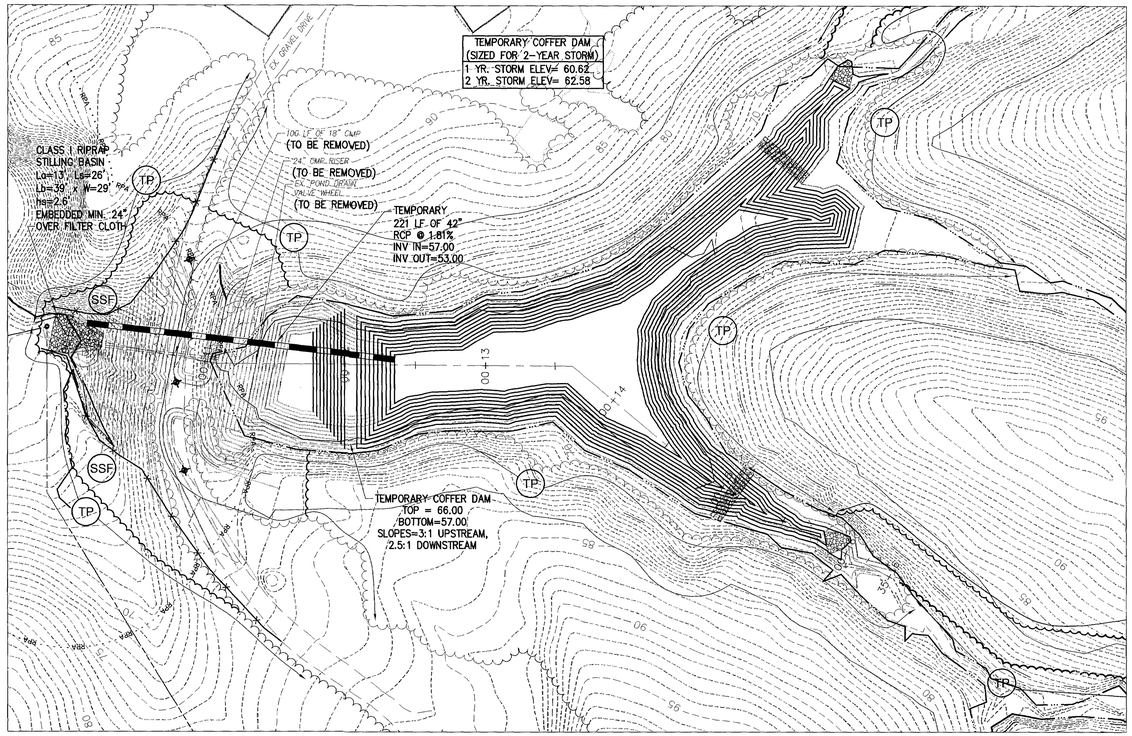

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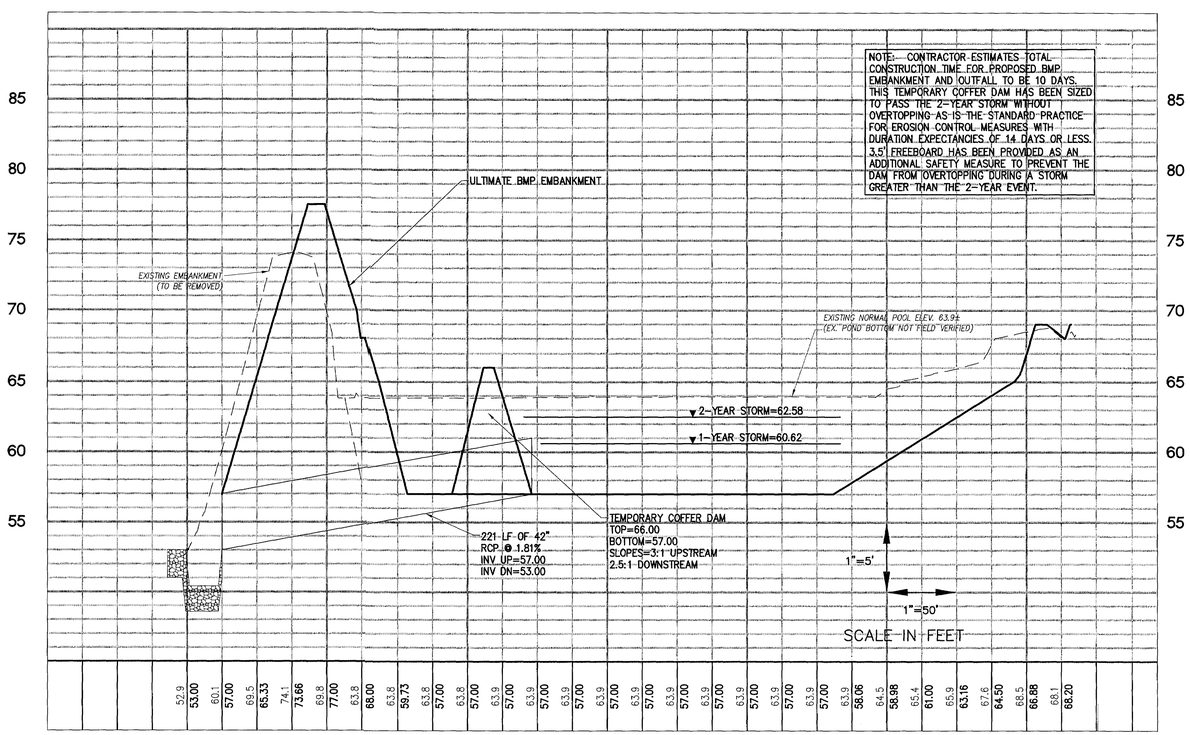

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S:\Jobs\9510\04-The Promenade DesignBuild\Engineering\Plans\Phase 2\9510-04c27-temp_swm.dwg, 5/27/2011 8:33:28 AM, matt.short

CSX RAILROAD

SEE SHEET 35 FOR THE PLANT SCHEDULE, NOTES AND DETAILS.

*THOSE PLANT LABELS NOTED WITH AN ASTERISK (*) INDICATE A BUILDING PERIMETER PLANT TRANSFER.

BUILDING 'A'

PLANT MATERIAL TRANSFERRED FROM THE REAR YARD

TRASH RECEPTACLE, TYP.
(SEE SHEET 37 FOR AMENITY DETAILS)

DECORATIVE FENCE, TYP.
(SEE SHEET 37 FOR AMENITY DETAILS)

THIS LANDSCAPE MEDIAN SHALL BE MULCHED & PLANTED WITH A COMBINATION OF LOW-GROWING JUNIPER AND ANNUALS PER OWNER. THESE PLANTS ARE IN ADDITION TO THE PLANT SCHEDULE AND NOT REQUIRED BY JAMES CITY COUNTY.

EX. 85LF OF 36" CMP @ 4.95% INV IN=96.22 INV OUT=92.01

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

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COMMONWEALTH OF VIRGINIA
GAVIN R. ROBEY
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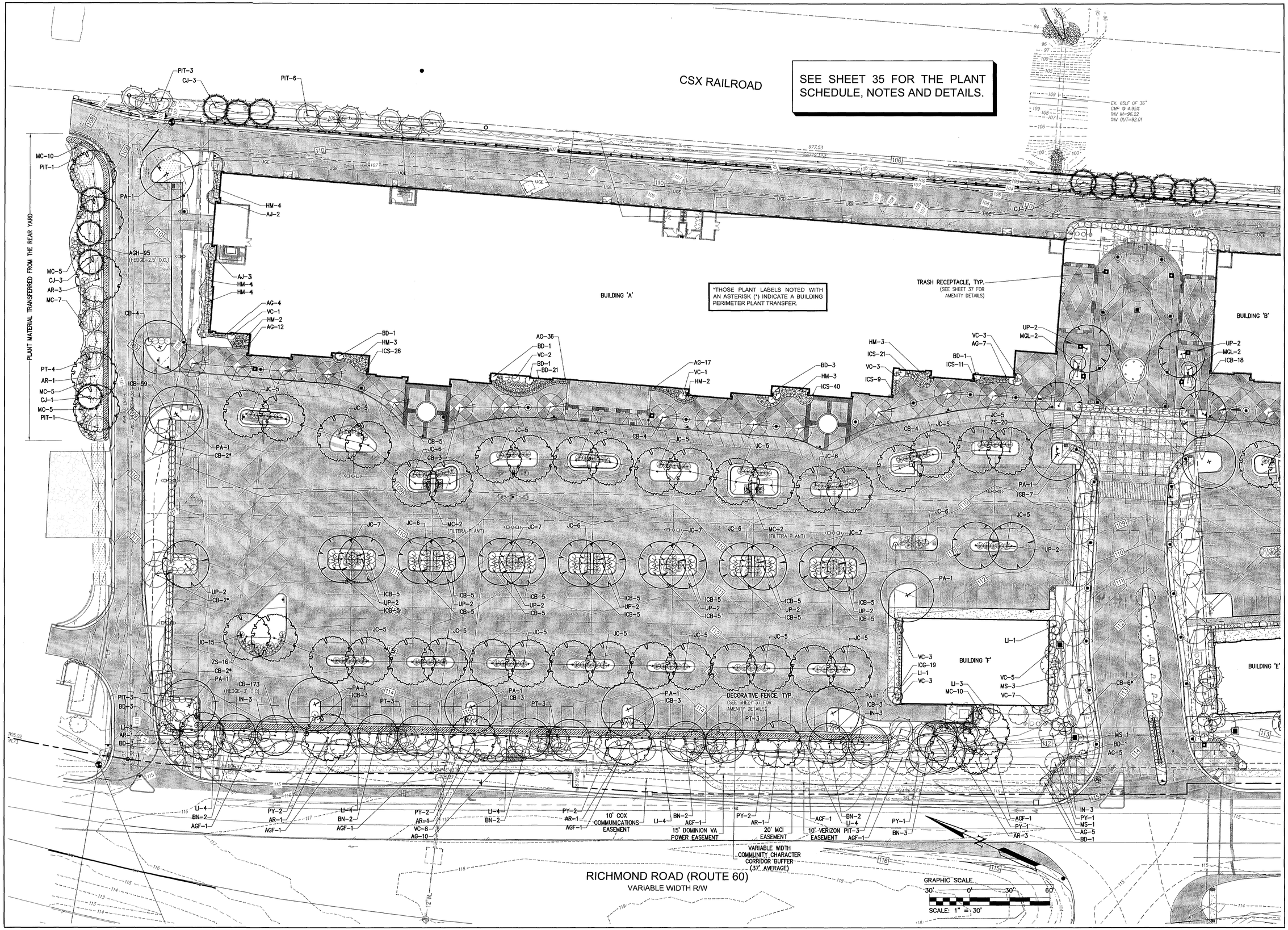

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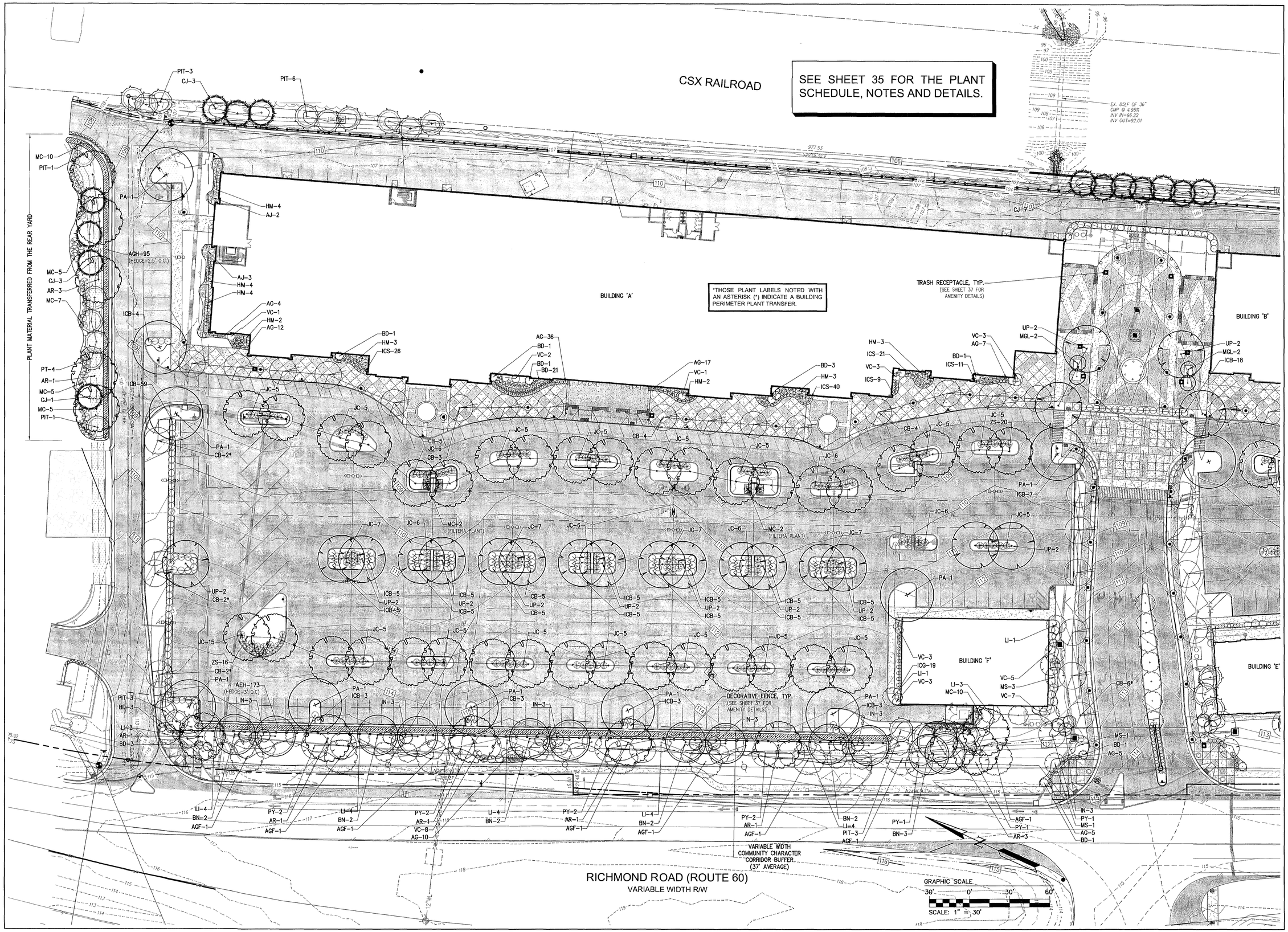

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Landscape Plan

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28

CSX RAILROAD

*THOSE PLANT LABELS NOTED WITH AN ASTERISK (*) INDICATE A BUILDING PERIMETER PLANT TRANSFER.

BUILDING B

BIKE RACK, TYP.
(SEE SHEET 37 FOR AMENITY DETAILS)

TRASH RECEPTACLE, TYP.
(SEE SHEET 37 FOR AMENITY DETAILS)

DECORATIVE FENCE, TYP.
(SEE SHEET 37 FOR AMENITY DETAILS)

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

SEE SHEET 35 FOR THE PLANT SCHEDULE, NOTES AND DETAILS.

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

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CSX RAILROAD

BUILDING 'A'

BUILDING 'B'

BUILDING 'C'

BUILDING 'E'

BUILDING 'F'

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BIKE RACK, TYP. (SEE SHEET 37 FOR AMENITY DETAILS)

TRASH RECEPTACLE, TYP. (SEE SHEET 37 FOR AMENITY DETAILS)

DECORATIVE FENCE, TYP. (SEE SHEET 37 FOR AMENITY DETAILS)

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

10' MCI EASEMENT

10' VERIZON EASEMENT

15' DOMINION VA POWER EASEMENT

10' COX COMMUNICATIONS EASEMENT

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

SEE SHEET 35 FOR THE PLANT SCHEDULE, NOTES AND DETAILS.

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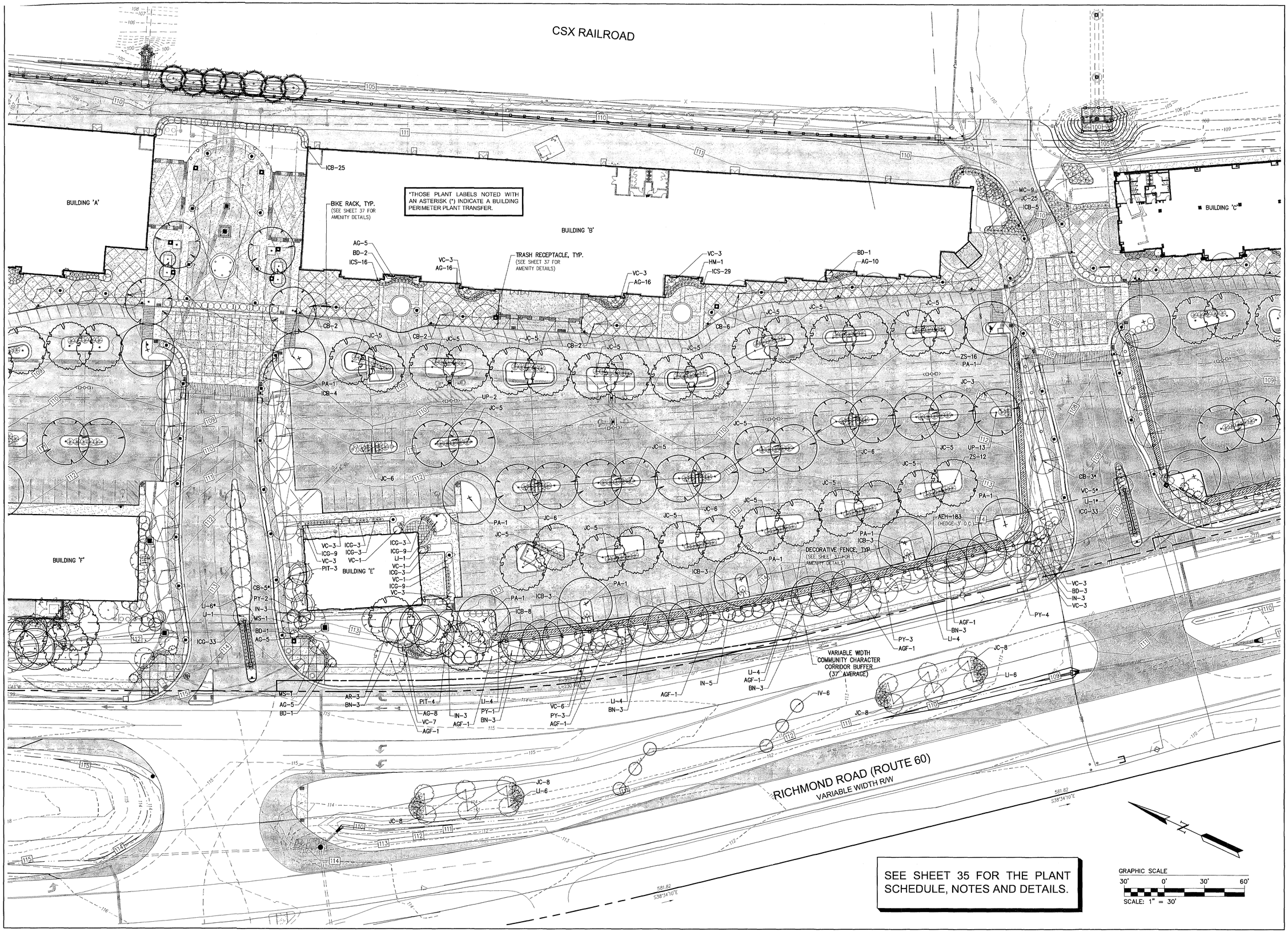

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CSX RAILROAD

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BUILDING C

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TRASH RECEPTACLE, TYP. (SEE SHEET 37 FOR AMENITY DETAILS)

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VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

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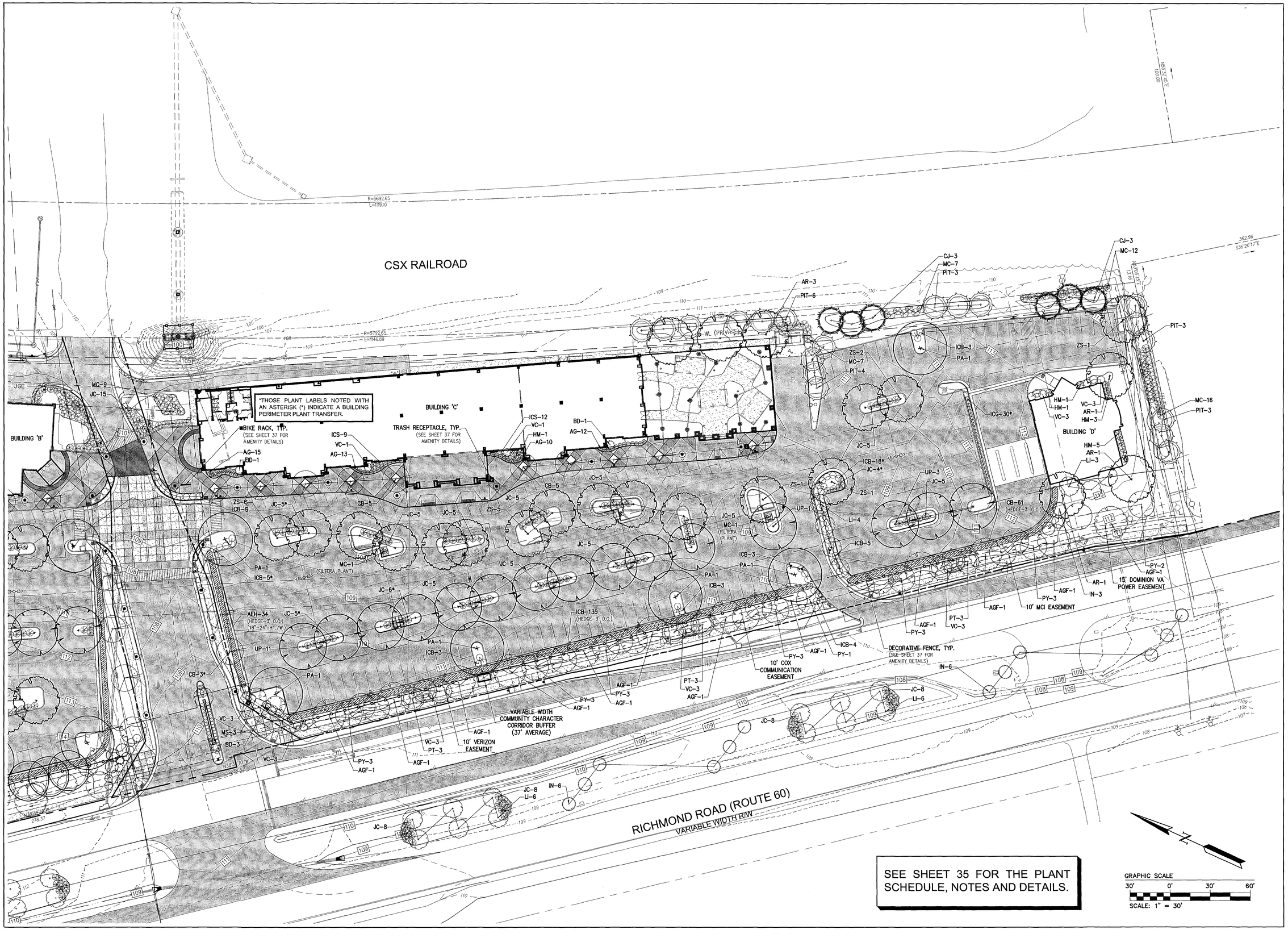

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CSX RAILROAD

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BUILDING 'B'

BUILDING 'C'

BUILDING 'D'

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TRASH RECEPTACLE, TYP. (SEE SHEET 37 FOR AMENITY DETAILS)

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VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

SEE SHEET 35 FOR THE PLANT SCHEDULE, NOTES AND DETAILS.

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

Nov.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/16/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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5/27/11
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Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

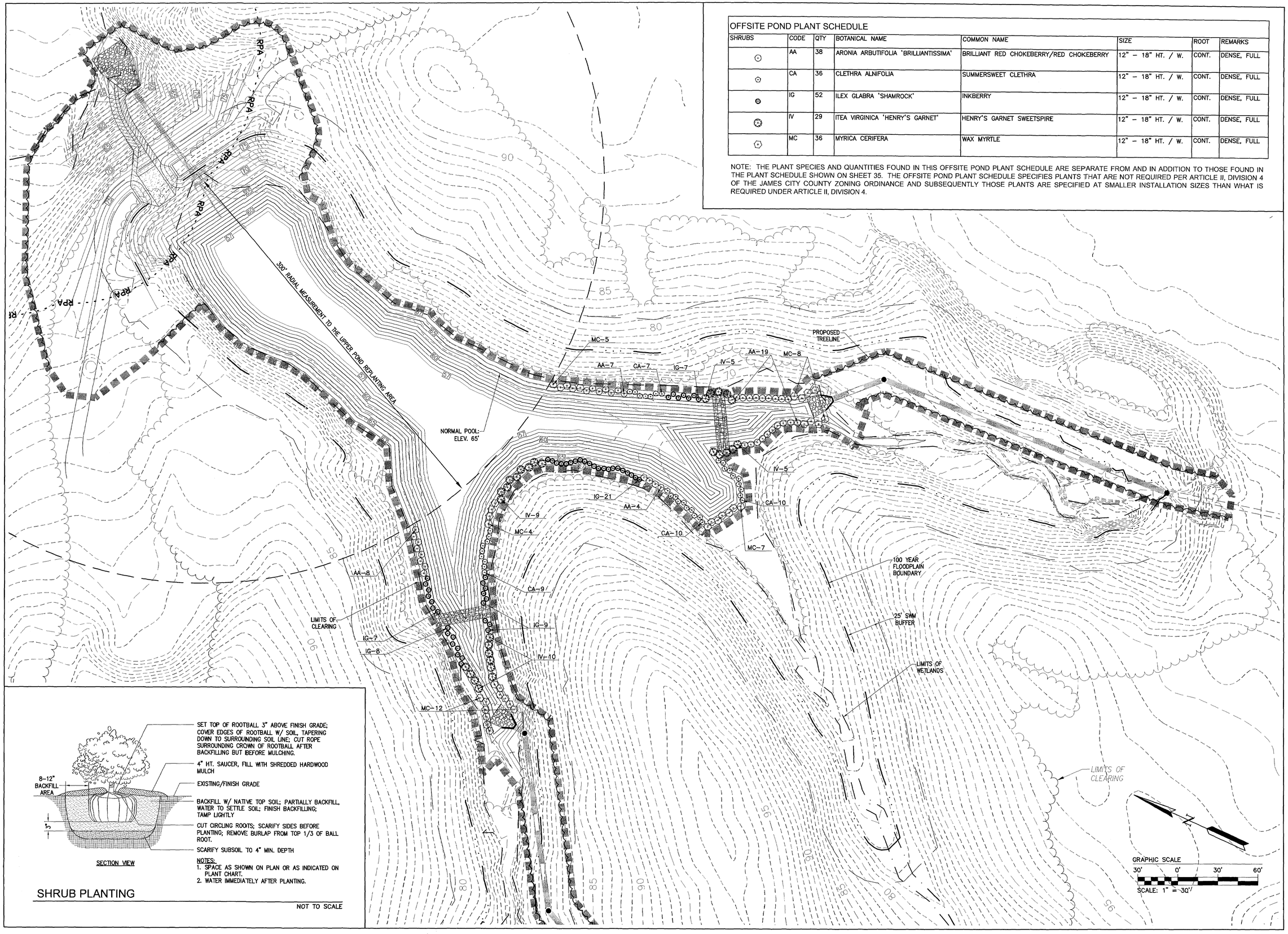
Sheet Title:
Landscape Plan

Sheet Number
30

OFFSITE POND PLANT SCHEDULE

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
	AA	38	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BRILLIANT RED CHOKEBERRY/RED CHOKEBERRY	12" – 18" HT. / W.	CONT.	DENSE, FULL
	CA	36	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	12" – 18" HT. / W.	CONT.	DENSE, FULL
	IG	52	ILEX GLABRA 'SHAMROCK'	INKBERRY	12" – 18" HT. / W.	CONT.	DENSE, FULL
	IV	29	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPIRE	12" – 18" HT. / W.	CONT.	DENSE, FULL
	MC	36	MYRICA CERIFERA	WAX MYRTLE	12" – 18" HT. / W.	CONT.	DENSE, FULL

NOTE: THE PLANT SPECIES AND QUANTITIES FOUND IN THIS OFFSITE POND PLANT SCHEDULE ARE SEPARATE FROM AND IN ADDITION TO THOSE FOUND IN THE PLANT SCHEDULE SHOWN ON SHEET 35. THE OFFSITE POND PLANT SCHEDULE SPECIFIES PLANTS THAT ARE NOT REQUIRED PER ARTICLE II, DIVISION 4 OF THE JAMES CITY COUNTY ZONING ORDINANCE AND SUBSEQUENTLY THOSE PLANTS ARE SPECIFIED AT SMALLER INSTALLATION SIZES THAN WHAT IS REQUIRED UNDER ARTICLE II, DIVISION 4.



SECTION VIEW

SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE; COVER EDGES OF ROOTBALL W/ SOIL, TAPERING DOWN TO SURROUNDING SOIL LINE; CUT ROPE SURROUNDING CROWN OF ROOTBALL AFTER BACKFILLING BUT BEFORE MULCHING.

4" HT. SAUCER, FILL WITH SHREDDED HARDWOOD MULCH

EXISTING/FINISH GRADE

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

CUT CIRCLING ROOTS; SCARIFY SIDES BEFORE PLANTING; REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.

SCARIFY SUBSOIL TO 4" MIN. DEPTH

NOTES:
1. SPACE AS SHOWN ON PLAN OR AS INDICATED ON PLANT CHART.
2. WATER IMMEDIATELY AFTER PLANTING.

SHRUB PLANTING

NOT TO SCALE

Rev.	Date	Description	Revised By
3	12/18/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=50'	Date: 9/3/2010

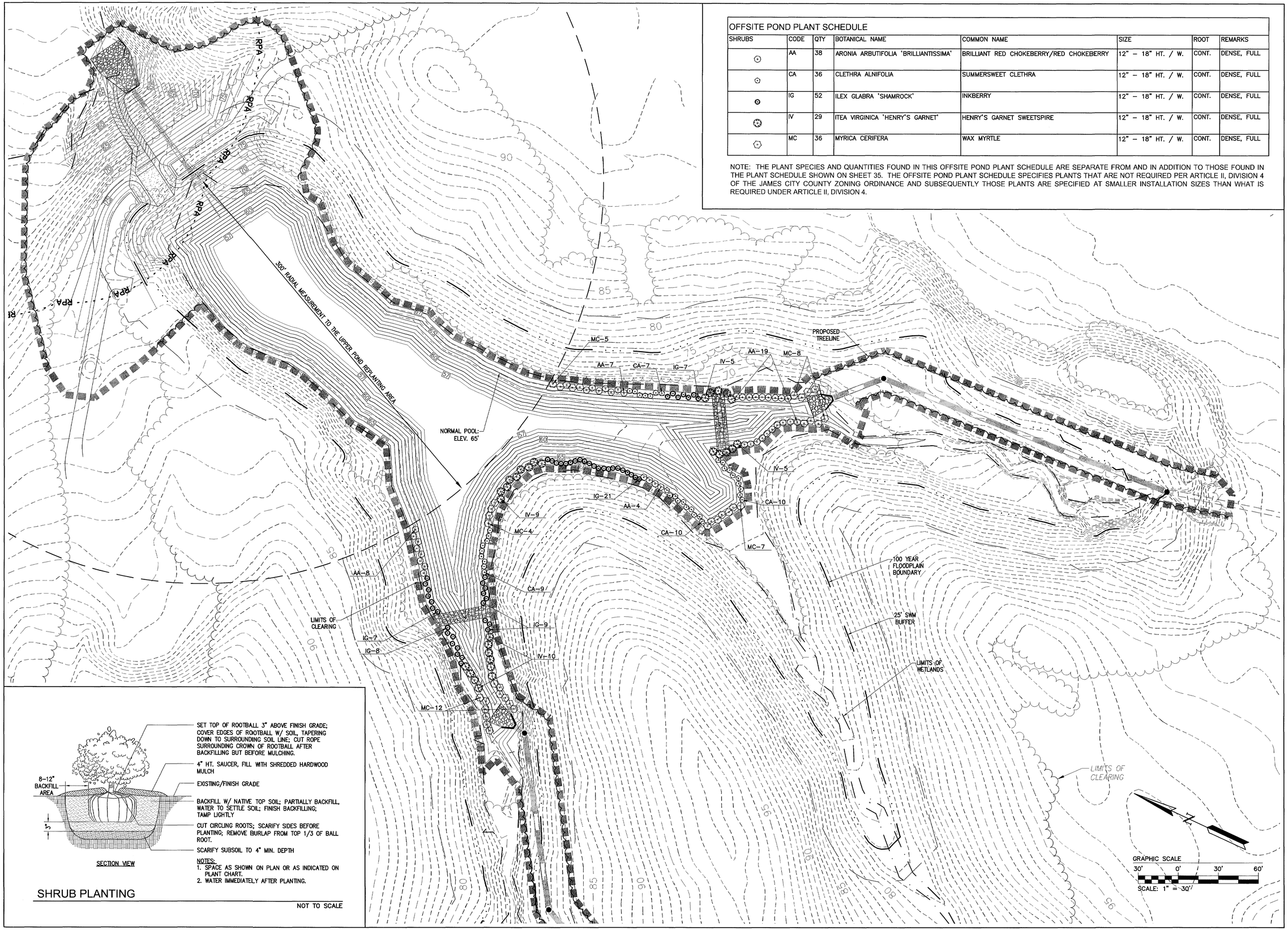
Sheet Title:
Landscape Plan - Offsite Pond

Sheet Number
31

OFFSITE POND PLANT SCHEDULE

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
	AA	38	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BRILLIANT RED CHOKEBERRY/RED CHOKEBERRY	12" – 18" HT. / W.	CONT.	DENSE, FULL
	CA	36	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	12" – 18" HT. / W.	CONT.	DENSE, FULL
	IG	52	ILEX GLABRA 'SHAMROCK'	INKBERRY	12" – 18" HT. / W.	CONT.	DENSE, FULL
	IV	29	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPIRE	12" – 18" HT. / W.	CONT.	DENSE, FULL
	MC	36	MYRICA CERIFERA	WAX MYRTLE	12" – 18" HT. / W.	CONT.	DENSE, FULL

NOTE: THE PLANT SPECIES AND QUANTITIES FOUND IN THIS OFFSITE POND PLANT SCHEDULE ARE SEPARATE FROM AND IN ADDITION TO THOSE FOUND IN THE PLANT SCHEDULE SHOWN ON SHEET 35. THE OFFSITE POND PLANT SCHEDULE SPECIFIES PLANTS THAT ARE NOT REQUIRED PER ARTICLE II, DIVISION 4 OF THE JAMES CITY COUNTY ZONING ORDINANCE AND SUBSEQUENTLY THOSE PLANTS ARE SPECIFIED AT SMALLER INSTALLATION SIZES THAN WHAT IS REQUIRED UNDER ARTICLE II, DIVISION 4.



SECTION VIEW

SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE; COVER EDGES OF ROOTBALL W/ SOIL, TAPERING DOWN TO SURROUNDING SOIL LINE; CUT ROPE SURROUNDING CROWN OF ROOTBALL AFTER BACKFILLING BUT BEFORE MULCHING.

4" HT. SAUCER, FILL WITH SHREDDED HARDWOOD MULCH

EXISTING/FINISH GRADE

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

CUT CIRCLING ROOTS; SCARIFY SIDES BEFORE PLANTING; REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.

SCARIFY SUBSOIL TO 4" MIN. DEPTH

NOTES:
1. SPACE AS SHOWN ON PLAN OR AS INDICATED ON PLANT CHART.
2. WATER IMMEDIATELY AFTER PLANTING.

SHRUB PLANTING

NOT TO SCALE

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised RW Intersection Design for VDOT Comments	MJR
6	9/2/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=50'	Date: 9/3/2010

Sheet Title:
Landscape Plan - Offsite Pond

Sheet Number
31

OFFSITE POND PLANT SCHEDULE

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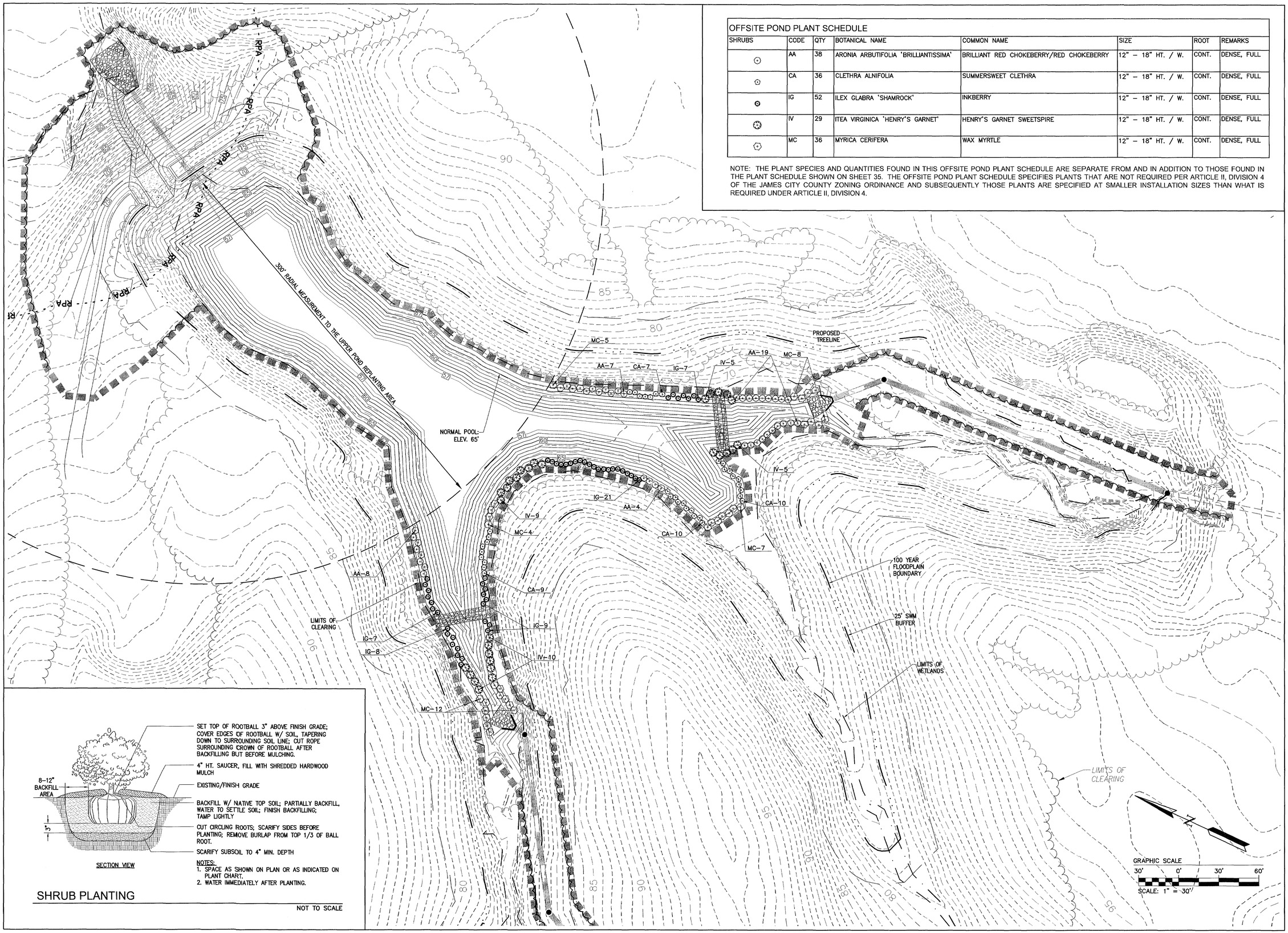

SECTION VIEW

- SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE; COVER EDGES OF ROOTBALL W/ SOIL, TAPERING DOWN TO SURROUNDING SOIL LINE; CUT ROPE SURROUNDING CROWN OF ROOTBALL AFTER BACKFILLING BUT BEFORE MULCHING.
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- EXISTING/FINISH GRADE
- BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY
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NOTES:
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SHRUB PLANTING

NOT TO SCALE

Rev	Date	Description	Approved By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
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1	10/20/10	Revised for Staff Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=50'	Date: 9/3/2010

Sheet Title: Landscape Plan - Offsite Pond

Sheet Number 31

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AN INGRESS/EGRESS AND UTILITY EASEMENT (INSTRUMENT #10023789) IS IN PLACE WITH ACTION PARK OF WILLIAMSBURG, VA INC. FOR THE SHARED DRIVE WHICH ALLOWS FOR LIGHTING AND LIGHT SPILL TO ENCROACH ON THE ADJACENT PROPERTY.

CSX RAILROAD

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

EX. 85LF OF 36" CMP @ 4.95% INV IN=96.22 INV OUT=92.01

977.53
S20°19'32"E

BUILDING 'A'

C1 A2 B2 B1* B1 A1

*NOTE: SEE THE LIGHTING SCHEDULE ON SHEET 36 FOR SPECIAL POLE MOUNTING INSTRUCTIONS FOR THESE (2) LIGHT POLES.

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Lighting Plan

Sheet Number
32

AN INGRESS/EGRESS AND UTILITY EASEMENT (INSTRUMENT #10023789) IS IN PLACE WITH ACTION PARK OF WILLIAMSBURG, VA INC. FOR THE SHARED DRIVE WHICH ALLOWS FOR LIGHTING AND LIGHT SPILL TO ENCROACH ON THE ADJACENT PROPERTY.

CSX RAILROAD

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

EX. 85LF OF 36" CMP @ 4.95% INV IN=96.22 INV OUT=92.01

BUILDING 'A'

BUILDING 'B'

BUILDING 'E'

BUILDING 'F'

A1 A2 B1 B1* B2 C1

*NOTE: SEE THE LIGHTING SCHEDULE ON SHEET 36 FOR SPECIAL POLE MOUNTING INSTRUCTIONS FOR THESE (2) LIGHT POLES.

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

GRAPHIC SCALE
30' 0' 30' 60'
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Rev.	Date	Description	Revised By
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10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Lighting Plan

Sheet Number
32

AN INGRESS/EGRESS AND UTILITY EASEMENT (INSTRUMENT #10023789) IS IN PLACE WITH ACTION PARK OF WILLIAMSBURG, VA INC. FOR THE SHARED DRIVE WHICH ALLOWS FOR LIGHTING AND LIGHT SPILL TO ENCROACH ON THE ADJACENT PROPERTY.

CSX RAILROAD

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

EX. 85LF OF 36" CMP @ 4.95% INV IN=96.22 INV OUT=92.01

977.53
S20°19'32"E

BUILDING 'A'

BUILDING 'B'

BUILDING 'E'

BUILDING 'F'

A1 A2 B1 B1* B2 C1

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

*NOTE: SEE THE LIGHTING SCHEDULE ON SHEET 36 FOR SPECIAL POLE MOUNTING INSTRUCTIONS FOR THESE (2) LIGHT POLES.

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

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2	11/19/10	Revised for Staff Comments	MJR
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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Lighting Plan

Sheet Number
32

CSX RAILROAD

BUILDING B

(6) FOUNTAIN LIGHTS
(BY OTHERS)

A1 A2 B1 B2 C1

VARIABLE WIDTH
COMMUNITY CHARACTER
CORRIDOR BUFFER
(37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

Rev.	Date	Description	Revised By
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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Lighting Plan
Sheet Number	33

CSX RAILROAD

BUILDING 'A'

BUILDING 'B'

BUILDING 'C'

BUILDING 'E'

BUILDING 'F'

(6) FOUNTAIN LIGHTS (BY OTHERS)

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

GRAPHIC SCALE
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6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title:	Lighting Plan
Sheet Number	33

CSX RAILROAD

BUILDING 'A'

BUILDING 'B'

BUILDING 'C'

BUILDING 'E'

BUILDING 'F'

(6) FOUNTAIN LIGHTS (BY OTHERS)

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

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Stonehouse District James City County Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Lighting Plan

Sheet Number
33

CSX RAILROAD

R=5692.65
L=1119.30

R=5792.65
L=1146.59

BUILDING C

A1 A2 B1 B2 C1

VARIABLE WIDTH
COMMUNITY CHARACTER
CORRIDOR BUFFER
(37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

362.96
S36°20'17"E

N

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

Rev.	Date	Description	Revised By
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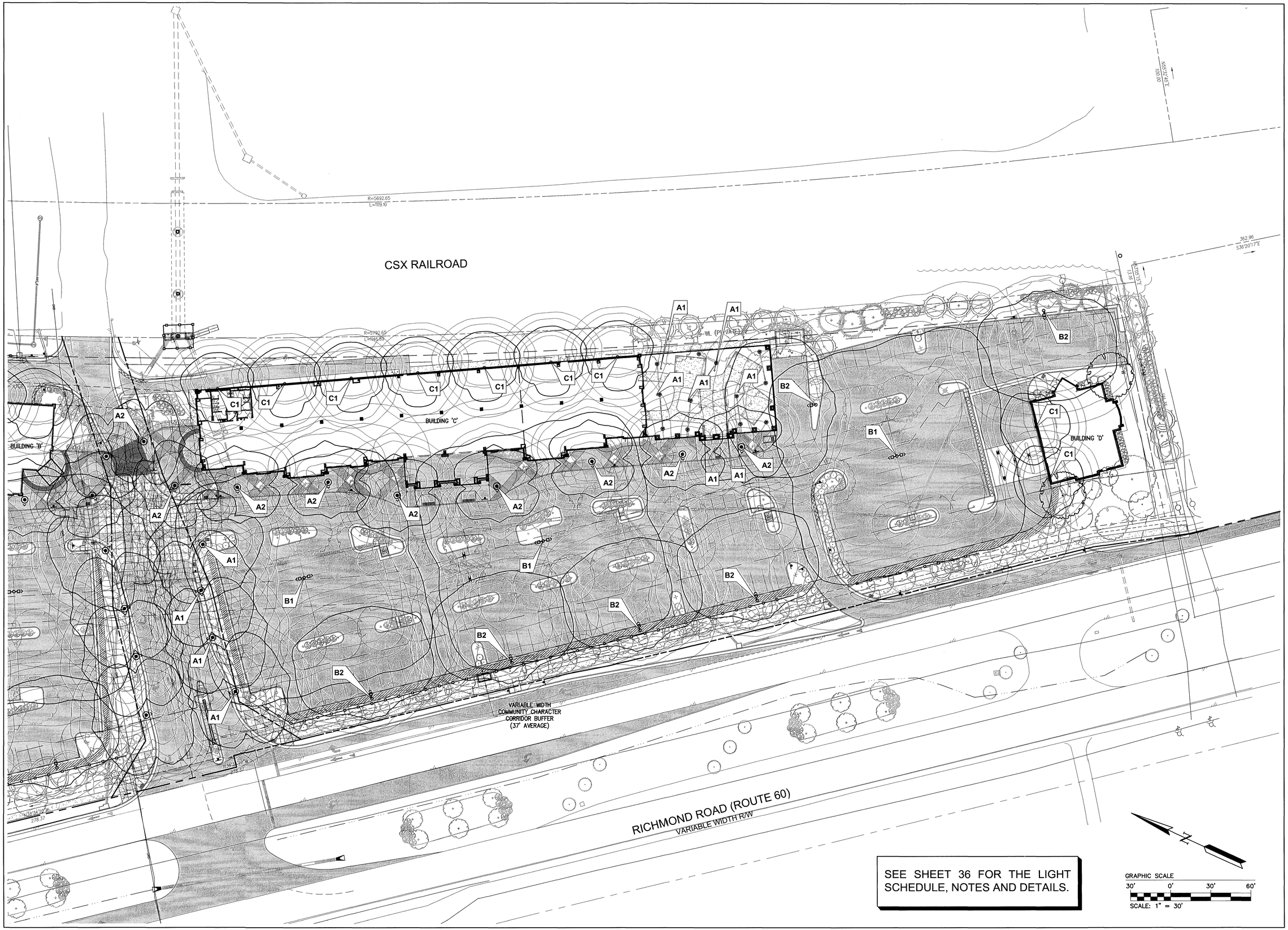
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010
Sheet Title: Lighting Plan	

Sheet Number
34



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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Lighting Plan

Sheet Number
34

CSX RAILROAD

BUILDING 'B'

BUILDING 'C'

BUILDING 'D'

VARIABLE WIDTH COMMUNITY CHARACTER CORRIDOR BUFFER (37' AVERAGE)

RICHMOND ROAD (ROUTE 60)
VARIABLE WIDTH R/W

SEE SHEET 36 FOR THE LIGHT SCHEDULE, NOTES AND DETAILS.

GRAPHIC SCALE
30' 0' 30' 60'
SCALE: 1" = 30'

Rev.	Date	Description	Reviewed By
6	5/2/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/25/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/19/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

COMMONWEALTH OF VIRGINIA
GAVIN R. ROBEY
Lic. No. 001299
5/2/11
LICENSED LANDSCAPE ARCHITECT

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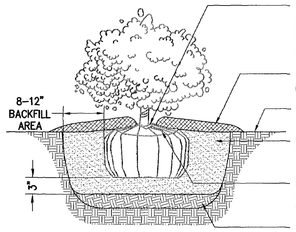
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-94
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Lighting Plan

Sheet Number
34



SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE; COVER EDGES OF ROOTBALL W/ SOIL, TAPERING DOWN TO SURROUNDING SOIL LINE; CUT ROPE SURROUNDING CROWN OF ROOTBALL AFTER BACKFILLING BUT BEFORE MULCHING.

4" HT. SAUCER, FILL WITH SHREDDED HARDWOOD MULCH

EXISTING/FINISH GRADE

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

CUT CIRCLING ROOTS; SCARIFY SIDES BEFORE PLANTING; REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.

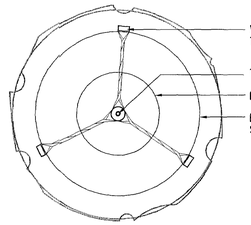
SCARIFY SUBSOIL TO 4" MIN. DEPTH

SECTION VIEW

NOTES:
1. SPACE AS SHOWN ON PLAN OR AS INDICATED ON PLANT CHART.
2. WATER IMMEDIATELY AFTER PLANTING.

SHRUB PLANTING

NOT TO SCALE



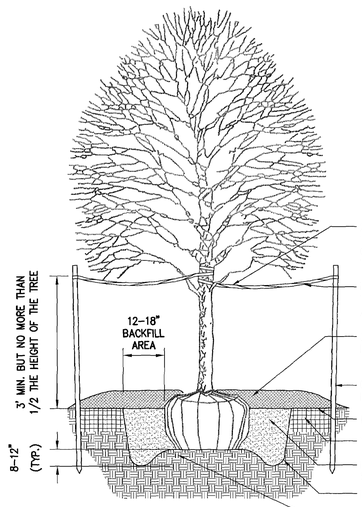
WOOD STAKE, TYP.

TREE TRUNK

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING



2–3" WIDE WEBBING OR POLYETHYLENE STRAPS TWISTED LOOSELY AT THEIR MIDPOINT AND WRAPPED ONCE AROUND THE TREE TRUNK FLAT. ATTACHED TO THE STAKE WITH STAPLES.

LOOSELY TWIST EACH STRAP TO ALLOW FOR 4–6" OF TRUNK FLEXING (REMOVE ALL STRAPS AND STAKING AFTER 1–2 FULL GROWING SEASONS)

3" HT. SHREDDED HARDWOOD MULCH; KEPT AWAY FROM TRUNK. DO NOT COVER THE ROOT COLLAR WITH TOP SOIL OR MULCH.

6–8' WOOD STAKES, 3 PER TREE. STAKES TO BE SAME HEIGHT, DRIVEN IN ON A SLIGHT ANGLE.

EXISTING/FINISH GRADE

TILL 18" WIDTH AT TOP EDGE OF HOLE TO A 8–12" DEPTH

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

DECIDUOUS TREE PLANTING

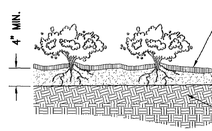
NOT TO SCALE

GENERAL NOTES

1. ALL PLANT STOCK SHALL MEET THE MINIMUM STANDARDS & SPECIFICATIONS DESCRIBED IN THE "AMERICAN STANDARD FOR NURSERY STOCK," LATEST EDITION, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
2. ALL PLANT MATERIAL SHALL BE INSTALLED AS SPECIFIED IN THE VNLA STANDARDIZED LANDSCAPE SPECIFICATIONS, LATEST EDITION.
3. THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE ALL PLANTING SHOWN ON THE DRAWINGS. WHERE DISCREPANCIES EXIST BETWEEN THE PLANS & THE PLANT LIST, THE PLANS SHALL TAKE PRECEDENCE.
3. GROUPINGS OF PLANTS SHALL BE MULCHED IN CONTINUOUS PLANT BEDS.
4. AREAS DISTURBED BY CONSTRUCTION, NOT OTHERWISE WITHIN PLANT BEDS OR COVERED IN SITE CONTRACT, ARE TO BE SODDED OR SEEDED WITH A STATE CERTIFIED TURF–TYPE TALL FESCUE VARIETY SELECTED FROM THE FOLLOWING LIST:

   Biltmore, Bingo, Cochise III, Constitution, Coyote II, Crossfire II, Endeavor, Fidelity, Good–en, Grande, Greenkeeper WAF, Inferno, Kalahari, Magellan, Masterpiece, Onyx, Padre, Picasso, Penn 1901, Quest, Raptor, Rebel Exeda, Rembrandt, Rendition, SR 8250, SR 8300, Tarheel, Titanium, Watchdog, Wolfpack, WPEZE.

5. TREES SUPPORT STAKING IS OPTIONAL FOR TREES THAT ARE 1" CAL. OR 6' HT. OR LESS. ALL TREE STAKING SHALL BE REMOVED AFTER 1–2 GROWING SEASONS.
9. ALL TREES ARE TO BE PLANTED SO TOP OF ROOT BALL IS 3" ABOVE FINISH GRADE.
10. TREE SHALL BE INSTALLED PLUMB & STRAIGHT.
11. PRUNE ALL SUCKERS, RUBBING OR CROSSED BRANCHES, CODOMINANT LEADERS, NARROW CROTCH ANGLES, WATER SPROUTS, BROKEN BRANCHES.
12. DO NOT PRUNE CENTRAL LEADER OR BRANCH TIPS.
13. REMOVE TAGS, LABELS & PLASTIC SLEEVING.
14. DO NOT WRAP TRUNK.
15. IF PLANT MATERIAL IS CONTAINER–GROWN, REMOVE TOP OF WIRE BASKET, OR REMOVE CONTAINER & CUT CIRCLING ROOT; IF FIELD–GROWN, CUT ROPE SURROUNDING BOTTOM OF TREE TRUNK AFTER BACKFILLING BUT BEFORE MULCHING & REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.
16. REMOVE ALL STAKES, STRAPS, WIRES, RUBBER HOSES, ETC. AFTER 1–2 GROWING SEASONS.
17. PLANT SUBSTITUTIONS WILL NOT BE MADE WITHOUT THE WRITTEN CONSENT OF THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE PRIOR TO INSTALLATION.
18. ALL INSTALLED PLANT MATERIAL SHALL BE SUBJECT TO REGULAR MAINTENANCE, INCLUDING FERTILIZATION, PRUNING, REPLACEMENT, INSECT AND DISEASE CONTROL, WATERING, MULCHING, AND WEED CONTROL.
19. CONTRACTORS ARE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO THE BEGINNING OF WORK AND AVOIDING THEM DURING LANDSCAPING OPERATIONS.



3" HT. SHREDDED HARDWOOD MULCH

REMOVE TOP 4" OF SOIL FROM FINISH GRADE W/IN THE GROUND COVER PLANTING BED. BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL. FINISH BACKFILLING; TAMP LIGHTLY

EXISTING/FINISH GRADE

SCARIFY SUBGRADE TO 4" MIN. DEPTH

SECTION VIEW

NOTES:
1. SPACE AS SHOWN ON PLAN OR AS INDICATED ON PLANT CHART.
2. WATER IMMEDIATELY AFTER PLANTING.

GROUND COVER PLANTING BED

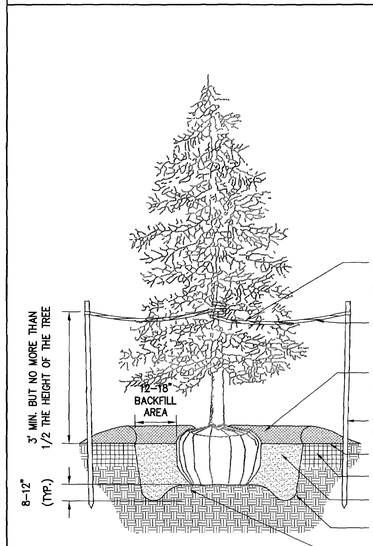
NOT TO SCALE

PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	8	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	2–1/2" CAL.	B & B	SINGLE STEM
PA	31	PLATNUS X ACERIFOLIA 'BLOODGOOD'	'BLOODGOOD' LONDON PLANETREE	2–1/2" CAL.	B & B	SINGLE STEM
UP	52	ULMUS PARVIFOLIA	LACE BARK ELM	2–1/2" CAL.	B & B	SINGLE STEM
ZS	73	ZELKOVA SERRATA 'GREEN VASE'	'GREEN VASE' JAPANESE ZELKOVA	2–1/2" CAL.	B & B	SINGLE STEM
EVERGREEN TREES:						
CJ	20	CRYPTOMERIA JAPONICA 'YOSHINO'	'YOSHINO' JAPANESE CRYPTOMERIA	8–10' HT.	B & B	SINGLE STEM
IN	18	ILEX x 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	8–10' HT.	B & B	SINGLE STEM
MGL	4	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	'LITTLE GEM' SOUTHERN MAGNOLIA	8–10' HT.	B & B	SINGLE STEM
PIT	34	PINUS TEADA	LOBLOLLY PINE	8–10' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
CB	65	CARPINUS BETULUS 'FASTIGIATA'	'FASTIGIATA' EUROPEAN HORNBEAM	1–1/2" CAL.	B & B	SINGLE STEM
LI	28	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
SHRUBS:						
AG	173	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	18"–24" HT./W.	CONT.	DENSE, FULL
AGH	95	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	18"–24" HT./W.	CONT.	HEDGE–2.5' O.C.
AJ	5	AUCUBA JAPONICA	JAPANESE AUCUBA	22"–30" HT./W.	CONT.	DENSE, FULL
BD	12	BUDDLEIA DAVIDII 'ROYAL RED'	'ROYAL RED' BUTTERFLY BUSH	22"–30" HT./W.	CONT.	DENSE, FULL
HM	26	HYDRANGEA MACROPHYLLA 'MARIESII VARIEGATA'	'MARIESII VARIEGATA' BIGLEAF HYDRANGEA	22"–30" HT./W.	CONT.	DENSE, FULL
ICB	275	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
ICS	194	ILEX CRENATA 'SOFT TOUCH'	'SOFT TOUCH' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
JC	436	JUNIPERUS CHINENSIS 'SARGENTII'	SARGENT'S JUNIPER	18"–24" HT./W.	CONT.	DENSE, FULL
LJH	116	LIGUSTRUM JAPONICUM 'CORIACEUM'	CURLYLEAF LIGUSTRUM	36" HT.	CONT.	HEDGE–3' O.C.
MC	98	MYRICA CERIFERA	SOUTHERN WAXMYRTLE	18"–24" HT./W.	CONT.	DENSE, FULL
VC	21	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

ROUTE 60 BUFFER PLANT SCHEDULE (125% OF REQUIRED INSTALLED SIZES)

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	14	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	3–1/4" CAL.	B & B	SINGLE STEM
BN	37	BETULA NIGRA 'DURA HEAT'	'DURA HEAT' RIVER BIRCH	3–1/4" CAL.	B & B	3–5 STEMS
PA	2	PLATNUS X ACERIFOLIA 'BLOODGOOD'	'BLOODGOOD' LONDON PLANETREE	3–1/4" CAL.	B & B	SINGLE STEM
EVERGREEN TREES:						
CJ	4	CRYPTOMERIA JAPONICA 'YOSHINO'	'YOSHINO' JAPANESE CRYPTOMERIA	10–12' HT.	B & B	SINGLE STEM
IN	17	ILEX x 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	10–12' HT.	B & B	SINGLE STEM
PIT	17	PINUS TEADA	LOBLOLLY PINE	10–12' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
AGF	24	ACER GINNALA 'FLAME'	'FLAME' AMUR MAPLE	2" CAL.	B & B	SINGLE STEM
LI	40	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	10–12' HT.	B & B	3–5 STEMS
MS	14	MAGNOLIA x 'SHIRAZZ'	'SHIRAZZ' MAGNOLIA	2" CAL.	B & B	SINGLE STEM
PY	48	PRUNUS x YEDOENSIS	YOSHINO CHERRY	2" CAL.	B & B	SINGLE STEM
SHRUBS:						
AG	49	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	24"–30" HT./W.	CONT.	DENSE, FULL
BD	18	BUDDLEIA DAVIDII 'ROYAL RED'	'ROYAL RED' BUTTERFLY BUSH	28"–34" HT./W.	CONT.	DENSE, FULL
ICB	16	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	24"–30" HT./W.	CONT.	DENSE, FULL
ICG	41	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	24"–30" HT./W.	CONT.	DENSE, FULL
LJH	481	LIGUSTRUM JAPONICUM 'CORIACEUM'	CURLYLEAF LIGUSTRUM	36" HT.	CONT.	HEDGE–3' O.C.
VC	44	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	28"–34" HT./W.	CONT.	DENSE, FULL



WOOD STAKE, TYP.

TREE TRUNK

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING

2–3" WIDE WEBBING OR POLYETHYLENE STRAPS TWISTED LOOSELY AT THEIR MIDPOINT AND WRAPPED ONCE AROUND THE TREE TRUNK FLAT. ATTACHED TO THE STAKE WITH STAPLES.

LOOSELY TWIST EACH STRAP TO ALLOW FOR 4–6" OF TRUNK FLEXING (REMOVE ALL STRAPS AND STAKING AFTER 1–2 FULL GROWING SEASONS)

3" HT. SHREDDED HARDWOOD MULCH; KEPT AWAY FROM TRUNK. DO NOT COVER THE ROOT COLLAR WITH TOP SOIL OR MULCH.

6–8' WOOD STAKES, 3 PER TREE. STAKES TO BE SAME HEIGHT, DRIVEN IN ON A SLIGHT ANGLE.

EXISTING/FINISH GRADE

TILL 18" WIDTH AT TOP EDGE OF HOLE TO A 8–12" DEPTH

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

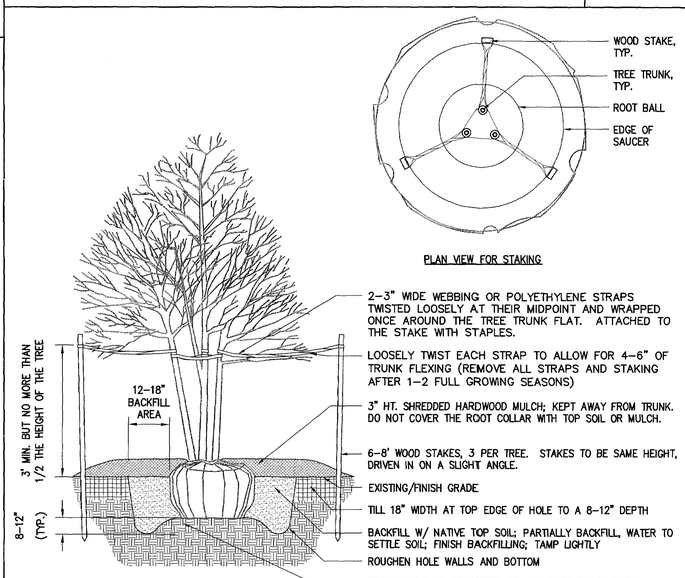
ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

EVERGREEN TREE PLANTING

NOT TO SCALE



WOOD STAKE, TYP.

TREE TRUNK, TYP.

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING

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6–8' WOOD STAKES, 3 PER TREE. STAKES TO BE SAME HEIGHT, DRIVEN IN ON A SLIGHT ANGLE.

EXISTING/FINISH GRADE

TILL 18" WIDTH AT TOP EDGE OF HOLE TO A 8–12" DEPTH

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

MULTI-STEM TREE PLANTING

NOT TO SCALE

JAMES CITY COUNTY LANDSCAPE REQUIREMENTS

AREAS		TREES AND SHRUBS		
LANDSCAPE YARD	COUNTY REQ.	PLANTING RATIO	PLANTS REQUIRED	NEW PLANTS PROVIDED
37' AVE. WIDTH BUFFER Richmond Rd.	86,510 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	217 TREES (40% 87 DECIDUOUS SHADE; 15–20% 33 ORNAMENTAL; 35% 76 LG EVERGREEN)	217 TREES (53 DECIDUOUS SHADE; 126 ORNAMENTAL; 38 LG EVERGREEN)
			649 SHRUBS (35% 228 EVERGREEN)	649 SHRUBS (387 EVERGREEN)
15' SIDE YARD South	2,050 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	6 TREES (40% 3 DECIDUOUS SHADE; 15–20% 1 ORNAMENTAL; 35% 3 LG EVERGREEN)	6 TREES (0 DECIDUOUS SHADE; 0 ORNAMENTAL; 6 LG EVERGREEN)
			16 SHRUBS (35% 6 EVERGREEN)	16 SHRUBS (16 EVERGREEN)
REAR YARD (Variable Width)	20,635 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	52 TREES (40% 21 DECIDUOUS SHADE; 15–20% 8 ORNAMENTAL; 35% 19 LG EVERGREEN)	52 TREES (8 DECIDUOUS SHADE; 8 ORNAMENTAL; 44 LG EVERGREEN)
			153 SHRUBS (35% 54 EVERGREEN)	153 SHRUBS (153 EVERGREEN)
PARKING LOT	739 SPACES	1 TREE AND 2 SHRUBS: 5 PARKING SPACES	148 TREES (50% 74 LG DECIDUOUS; 35% 52 EVERGREEN)	156 TREES (152 LG DECIDUOUS; 4 EVERGREEN)
			296 SHRUBS (35% 104 EVERGREEN)	645 SHRUBS (645 EVERGREEN)
10' BLDG PERIMETER (BUILDING 'A')	16,740 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	84 TREES OR 419 SHRUBS	32 TREES AND 259 SHRUBS
10' BLDG PERIMETER (BUILDING 'B')	12,715 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	64 TREES OR 318 SHRUBS	28 TREES AND 178 SHRUBS
10' BLDG PERIMETER (BUILDING 'C')	8,810 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	45 TREES OR 221 SHRUBS	17 TREES AND 136 SHRUBS

Rev.	Date	Description	Revised By
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR

COMMONWEALTH OF VIRGINIA
GAVIN R. ROBEY
Lic. No. 001299
11/18/10
LANDSCAPE ARCHITECT

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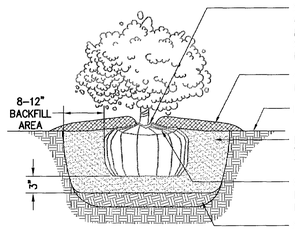
Scale: NTS	Date: 9/3/2010

Sheet Title:
Landscape Notes & Details

Sheet Number
35



SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE; COVER EDGES OF ROOTBALL W/ SOIL, TAPERING DOWN TO SURROUNDING SOIL LINE; CUT ROPE SURROUNDING CROWN OF ROOTBALL AFTER BACKFILLING BUT BEFORE MULCHING.

4" HT. SAUCER, FILL WITH SHREDDED HARDWOOD MULCH

EXISTING/FINISH GRADE

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

CUT CIRCLING ROOTS; SCARIFY SIDES BEFORE PLANTING; REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.

SCARIFY SUBSOIL TO 4" MIN. DEPTH

SECTION VIEW

NOTES:
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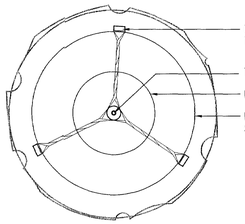
2. WATER IMMEDIATELY AFTER PLANTING.

SHRUB PLANTING

NOT TO SCALE



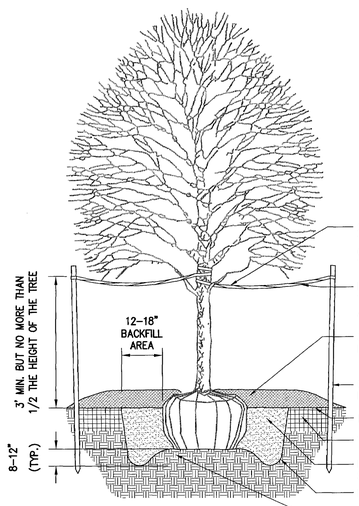
WOOD STAKE, TYP.

TREE TRUNK

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING



2–3" WIDE WEBBING OR POLYETHYLENE STRAPS TWISTED LOOSELY AT THEIR MIDPOINT AND WRAPPED ONCE AROUND THE TREE TRUNK FLAT. ATTACHED TO THE STAKE WITH STAPLES.

LOOSELY TWIST EACH STRAP TO ALLOW FOR 4–6" OF TRUNK FLEXING (REMOVE ALL STRAPS AND STAKING AFTER 1–2 FULL GROWING SEASONS)

3" HT. SHREDDED HARDWOOD MULCH; KEPT AWAY FROM TRUNK. DO NOT COVER THE ROOT COLLAR WITH TOP SOIL OR MULCH.

6–8' WOOD STAKES, 3 PER TREE. STAKES TO BE SAME HEIGHT, DRIVEN IN ON A SLIGHT ANGLE.

EXISTING/FINISH GRADE

TILL 18" WIDTH AT TOP EDGE OF HOLE TO A 8–12" DEPTH

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

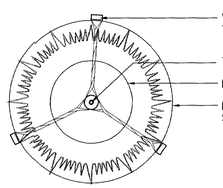
ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

DECIDUOUS TREE PLANTING

NOT TO SCALE



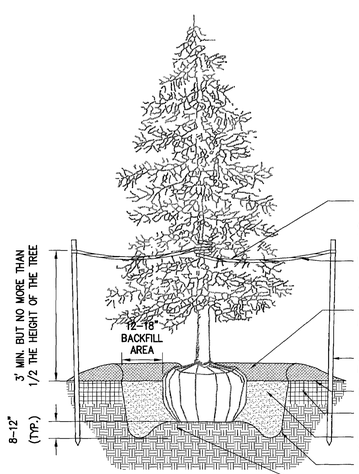
WOOD STAKE, TYP.

TREE TRUNK

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING



2–3" WIDE WEBBING OR POLYETHYLENE STRAPS TWISTED LOOSELY AT THEIR MIDPOINT AND WRAPPED ONCE AROUND THE TREE TRUNK FLAT. ATTACHED TO THE STAKE WITH STAPLES.

LOOSELY TWIST EACH STRAP TO ALLOW FOR 4–6" OF TRUNK FLEXING (REMOVE ALL STRAPS AND STAKING AFTER 1–2 FULL GROWING SEASONS)

3" HT. SHREDDED HARDWOOD MULCH; KEPT AWAY FROM TRUNK. DO NOT COVER THE ROOT COLLAR WITH TOP SOIL OR MULCH.

6–8' WOOD STAKES, 3 PER TREE. STAKES TO BE SAME HEIGHT, DRIVEN IN ON A SLIGHT ANGLE.

EXISTING/FINISH GRADE

TILL 18" WIDTH AT TOP EDGE OF HOLE TO A 8–12" DEPTH

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

EVERGREEN TREE PLANTING

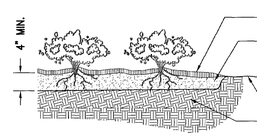
NOT TO SCALE

GENERAL NOTES

1. ALL PLANT STOCK SHALL MEET THE MINIMUM STANDARDS & SPECIFICATIONS DESCRIBED IN THE "AMERICAN STANDARD FOR NURSERY STOCK," LATEST EDITION, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
2. ALL PLANT MATERIAL SHALL BE INSTALLED AS SPECIFIED IN THE VNLA STANDARDIZED LANDSCAPE SPECIFICATIONS, LATEST EDITION.
3. THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE ALL PLANTING SHOWN ON THE DRAWINGS. WHERE DISCREPANCIES EXIST BETWEEN THE PLANS & THE PLANT LIST, THE PLANS SHALL TAKE PRECEDENCE.
3. GROUPINGS OF PLANTS SHALL BE MULCHED IN CONTINUOUS PLANT BEDS.
4. AREAS DISTURBED BY CONSTRUCTION, NOT OTHERWISE WITHIN PLANT BEDS OR COVERED IN SITE CONTRACT, ARE TO BE SODDED OR SEEDED WITH A STATE CERTIFIED TURF-TYPE TALL FESCUE VARIETY SELECTED FROM THE FOLLOWING LIST:

   Biltmore, Bingo, Cochise III, Constitution, Coyote II, Crossfire II, Endeavor, Fidelity, Good-en, Granda, Greenkeeper WAF, Inferno, Kalahari, Magellan, Masterpiece, Onyx, Padre, Picasso, Penn 1901, Quest, Raptor, Rebel Exeda, Rembrandt, Rendition, SR 8250, SR 8300, Tarheel, Titanium, Watchdog, Wolfpack, WPEZE.

5. TREES SUPPORT STAKING IS OPTIONAL FOR TREES THAT ARE 1" CAL. OR 6' HT. OR LESS. ALL TREE STAKING SHALL BE REMOVED AFTER 1–2 GROWING SEASONS.
9. ALL TREES ARE TO BE PLANTED SO TOP OF ROOT BALL IS 3" ABOVE FINISH GRADE.
10. TREE SHALL BE INSTALLED PLUMB & STRAIGHT.
11. PRUNE ALL SUCKERS, RUBBING OR CROSSED BRANCHES, CODOMINANT LEADERS, NARROW CROTCH ANGLES, WATER SPROUTS, BROKEN BRANCHES.
12. DO NOT PRUNE CENTRAL LEADER OR BRANCH TIPS.
13. REMOVE TAGS, LABELS & PLASTIC SLEEVING.
14. DO NOT WRAP TRUNK.
15. IF PLANT MATERIAL IS CONTAINER-GROWN, REMOVE TOP OF WIRE BASKET, OR REMOVE CONTAINER & CUT CIRCLING ROOT; IF FIELD-GROWN, CUT ROPE SURROUNDING BOTTOM OF TREE TRUNK AFTER BACKFILLING BUT BEFORE MULCHING & REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.
16. REMOVE ALL STAKES, STRAPS, WIRES, RUBBER HOSES, ETC. AFTER 1–2 GROWING SEASONS.
17. PLANT SUBSTITUTIONS WILL NOT BE MADE WITHOUT THE WRITTEN CONSENT OF THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE PRIOR TO INSTALLATION.
18. ALL INSTALLED PLANT MATERIAL SHALL BE SUBJECT TO REGULAR MAINTENANCE, INCLUDING FERTILIZATION, PRUNING, REPLACEMENT, INSECT AND DISEASE CONTROL, WATERING, MULCHING, AND WEED CONTROL.
19. CONTRACTORS ARE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO THE BEGINNING OF WORK AND AVOIDING THEM DURING LANDSCAPING OPERATIONS.



3" HT. SHREDDED HARDWOOD MULCH

REMOVE TOP 4" OF SOIL FROM FINISH GRADE W/IN THE GROUND COVER PLANTING BED. BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

EXISTING/FINISH GRADE

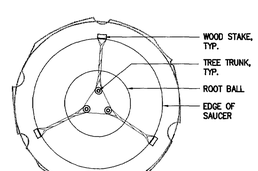
SCARIFY SUBGRADE TO 4" MIN. DEPTH

SECTION VIEW

NOTES:
1. SPACE AS SHOWN ON PLAN OR AS INDICATED ON PLANT CHART.
2. WATER IMMEDIATELY AFTER PLANTING.

GROUND COVER PLANTING BED

NOT TO SCALE



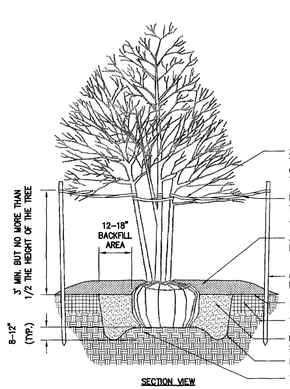
WOOD STAKE, TYP.

TREE TRUNK, TYP.

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING



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BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

MULTI-STEM TREE PLANTING

NOT TO SCALE

PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	8	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	2–1/2" CAL.	B & B	SINGLE STEM
PA	23	PLATNUS X ACERIFOLIA 'BLOODGOOD'	'BLOODGOOD' LONDON PLANETREE	2–1/2" CAL.	B & B	SINGLE STEM
UP	51	ULMUS PARVIFOLIA	LACE BARK ELM	2–1/2" CAL.	B & B	SINGLE STEM
ZS	80	ZELKOVA SERRATA 'GREEN VASE'	'GREEN VASE' JAPANESE ZELKOVA	2–1/2" CAL.	B & B	SINGLE STEM
EVERGREEN TREES:						
CJ	20	CRYPTOMERIA JAPONICA 'YOSHINO'	'YOSHINO' JAPANESE CRYPTOMERIA	8–10' HT.	B & B	SINGLE STEM
IN	18	ILEX x 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	8–10' HT.	B & B	SINGLE STEM
MGL	4	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	'LITTLE GEM' SOUTHERN MAGNOLIA	8–10' HT.	B & B	SINGLE STEM
PIT	34	PINUS TEADA	LOBLOLLY PINE	8–10' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
CB	61	CARPINUS BETULUS 'FASTIGIATA'	'FASTIGIATA' EUROPEAN HORNBEAM	1–1/2" CAL.	B & B	SINGLE STEM
LI	35	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
SHRUBS:						
AG	173	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	18"–24" HT./W.	CONT.	DENSE, FULL
AEH	77	ABELIA x GRANDIFOLIA 'EDWARD GOUCHER'	'EDWARD GOUCHER' GLOSSY ABELIA	18"–24" HT./W.	CONT.	HEDGE–3' O.C.
AGH	95	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	18"–24" HT./W.	CONT.	HEDGE–2.5' O.C.
AJ	5	AUCUBA JAPONICA	JAPANESE AUCUBA	22"–30" HT./W.	CONT.	DENSE, FULL
BD	12	BUDDLEIA DAVIDII 'ROYAL RED'	'ROYAL RED' BUTTERFLY BUSH	22"–30" HT./W.	CONT.	DENSE, FULL
HM	26	HYDRANGEA MACROPHYLLA 'MARIESII VARIEGATA'	'MARIESII VARIEGATA' BIGLEAF HYDRANGEA	22"–30" HT./W.	CONT.	DENSE, FULL
ICB	265	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
ICS	194	ILEX CRENATA 'SOFT TOUCH'	'SOFT TOUCH' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
JC	449	JUNIPERUS CHINENSIS 'SARGENTII'	SARGENT'S JUNIPER	18"–24" HT./W.	CONT.	DENSE, FULL
MC	98	MYRICA CERIFERA	SOUTHERN WAXMYRTLE	18"–24" HT./W.	CONT.	DENSE, FULL
VC	26	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

ROUTE 60 BUFFER PLANT SCHEDULE (125% OF REQUIRED INSTALLED SIZES)

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	12	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	3–1/4" CAL.	B & B	SINGLE STEM
BN	28	BETULA NIGRA 'DURA HEAT'	'DURA HEAT' RIVER BIRCH	3–1/4" CAL.	B & B	3–5 STEMS
PA	1	PLATNUS X ACERIFOLIA 'BLOODGOOD'	'BLOODGOOD' LONDON PLANETREE	3–1/4" CAL.	B & B	SINGLE STEM
EVERGREEN TREES:						
IN	18	ILEX x 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	10–12' HT.	B & B	SINGLE STEM
PIT	38	PINUS TEADA	LOBLOLLY PINE	10–12' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
AGF	27	ACER GINNALA 'FLAME'	'FLAME' AMUR MAPLE	2" CAL.	B & B	SINGLE STEM
LI	40	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	10–12' HT.	B & B	3–5 STEMS
MS	7	MAGNOLIA x 'SHIRAZZ'	'SHIRAZZ' MAGNOLIA	2" CAL.	B & B	SINGLE STEM
PY	45	PRUNUS x YEDOENSIS	YOSHINO CHERRY	2" CAL.	B & B	SINGLE STEM
SHRUBS:						
AG	38	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	22.5"–28" HT./W.	CONT.	DENSE, FULL
BD	16	BUDDLEIA DAVIDII 'ROYAL RED'	'ROYAL RED' BUTTERFLY BUSH	28"–34" HT./W.	CONT.	DENSE, FULL
ICB	518	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	22.5"–28" HT./W.	CONT.	DENSE, FULL
ICG	66	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	22.5"–28" HT./W.	CONT.	DENSE, FULL
VC	42	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	28"–34" HT./W.	CONT.	DENSE, FULL

BUILDING 'D' PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	2	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	2–1/2" CAL.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
LI	3	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
SHRUBS:						
HM	10	HYDRANGEA MACROPHYLLA 'MARIESII VARIEGATA'	'MARIESII VARIEGATA' BIGLEAF HYDRANGEA	22"–30" HT./W.	CONT.	DENSE, FULL
ICG	30	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
VC	6	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

BUILDING 'E' PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
EVERGREEN TREES:						
PIT	3	PINUS TEADA	LOBLOLLY PINE	8–10' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
LI	1	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
SHRUBS:						
ICG	39	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
VC	12	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

BUILDING 'F' PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
SMALL DECIDUOUS TREES:						
LI	5	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
MS	3	MAGNOLIA x 'SHIRAZZ'	'SHIRAZZ' MAGNOLIA	1–1/2" CAL.	B & B	SINGLE STEM
SHRUBS:						
ICG	19	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
MC	10	MYRICA CERIFERA	SOUTHERN WAXMYRTLE	18"–24" HT./W.	CONT.	DENSE, FULL
VC	18	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

JAMES CITY COUNTY LANDSCAPE REQUIREMENTS

AREAS		TREES AND SHRUBS		
LANDSCAPE YARD	COUNTY REQ.	PLANTING RATIO	PLANTS REQUIRED	NEW PLANTS PROVIDED
37' AVE. WIDTH BUFFER Richmond Rd.	84,922 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	213 TREES (40% 86 DECIDUOUS SHADE, 30% 64 ORNAMENTAL, 30% 63 LG EVERGREEN); 637 SHRUBS (30% 223 EVERGREEN)	216 TREES 41 DECIDUOUS SHADE 64 ORNAMENTAL 111 LG EVERGREEN; 680 SHRUBS 522 EVERGREEN
15' SIDE YARD South	2,050 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	6 TREES (40% 2 DECIDUOUS SHADE, 15–20% 1 ORNAMENTAL, 30% 3 LG EVERGREEN); 16 SHRUBS (30% 6 EVERGREEN)	6 TREES 2 DECIDUOUS SHADE 1 ORNAMENTAL 3 LG EVERGREEN; 16 SHRUBS 16 EVERGREEN
REAR YARD (Variable Width)	20,635 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	52 TREES (40% 21 DECIDUOUS SHADE, 15–20% 8 ORNAMENTAL, 30% 15 LG EVERGREEN); 153 SHRUBS (30% 54 EVERGREEN)	52 TREES 8 DECIDUOUS SHADE 8 ORNAMENTAL 44 LG EVERGREEN; 153 SHRUBS 153 EVERGREEN
PARKING LOT	721 SPACES	1 TREE AND 2 SHRUBS: 5 PARKING SPACES	145 TREES (40% 73 LG DECIDUOUS SHADE, 30% 31 EVERGREEN); 289 SHRUBS (30% 102 EVERGREEN)	158 TREES 110 LG DECIDUOUS 4 EVERGREEN; 593 SHRUBS 593 EVERGREEN
10' BLDG PERIMETER (BUILDING 'A')	16,740 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	84 TREES OR 419 SHRUBS	32 TREES AND 259 SHRUBS
10' BLDG PERIMETER (BUILDING 'B')	12,715 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	64 TREES OR 318 SHRUBS	31 TREES AND 178 SHRUBS
10' BLDG PERIMETER (BUILDING 'C')	8,810 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	45 TREES OR 221 SHRUBS	13 TREES AND 157 SHRUBS
10' BLDG PERIMETER (BUILDING 'D')	2,818 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	15 TREES OR 71 SHRUBS	5 TREES AND 46 SHRUBS
10' BLDG PERIMETER (BUILDING 'E')	2,820 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	15 TREES OR 71 SHRUBS	4 TREES AND 51 SHRUBS
10' BLDG PERIMETER (BUILDING 'F')	3,473 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	18 TREES OR 87 SHRUBS	8 TREES AND 47 SHRUBS

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/21/12	Site Plan Amendment	MJR
9	11/15/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape/ Detail Revision Per Client	GRR
7	9/9/11	Revised RW Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

COMMONWEALTH OF VIRGINIA
GAVIN R. ROBEY
Lic. No. 001259
7/25/12
LANDSCAPE ARCHITECT

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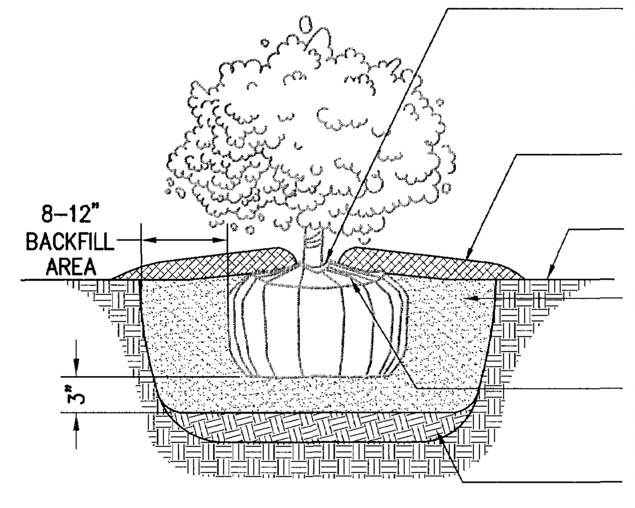
Hampton Roads | Central Virginia | Middle Peninsula

Williamsburg Pottery
Stonehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: NTS	Date: 9/3/2010

Sheet Title:
Landscape Notes & Details

Sheet Number
35



SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE; COVER EDGES OF ROOTBALL W/ SOIL, TAPERING DOWN TO SURROUNDING SOIL LINE; CUT ROPE SURROUNDING CROWN OF ROOTBALL AFTER BACKFILLING BUT BEFORE MULCHING.

4" HT. SAUCER, FILL WITH SHREDDED HARDWOOD MULCH

8–12" BACKFILL AREA

EXISTING/FINISH GRADE

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

3"

CUT CIRCLING ROOTS; SCARIFY SIDES BEFORE PLANTING; REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.

SCARIFY SUBSOIL TO 4" MIN. DEPTH

SECTION VIEW

NOTES:
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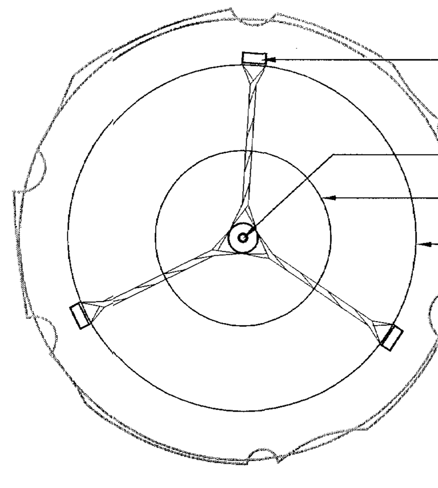
SHRUB PLANTING

NOT TO SCALE



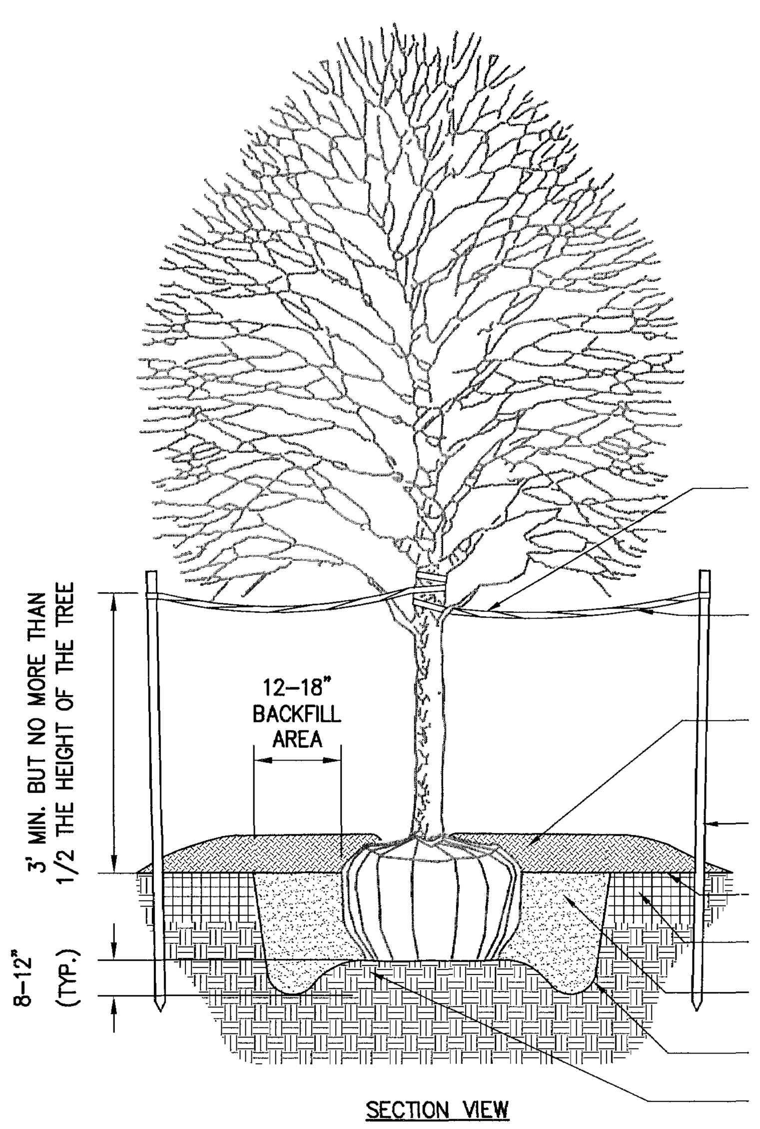
WOOD STAKE, TYP.

TREE TRUNK

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING



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3' MIN. BUT NO MORE THAN 1/2 THE HEIGHT OF THE TREE

12–18" BACKFILL AREA

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6–8' WOOD STAKES, 3 PER TREE. STAKES TO BE SAME HEIGHT, DRIVEN IN ON A SLIGHT ANGLE.

EXISTING/FINISH GRADE

8–12" (TYP.)

TILL 18" WIDTH AT TOP EDGE OF HOLE TO A 8–12" DEPTH

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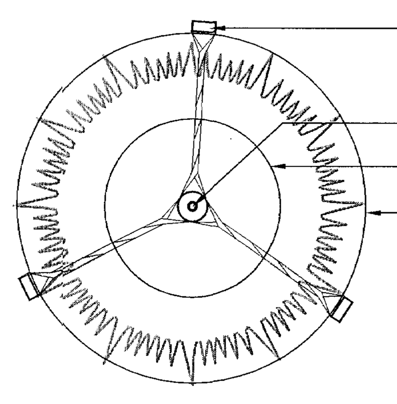
TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

DECIDUOUS TREE PLANTING

NOT TO SCALE



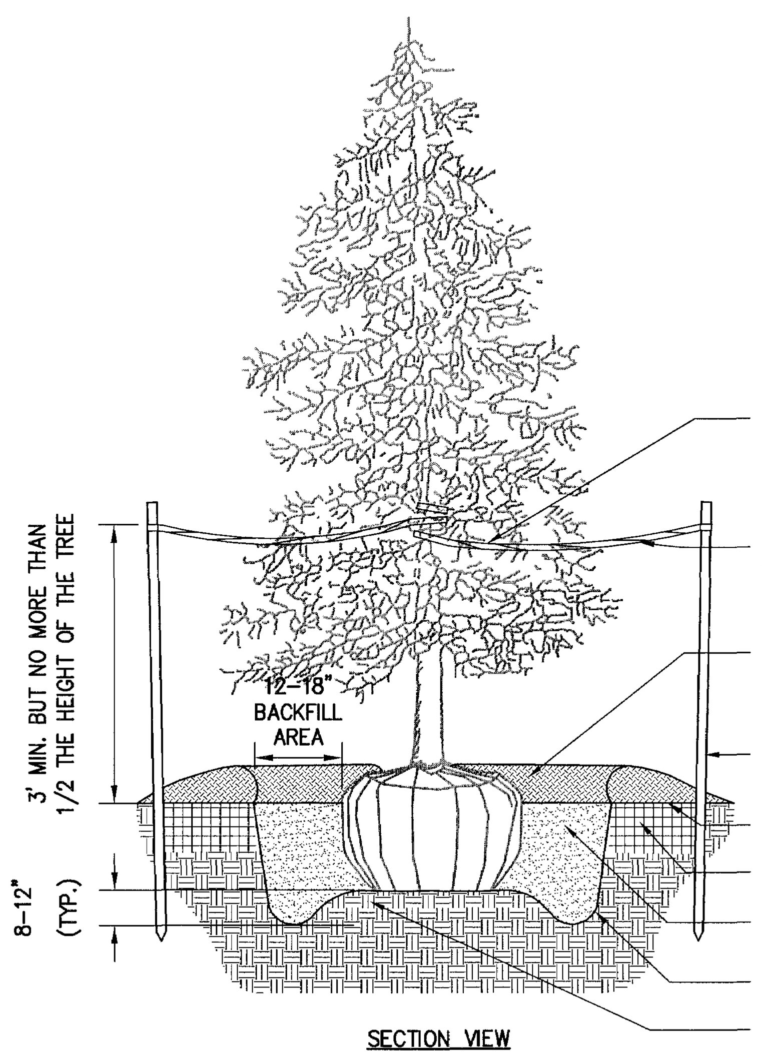
WOOD STAKE, TYP.

TREE TRUNK

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING



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ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

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EVERGREEN TREE PLANTING

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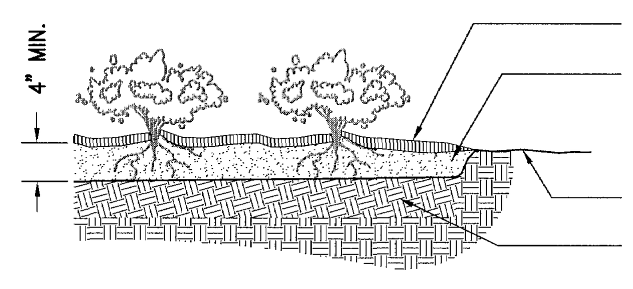
3. GROUPINGS OF PLANTS SHALL BE MULCHED IN CONTINUOUS PLANT BEDS.
4. AREAS DISTURBED BY CONSTRUCTION, NOT OTHERWISE WITHIN PLANT BEDS OR COVERED IN SITE CONTRACT, ARE TO BE SODDED OR SEEDED WITH A STATE CERTIFIED TURF–TYPE TALL FESCUE VARIETY SELECTED FROM THE FOLLOWING LIST:

   Biltmore, Bingo, Cochise III, Constitution, Coyote II, Crossfire II, Endeavor, Fidelity, Good–en, Grande, Greenkeeper WAF, Inferno, Kalahari, Magellan, Masterpiece, Onyx, Padre, Picasso, Penn 1901, Quest, Raptor, Rebel Exeda, Rembrandt, Rendition, SR 8250, SR 8300, Tarheel, Titanium, Watchdog, Wolfpack, WPEZE.

5. TREES SUPPORT STAKING IS OPTIONAL FOR TREES THAT ARE 1" CAL. OR 6' HT. OR LESS. ALL TREE STAKING SHALL BE REMOVED AFTER 1–2 GROWING SEASONS.
9. ALL TREES ARE TO BE PLANTED SO TOP OF ROOT BALL IS 3" ABOVE FINISH GRADE.
10. TREE SHALL BE INSTALLED PLUMB & STRAIGHT.
11. PRUNE ALL SUCKERS, RUBBING OR CROSSED BRANCHES, CODOMINANT LEADERS, NARROW CROTCH ANGLES, WATER SPROUTS, BROKEN BRANCHES.
12. DO NOT PRUNE CENTRAL LEADER OR BRANCH TIPS.
13. REMOVE TAGS, LABELS & PLASTIC SLEEVING.
14. DO NOT WRAP TRUNK.
15. IF PLANT MATERIAL IS CONTAINER–GROWN, REMOVE TOP OF WIRE BASKET, OR REMOVE CONTAINER & CUT CIRCLING ROOT; IF FIELD–GROWN, CUT ROPE SURROUNDING BOTTOM OF TREE TRUNK AFTER BACKFILLING BUT BEFORE MULCHING & REMOVE BURLAP FROM TOP 1/3 OF BALL ROOT.
16. REMOVE ALL STAKES, STRAPS, WIRES, RUBBER HOSES, ETC. AFTER 1–2 GROWING SEASONS.
17. PLANT SUBSTITUTIONS WILL NOT BE MADE WITHOUT THE WRITTEN CONSENT OF THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE PRIOR TO INSTALLATION.
18. ALL INSTALLED PLANT MATERIAL SHALL BE SUBJECT TO REGULAR MAINTENANCE, INCLUDING FERTILIZATION, PRUNING, REPLACEMENT, INSECT AND DISEASE CONTROL, WATERING, MULCHING, AND WEED CONTROL.
19. CONTRACTORS ARE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO THE BEGINNING OF WORK AND AVOIDING THEM DURING LANDSCAPING OPERATIONS.



4" MIN.

3" HT. SHREDDED HARDWOOD MULCH

REMOVE TOP 4" OF SOIL FROM FINISH GRADE W/IN THE GROUND COVER PLANTING BED. BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL. FINISH BACKFILLING; TAMP LIGHTLY

EXISTING/FINISH GRADE

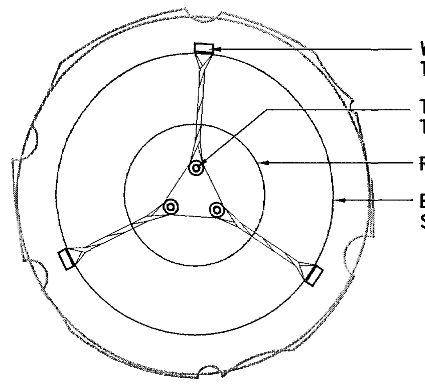
SCARIFY SUBGRADE TO 4" MIN. DEPTH

SECTION VIEW

NOTES:
1. SPACE AS SHOWN ON PLAN OR AS INDICATED ON PLANT CHART.
2. WATER IMMEDIATELY AFTER PLANTING.

GROUND COVER PLANTING BED

NOT TO SCALE



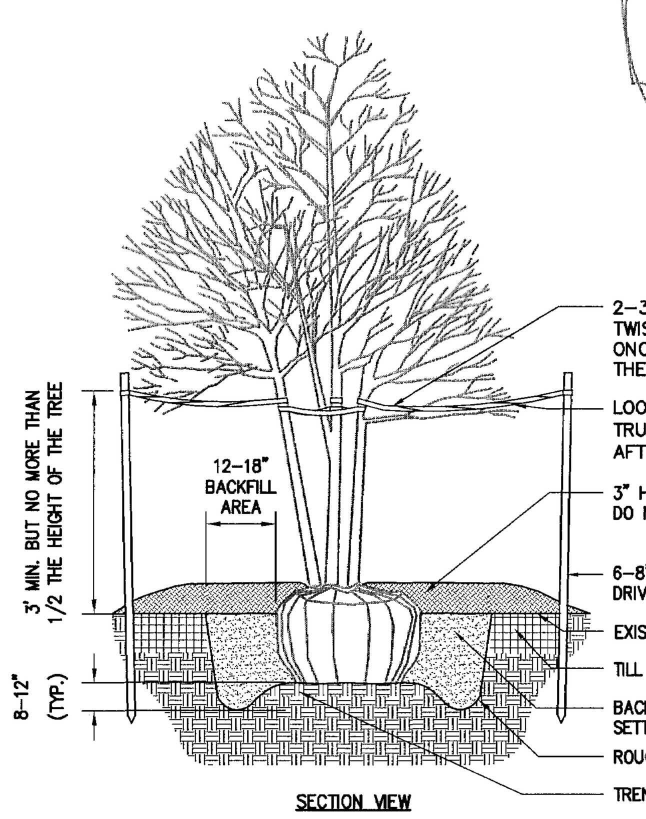
WOOD STAKE, TYP.

TREE TRUNK, TYP.

ROOT BALL

EDGE OF SAUCER

PLAN VIEW FOR STAKING



2–3" WIDE WEBBING OR POLYETHYLENE STRAPS TWISTED LOOSELY AT THEIR MIDPOINT AND WRAPPED ONCE AROUND THE TREE TRUNK FLAT. ATTACHED TO THE STAKE WITH STAPLES.

LOOSELY TWIST EACH STRAP TO ALLOW FOR 4–6" OF TRUNK FLEXING (REMOVE ALL STRAPS AND STAKING AFTER 1–2 FULL GROWING SEASONS)

3' MIN. BUT NO MORE THAN 1/2 THE HEIGHT OF THE TREE

12–18" BACKFILL AREA

3" HT. SHREDDED HARDWOOD MULCH; KEPT AWAY FROM TRUNK. DO NOT COVER THE ROOT COLLAR WITH TOP SOIL OR MULCH.

6–8' WOOD STAKES, 3 PER TREE. STAKES TO BE SAME HEIGHT, DRIVEN IN ON A SLIGHT ANGLE.

EXISTING/FINISH GRADE

8–12" (TYP.)

TILL 18" WIDTH AT TOP EDGE OF HOLE TO A 8–12" DEPTH

BACKFILL W/ NATIVE TOP SOIL; PARTIALLY BACKFILL, WATER TO SETTLE SOIL; FINISH BACKFILLING; TAMP LIGHTLY

ROUGHEN HOLE WALLS AND BOTTOM

TRENCH AROUND PERIMETER OF MOUND TO DEPTH SHOWN.

SECTION VIEW

MULTI-STEM TREE PLANTING

NOT TO SCALE

PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	8	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	2–1/2" CAL.	B & B	SINGLE STEM
PA	23	PLATNUS X ACERIFOLIA 'BLOODGOOD'	'BLOODGOOD' LONDON PLANETREE	2–1/2" CAL.	B & B	SINGLE STEM
UP	51	ULMUS PARVIFOLIA	LACE BARK ELM	2–1/2" CAL.	B & B	SINGLE STEM
ZS	80	ZELKOVA SERRATA 'GREEN VASE'	'GREEN VASE' JAPANESE ZELKOVA	2–1/2" CAL.	B & B	SINGLE STEM
EVERGREEN TREES:						
CJ	20	CRYPTOMERIA JAPONICA 'YOSHINO'	'YOSHINO' JAPANESE CRYPTOMERIA	8–10' HT.	B & B	SINGLE STEM
IN	18	ILEX x 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	8–10' HT.	B & B	SINGLE STEM
MGL	4	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	'LITTLE GEM' SOUTHERN MAGNOLIA	8–10' HT.	B & B	SINGLE STEM
PIT	34	PINUS TEADA	LOBLOLLY PINE	8–10' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
CB	61	CARPINUS BETULUS 'FASTIGIATA'	'FASTIGIATA' EUROPEAN HORNBEAM	1–1/2" CAL.	B & B	SINGLE STEM
LI	35	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
SHRUBS:						
AG	173	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	18"–24" HT./W.	CONT.	DENSE, FULL
AEH	77	ABELIA x GRANDIFOLIA 'EDWARD GOUCHER'	'EDWARD GOUCHER' GLOSSY ABELIA	36" HT.	CONT.	HEDGE–3' O.C.
AGH	95	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	18"–24" HT./W.	CONT.	HEDGE–2.5' O.C.
AJ	5	AUCUBA JAPONICA	JAPANESE AUCUBA	22"–30" HT./W.	CONT.	DENSE, FULL
BD	12	BUDDLEIA DAVIDII 'ROYAL RED'	'ROYAL RED' BUTTERFLY BUSH	22"–30" HT./W.	CONT.	DENSE, FULL
HM	26	HYDRANGEA MACROPHYLLA 'MARIESII VARIEGATA'	'MARIESII VARIEGATA' BIGLEAF HYDRANGEA	22"–30" HT./W.	CONT.	DENSE, FULL
ICB	265	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
ICS	194	ILEX CRENATA 'SOFT TOUCH'	'SOFT TOUCH' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
JC	449	JUNIPERUS CHINENSIS 'SARGENTII'	SARGENT'S JUNIPER	18"–24" HT./W.	CONT.	DENSE, FULL
MC	98	MYRICA CERIFERA	SOUTHERN WAXMYRTLE	18"–24" HT./W.	CONT.	DENSE, FULL
VC	26	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

ROUTE 60 BUFFER PLANT SCHEDULE (125% OF REQUIRED INSTALLED SIZES)

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	12	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	3–1/4" CAL.	B & B	SINGLE STEM
BN	28	BETULA NIGRA 'DURA HEAT'	'DURA HEAT' RIVER BIRCH	3–1/4" CAL.	B & B	3–5 STEMS
PA	1	PLATNUS X ACERIFOLIA 'BLOODGOOD'	'BLOODGOOD' LONDON PLANETREE	3–1/4" CAL.	B & B	SINGLE STEM
EVERGREEN TREES:						
IN	44	ILEX x 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	10–12' HT.	B & B	SINGLE STEM
PIT	12	PINUS TEADA	LOBLOLLY PINE	10–12' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
AGF	27	ACER GINNALA 'FLAME'	'FLAME' AMUR MAPLE	2" CAL.	B & B	SINGLE STEM
LI	40	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	10–12' HT.	B & B	3–5 STEMS
MS	7	MAGNOLIA x 'SHIRAZZ'	'SHIRAZZ' MAGNOLIA	2" CAL.	B & B	SINGLE STEM
PY	45	PRUNUS x YEDOENSIS	YOSHINO CHERRY	2" CAL.	B & B	SINGLE STEM
SHRUBS:						
AG	38	ABELIA x GRANDIFOLIA 'LITTLE RICHARD'	'LITTLE RICHARD' GLOSSY ABELIA	24"–30" HT./W.	CONT.	DENSE, FULL
AEH	509	ABELIA x GRANDIFOLIA 'EDWARD GOUCHER'	'EDWARD GOUCHER' GLOSSY ABELIA	36" HT.	CONT.	HEDGE–3' O.C.
BD	16	BUDDLEIA DAVIDII 'ROYAL RED'	'ROYAL RED' BUTTERFLY BUSH	28"–34" HT./W.	CONT.	DENSE, FULL
ICB	9	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	24"–30" HT./W.	CONT.	DENSE, FULL
ICG	66	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	24"–30" HT./W.	CONT.	DENSE, FULL
VC	42	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	28"–34" HT./W.	CONT.	DENSE, FULL

BUILDING 'D' PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
LARGE DECIDUOUS TREES:						
AR	2	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	2–1/2" CAL.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
LI	3	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
SHRUBS:						
HM	10	HYDRANGEA MACROPHYLLA 'MARIESII VARIEGATA'	'MARIESII VARIEGATA' BIGLEAF HYDRANGEA	22"–30" HT./W.	CONT.	DENSE, FULL
ICG	30	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
VC	6	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

BUILDING 'E' PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
EVERGREEN TREES:						
PIT	3	PINUS TEADA	LOBLOLLY PINE	8–10' HT.	B & B	SINGLE STEM
SMALL DECIDUOUS TREES:						
LI	1	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
SHRUBS:						
ICG	39	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
VC	12	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

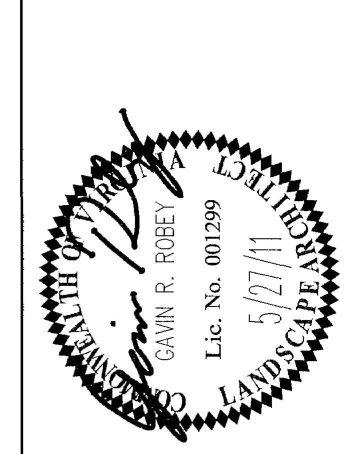
BUILDING 'F' PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
SMALL DECIDUOUS TREES:						
LI	5	LAGERSTROEMIA INDICA 'CATAWBA'	'CATAWBA' CRAPEMYRTLE	8–10' HT.	B & B	3–5 STEMS
MS	3	MAGNOLIA x 'SHIRAZZ'	'SHIRAZZ' MAGNOLIA	1–1/2" CAL.	B & B	SINGLE STEM
SHRUBS:						
ICG	19	ILEX CRENATA 'GREEN LUSTER'	'GREEN LUSTER' JAPANESE HOLLY	18"–24" HT./W.	CONT.	DENSE, FULL
MC	10	MYRICA CERIFERA	SOUTHERN WAXMYRTLE	18"–24" HT./W.	CONT.	DENSE, FULL
VC	18	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	22"–30" HT./W.	CONT.	DENSE, FULL

JAMES CITY COUNTY LANDSCAPE REQUIREMENTS

AREAS		TREES AND SHRUBS		
LANDSCAPE YARD	COUNTY REQ.	PLANTING RATIO	PLANTS REQUIRED	NEW PLANTS PROVIDED
37' AVE. WIDTH BUFFER Richmond Rd.	84,922 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	213 TREES (40% 86 DECIDUOUS SHADE; 15–25% 32 ORNAMENTAL; 35% 75 LG EVERGREEN) 637 SHRUBS (35% 223 EVERGREEN)	216 TREES (41 DECIDUOUS SHADE; 119 ORNAMENTAL; 56 LG EVERGREEN) 680 SHRUBS (622 EVERGREEN)
15' SIDE YARD South	2,050 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	6 TREES (40% 3 DECIDUOUS SHADE; 15–25% 1 ORNAMENTAL; 35% 3 LG EVERGREEN) 16 SHRUBS (35% 6 EVERGREEN)	6 TREES (0 DECIDUOUS SHADE; 0 ORNAMENTAL; 6 LG EVERGREEN) 16 SHRUBS (16 EVERGREEN)
REAR YARD (Variable Width)	20,635 SF	1 TREE AND 3 SHRUBS: 400 SQ.FT.	52 TREES (40% 21 DECIDUOUS SHADE; 15–25% 6 ORNAMENTAL; 35% 19 LG EVERGREEN) 153 SHRUBS (35% 54 EVERGREEN)	52 TREES (8 DECIDUOUS SHADE; 8 ORNAMENTAL; 44 LG EVERGREEN) 153 SHRUBS (153 EVERGREEN)
PARKING LOT	721 SPACES	1 TREE AND 2 SHRUBS: 5 PARKING SPACES	145 TREES (50% 73 LG DECIDUOUS; 35% 51 EVERGREEN) 289 SHRUBS (35% 102 EVERGREEN)	158 TREES (150 LG DECIDUOUS; 4 EVERGREEN) 593 SHRUBS (593 EVERGREEN)
10' BLDG PERIMETER (BUILDING 'A')	16,740 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	84 TREES OR 419 SHRUBS	32 TREES AND 259 SHRUBS
10' BLDG PERIMETER (BUILDING 'B')	12,715 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	64 TREES OR 318 SHRUBS	31 TREES AND 178 SHRUBS
10' BLDG PERIMETER (BUILDING 'C')	8,810 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	45 TREES OR 221 SHRUBS	13 TREES AND 157 SHRUBS
10' BLDG PERIMETER (BUILDING 'D')	2,818 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	15 TREES OR 71 SHRUBS	5 TREES AND 46 SHRUBS
10' BLDG PERIMETER (BUILDING 'E')	2,820 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	15 TREES OR 71 SHRUBS	4 TREES AND 51 SHRUBS
10' BLDG PERIMETER (BUILDING 'F')	3,473 SF	1 TREE OR 5 SHRUBS: 200 SQ.FT	18 TREES OR 87 SHRUBS	8 TREES AND 47 SHRUBS

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR
4	3/4/11	Site Plan Amendment for Changes to Master Plan	MJR
4	2/23/11	Revised for VDOT & JCSA Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR



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Stonehouse District James City County Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: NTS	Date: 9/3/2010
Sheet Title:	Landscape Notes & Details
Sheet Number	35

FIXTURE TYPES 'B1', 'B2' & 'B3'

McGRAW-EDISON®

DESCRIPTION

Galleria's beauty and versatility make it an excellent choice for roadway and general area lighting applications. An aesthetic reveal in the formed aluminum housing gives the Galleria a distinctive look while a variety of mounting options and lamp wattages provide maximum flexibility.

Galleria's superior light distributions makes it the optimum choice for almost any small, medium or large area lighting application.

Catalog #		Type
Project		
Comments		Date
Prepared by		

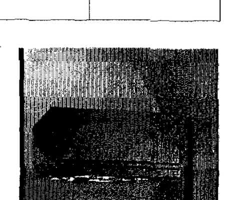
SPECIFICATION FEATURES

Construction
HOUSING: Formed aluminum housing with stamped reveal has interior-welded seams for structural integrity and is finished in premium TGIC polyester powder coat. U.L. listed and CSA certified for wet locations. DOOR: Formed aluminum door has heavy-duty hinges, captive retaining screws and is finished in premium TGIC polyester powder coat. (Spider mount unit has steel door.)

Electrical
BALLAST TRAY: Ballast tray is hard-mounted to housing interior for cooler operation.

Optical
REFLECTOR: Choice of 14 high efficiency optical systems utilizing horizontal and vertical lamp orientations. Optional high efficiency segmented optical systems constructed of premium 95% reflective anodized aluminum sheet. Optical segments are rigidly mounted inside a thick gauge aluminum housing for superior protection. All segment faces are clean of rivet heads, tabs or other means of attachment which may cause streaking in the light distribution. Standard with mogul-base socket. All optical modules feature quick disconnect wiring plugs and are field rotatable in 90° increments. LENS: Convex tempered glass lens or flat glass.

Mounting
Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during assembly. Specify arm-included mounting for contractor-friendly single carton packaging of housing and arm.



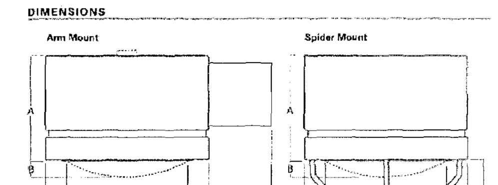
GSS/GSM/GSL
GALLERIA SQUARE

70 - 1000W
Pulse Start Metal Halide
High Pressure Sodium
Metal Halide

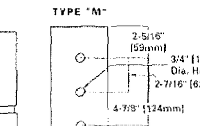
ARCHITECTURAL AREA LUMINAIRE

DARK SKY COMPLIANT FCO
NOTE: In all flat glass configurations only

DIMENSIONS



ARM DRILLING



Fixture	A	B	C	D	E	F
GSS	9-1/4" 235mm	1-1/2" 38mm	12-7/8" 327mm	15-5/8" 397mm	6" or 9" 152mm or 229mm	13-1/4" 337mm
GSM	11" 279mm	3-1/2" 89mm	19-1/4" 489mm	21-3/4" 552mm	6" or 14" 152mm or 356mm	15" or 16" 381mm or 406mm
GSL	14-1/2" 368mm	4-1/4" 108mm	25-7/8" 657mm	27" 686mm	6" or 14" 152mm or 356mm	18-3/4" or 19-3/4" 476mm or 502mm

NOTE: Top cap used on GSM with 1000W flat glass vertically lamped optics only.

WATTAGE TABLE

Fixture	Lamp Type	Wattage
GSS (Galleria Small)	Pulse Start Metal Halide (MP)	70, 100, 150W
	High Pressure Sodium (HPS)	70, 100, 150W
	Metal Halide (MH)	175W
GSM (Galleria Medium)	Pulse Start Metal Halide (MP)	70, 100, 150, 175, 200, 250, 320, 350, 400, 450, 750, 875, 1000W
	High Pressure Sodium (HPS)	70, 100, 150, 250, 400, 750, 1000W
	Metal Halide (MH)	175, 250, 400, 1000W
GSL (Galleria Large)	Pulse Start Metal Halide (MP)	250, 320, 350, 400, 450, 750, 1000W
	High Pressure Sodium (HPS)	250, 400, 750, 1000W
	Metal Halide (MH)	250, 400, 1000W

ENERGY DATA

CWA Ballast Input Watts
150W MP HPF (185 Watts)
175W MP HPF (198 Watts)
250W MP HPF (283 Watts)
250W HPS HPF (295 Watts)
400W MP HPF (452 Watts)
400W HPS HPF (457 Watts)
750W MP HPF (820 Watts)
1000W MH HPF (1080 Watts)
1000W HPS HPF (1100 Watts)

EPA
Effective Projected Area: (Sq. Ft.)
[Without Arm]
GSS: 1.20 GSM: 2.40 GSL: 3.90
[Spider Mount]
GSS: 1.63 GSM: 2.86 GSL: 4.45

SHIPPING DATA
Approximate Net Weight:
36 lbs. (16 kgs.)
79 lbs. (36 kgs.)
88 lbs. (40 kgs.)

COOPER Lighting
www.cooperlighting.com

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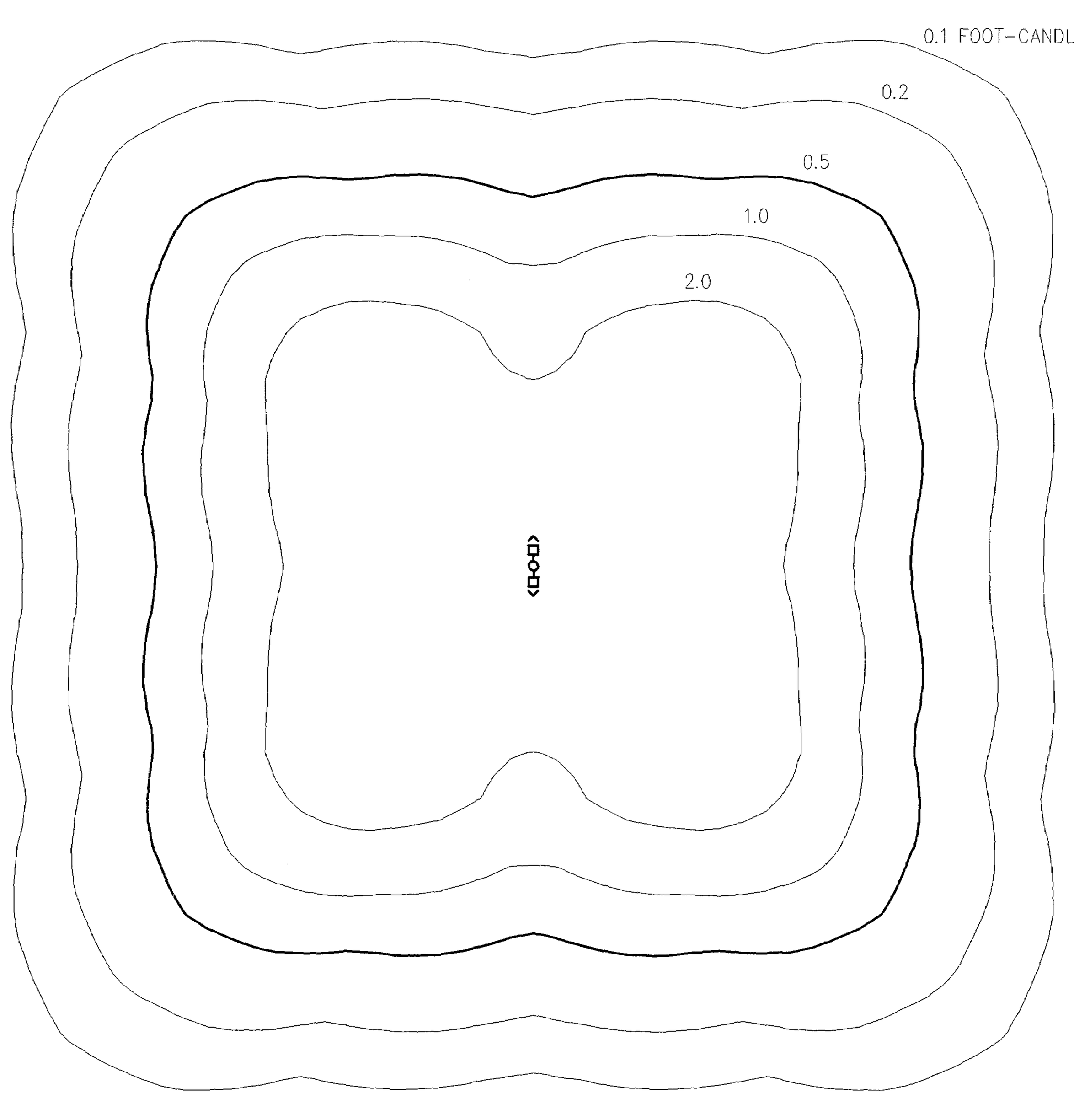
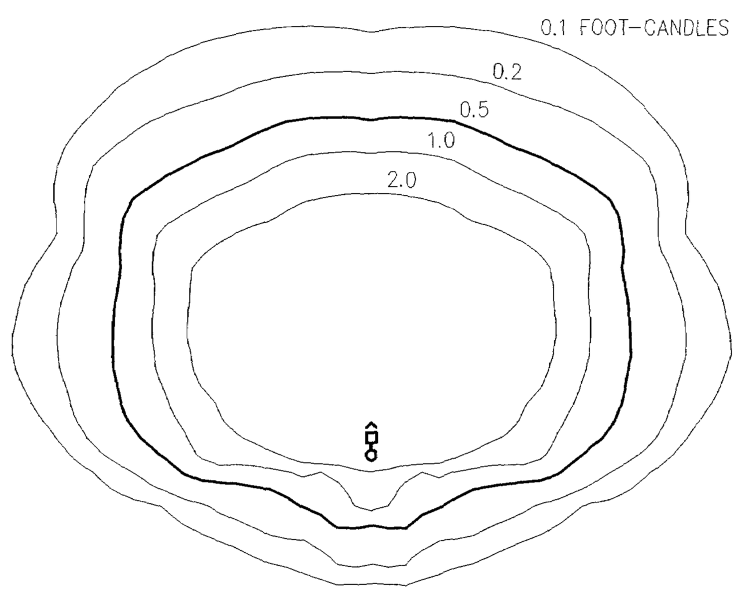


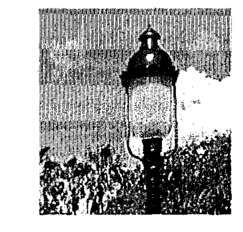
TYPE 'B1' ISO FOOT-CANDLE DIAGRAM



TYPE 'B2' ISO FOOT-CANDLE DIAGRAM

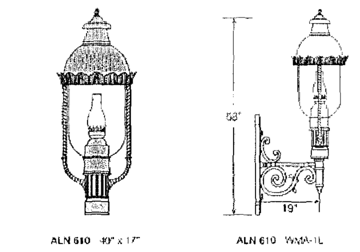
FIXTURE TYPES 'A1' & 'A2'

OPTION

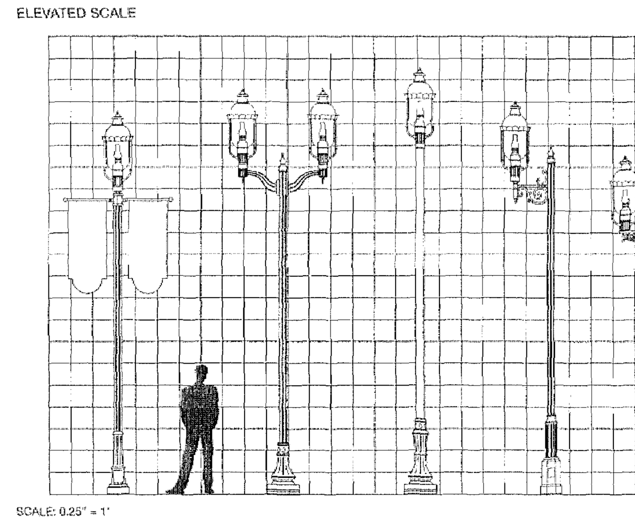


Lightly diffused lens to conceal fixture interior.

DIMENSIONS



ELEVATED SCALE



SCALE: 0.25" = 1'

HEAD	ALN 610	2-ALN 610	ALN 610	2-ALN 610	ALN 610
ARM	•	2-TRA6U	•	TRA1L	WMA3
POLE	DB1-4F14	DB3-4F14	DB4-4R16	DB8-4F14	•
OPTIONS	BBD4-24	•	•	•	•

ARCHITECTURAL AREA LIGHTING 3

Dundee page 2 of 4 DATE TYPE

Fixture	Lamp/Ballast	Color	Options
1	2	3	4

1 FIXTURE

- ❑ ALN 610 H2 — Type 2 horizontal cutoff reflector. Clear acrylic lens.
- ❑ ALN 610 H3 — Type 3 horizontal cutoff reflector. Clear acrylic lens.
- ❑ ALN 610 H4 — Type 4 horizontal cutoff reflector. Clear acrylic lens.
- ❑ ALN 610 H5 — Type 5 horizontal cutoff reflector. Clear acrylic lens.

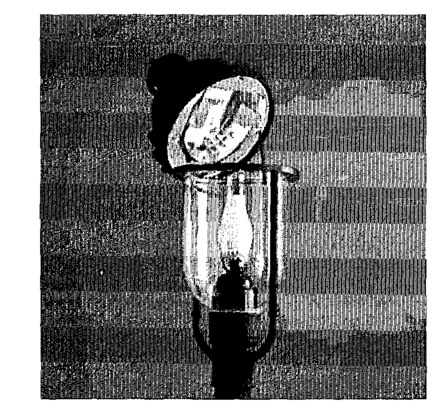
2 LAMP/BALLAST

- ❑ CF — Compact fluorescent, electronic 120 thru 277 volt ballast. -18° C starting temperature. Use 4-pin 26, 32 or 42 watt lamp. Specify wattage.
- ❑ PL57 — 57 watt compact fluorescent 120 thru 277 volt ballast. Use GE F57QBX lamp. -10°C minimum start temperature.
- ❑ PL70 — 70 watt compact fluorescent 120 thru 277 volt ballast. Use GE F70QBX lamp. -10°C minimum start temperature.
- ❑ 50MH — 50 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ❑ 70MH — 70 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ❑ 100MH — 100 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ❑ 150MH — 150 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ❑ 175MH — 175 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ❑ 70HPS — 70 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ❑ 100HPS — 100 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ❑ 150HPS — 150 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.

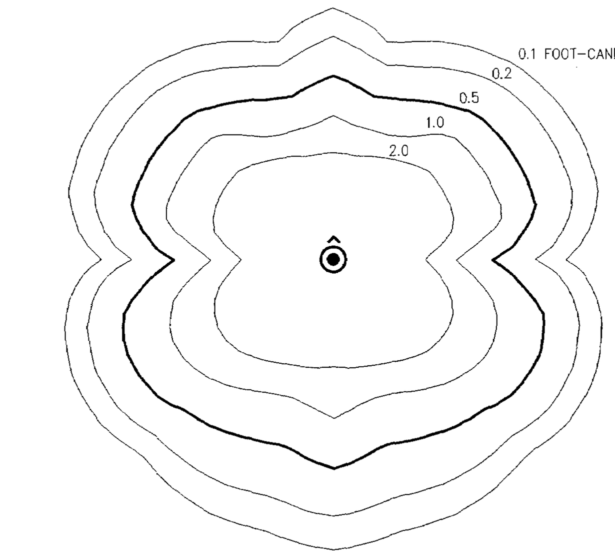
All ballasts are factory wired for 277 volt, unless specified. Lamps not included.
All ballasts are EISA compliant

SOLD TO	PO #	JOB NAME	Approvals

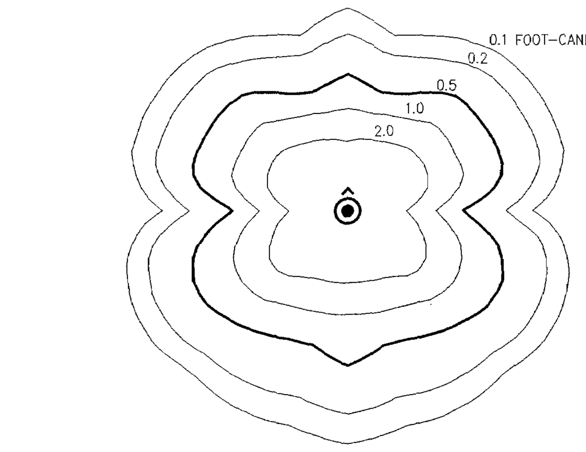
Architectural Area Lighting
16555 East Gale Ave. I City of Industry I CA 91745
P 626.968.5666 I F 626.369.2695 I www.aal.net
Design patents, Copyright © 2010 Rev 06/2010



HORIZONTALLY-MOUNTED BULB, FULLY HOUSED UP IN THE FIXTURE CAP

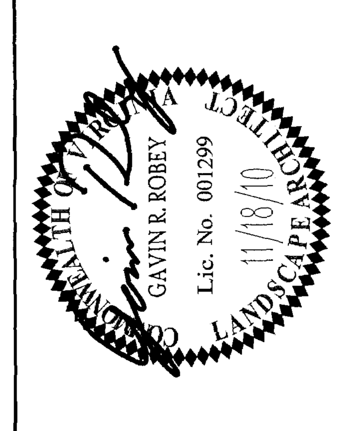


TYPE 'A1' ISO FOOT-CANDLE DIAGRAM

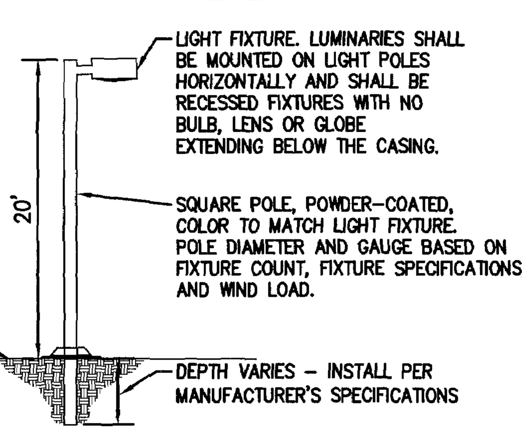


TYPE 'A2' ISO FOOT-CANDLE DIAGRAM

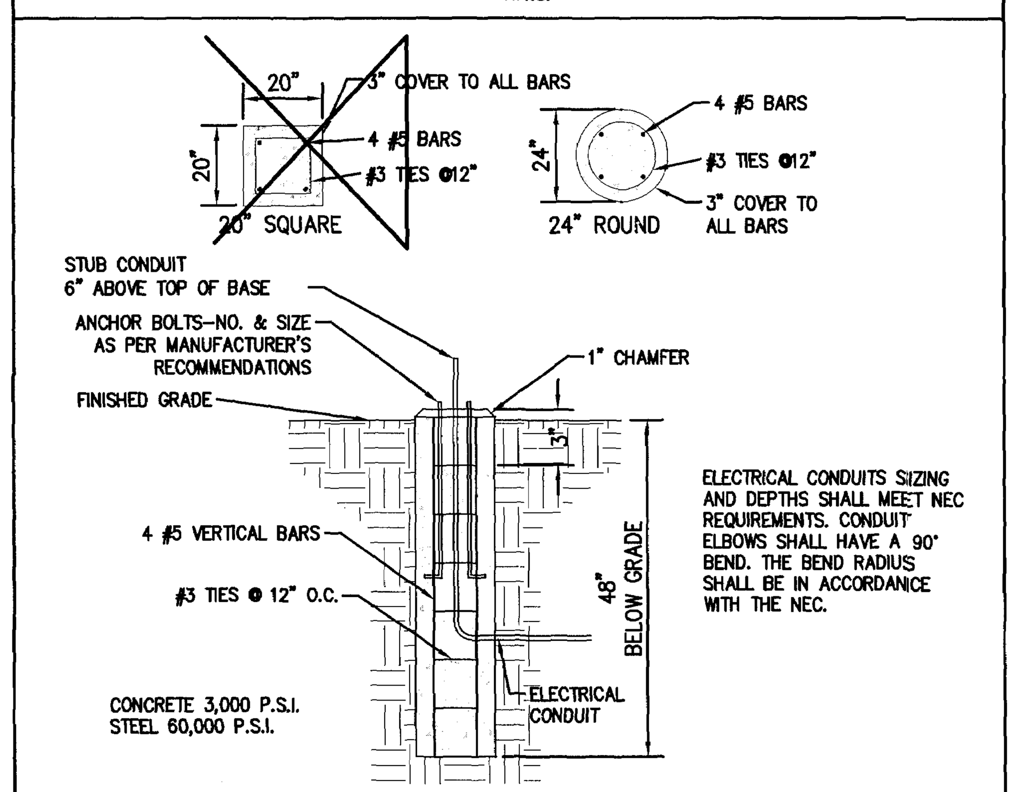
	12/15/10	Revised for Staff Comments	MJR
3	12/15/10	Revised for Staff Comments	MJR
2	11/18/10	Revised for Staff Comments	MJR
1	10/20/10	Revised for Staff Comments	MJR
Rev.	Date	Description	Revised By



NOTE:
CONTRACTOR SHALL ENSURE COMPATIBILITY OF LIGHT FIXTURE, POLE, AND BASE.

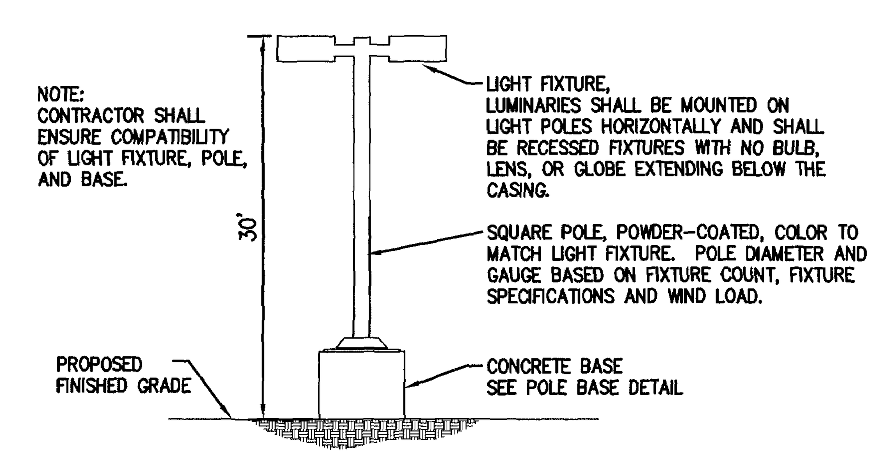


TYPE 'B2' DIRECT-BURY SQUARE POLE DETAIL
N.T.S.

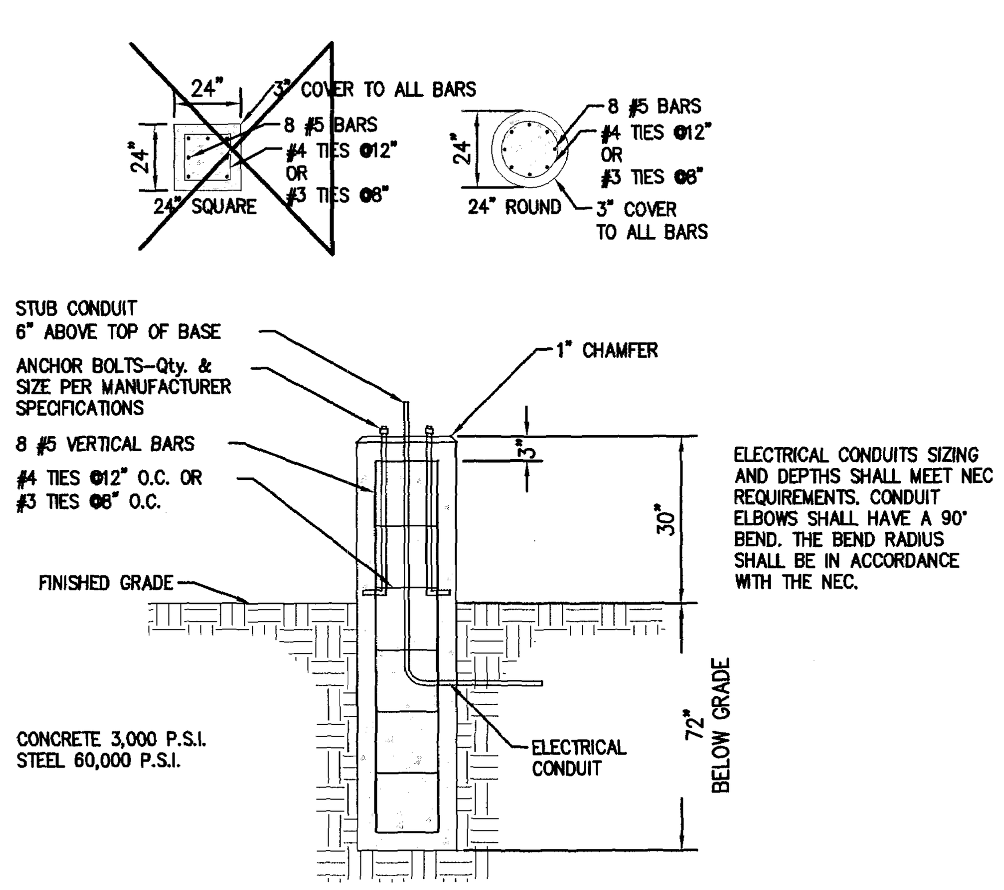


TYPE 'A1' & 'A2' FLUSH 16-25' POLE BASE DETAIL
N.T.S.

NOTE:
CONTRACTOR SHALL ENSURE COMPATIBILITY OF LIGHT FIXTURE, POLE, AND BASE.



TYPE 'B1' SQUARE POLE DETAIL
N.T.S.



TYPE 'B1' 30-35' POLE BASE DETAIL
N.T.S

FIXTURE TYPE 'C1'

McGRAW-EDISON®

DESCRIPTION

The IMPACT Elite Quarter Sphere cutoff wall luminaire makes an ideal complement to site design. Rugged construction and full cutoff classified optics provide facade and security lighting for light restricted zones surrounding schools, office complexes, apartments, and recreational facilities. U.L. and cUL Listed for wet locations in down mount applications and damp locations in up mounted applications.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

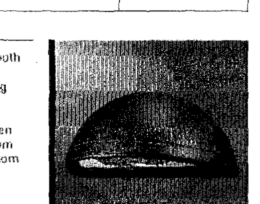
Construction
Two-piece die-cast aluminum housing and removable hinged door frame nests securely for precise tolerance control and repeatability. Hinged door frame inset for clean mating with housing surface and secured via two (2) captive stainless steel fasteners. Optional tamper resistant torx head fasteners [TR] offer vandal resistant access to the electrical compartment. 1/8" clear, heat and impact resistant tempered flat glass lens combined with molded silicone gasket to seal the integrated optical assembly while ensuring peak optical performance.

Electrical
Integral hard mount electrical components are secured and grounded within the die-cast aluminum housing for optimal heat sinking and extended component life. Minimum starting temperatures are -40°C (-40°F) for HPS and -30°C (-22°F) for MP. Compact fluorescent luminaires feature electronic universal 120-277V high efficiency 50/60Hz ballast with -18°C (-0°F) minimum starting. Available in 50-175W HID or 26-84W CF.

Optical
Premium anodized 95% reflective aluminum optical assemblies provide high efficiency Type II distribution. Optional silk screened house side flat glass shield provides decreased wall brightness. All Impact Elite Wall Series luminaires classify as IESNA full cutoff in downlight applications.

Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" j-box or wall with the Impact Elite "Hook-N-Lock" system for fast installation and mounting in both traditional downlighting [wet location] or inverted uplighting [damp location] mounting positions. Secured via two (2) captive corrosion resistant allen head set screws concealed from view, but accessible from bottom of fixture.

Finish
Housing and door are protected with 5-stage premium TGIC polyester powder coat paint. Premium TGIC powder coat finishes withstand extreme climate changes while providing optimal color and gloss retention over the fixture's installed life. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult McGraw-Edison Architectural Colors Brochure for complete selection.



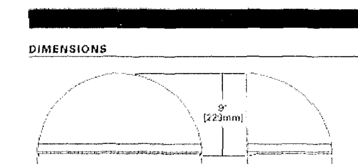
ISS
IMPACT ELITE QUARTER SPHERE

50 - 175W
Pulse Start Metal Halide
Metal Halide
High Pressure Sodium
26 - 84W
Compact Fluorescent

FULL CUTOFF WALL MOUNT LUMINAIRE

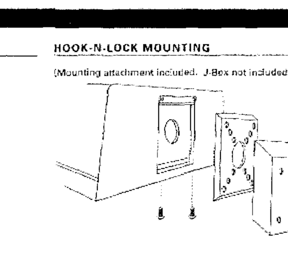
DARK SKY COMPLIANT FCO

DIMENSIONS



HOOK-N-LOCK MOUNTING

(Mounting attachment included. J-Box not included.)



TECHNICAL DATA
UL1598 Listed, CUL Listed
25°C Maximum Ambient Temperature
External Supply Wiring 90°C Minimum
Down Mounted—Wet Location
Up Mounted—Damp Location

ENERGY DATA
High Reactance Ballast Input Watts
50W HPS HPF (66 Watts)
50W MH HPF (72 Watts)
70W HPS HPF (91 Watts)
70W MH HPF (90 Watts)
100W HPS HPF (130 Watts)
100W MH HPF (129 Watts)
150W HPS HPF (190 Watts)
150W MH HPF (185 Watts)

CWA Ballast Input Watts
175W MH HPF (210 Watts)

Electronic Ballast Input Watts
26W CF HPF (29 Watts)
32W CF HPF (36 Watts)
42W CF HPF (46 Watts)
57W CF HPF (55 Watts)

SHIPPING DATA
Approximate Net Weight:
18 lbs. (8 kgs.)

IMPACT™

COOPER Lighting
www.cooperlighting.com

ADH100103
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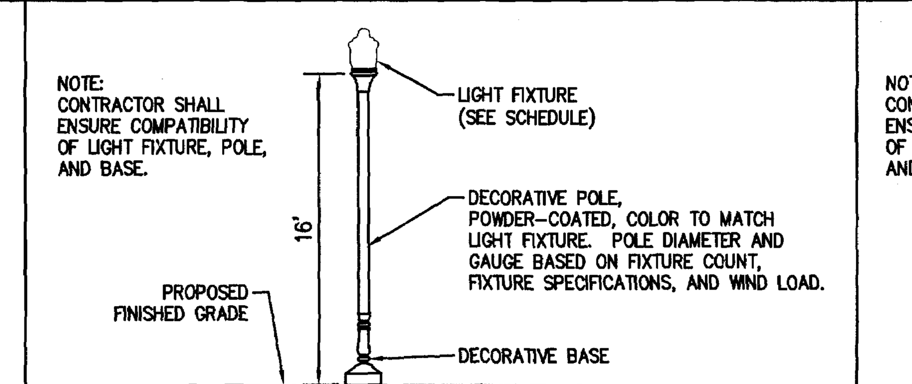
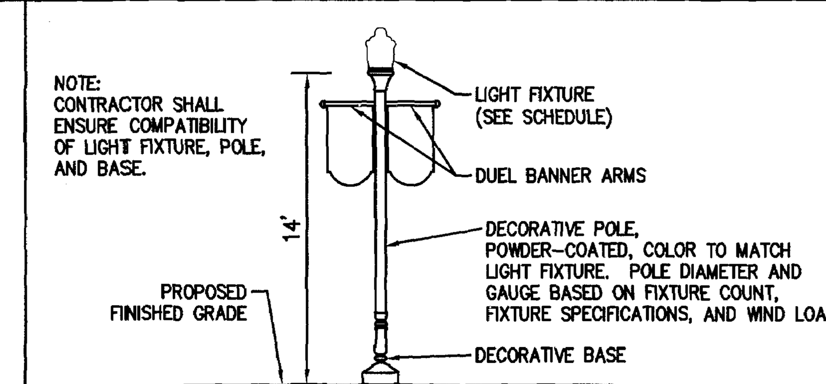
NOTE:
CONTRACTOR SHALL ENSURE COMPATIBILITY OF LIGHT FIXTURE, POLE, AND BASE.

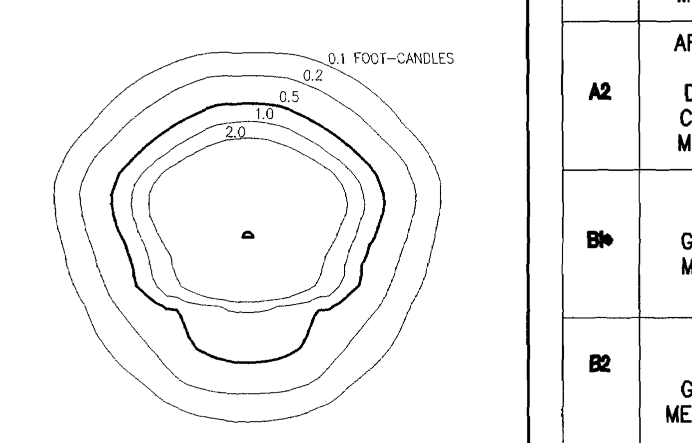


TYPE 'A1' POLE DETAIL
N.T.S.

NOTE:
CONTRACTOR SHALL ENSURE COMPATIBILITY OF LIGHT FIXTURE, POLE, AND BASE.



TYPE 'A2' POLE DETAIL
N.T.S.



TYPE 'C1' ISO FOOT-CANDLE DIAGRAM

LIGHTING SCHEDULE

KEY	FIXTURE TYPE	MOUNTING HEIGHT	POLE TYPE/ MOUNTING INSTRUCTIONS	FIXTURES PER POLE	TOTAL FIXTURES
A1	ARCHITECTURAL AREA LIGHTING ALN610H5–150MH–BLK DUNDEE TYPE V HORIZONTAL CUTOFF REFLECTOR, 150 WATT, METAL HALIDE; COLOR: BLACK	16'	ARCHITECTURAL AREA LIGHTING DB1–4R16 4" ROUND 16' HIGH POLE WITH DECORATIVE BASE	1	22
A2	ARCHITECTURAL AREA LIGHTING ALN610H5–70MH–BLK DUNDEE TYPE V HORIZONTAL CUTOFF REFLECTOR, 70 WATT, METAL HALIDE; COLOR: BLACK	14'	ARCHITECTURAL AREA LIGHTING DB1–4R14–BBD4–24 4" ROUND 14' HIGH POLE WITH DECORATIVE BASE; INCLUDE DUEL BANNER ARMS	1	39
B1*	COOPER: McGRAW–EDISON GSM–400W–MP–AS–FG–BK GALLERIA SQUARE, 400 WATT, METAL HALIDE, AREA SQUARE REFLECTOR; COLOR: BLACK	30'	COOPER SSA SQUARE STRAIGHT ALUMINUM POLE*	2	28
B2	COOPER: McGRAW–EDISON GSM–400W–MP–SL–FG–BK GALLERIA SQUARE, 400 WATT, METAL HALIDE, SPILL ELIMINATOR REFLECTOR; COLOR: BLACK	20'	COOPER SSA SQUARE STRAIGHT ALUMINUM POLE (DIRECT–BURY)	1	16
C1	COOPER: McGRAW–EDISON ISS–150W–MP–BK IMPACT ELITE QUARTER SPHERE, 150 WATT, METAL HALIDE; COLOR: BLACK	12'	N/A	N/A	31

*NOTE: (2) LIGHT POLES FOUND WITHIN LANDSCAPE AREAS SHALL BE FIBERGLASS AND DIRECT–BURY. THE CONTRACTOR SHALL ENSURE ANY SPECIAL ITEMS WILL BE ORDERED IN ORDER TO ACCOMMODATE THESE (2) POLES. SEE SHEET 32 FOR THE LOCATIONS OF THESE (2) LIGHT POLES.

AES CONSULTING ENGINEERS
Hampton Roads | Central Virginia | Middle Peninsula
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 253-0040
Fax: (757) 220-8994
www.aesva.com

Williamsburg Pottery
Stonehouse District James City County Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: NTS	Date: 9/3/2010
Sheet Title:	Lighting Notes & Details
Sheet Number	36

FIXTURE TYPES 'B1', 'B2' & 'B3'

McGRAW-EDISON®

DESCRIPTION

Galleria's beauty and versatility make it an excellent choice for roadway and general area lighting applications. An aesthetic reveal in the formed aluminum housing gives the Galleria a distinctive look while a variety of mounting options and lamp wattages provide maximum flexibility.

Galleria's superior light distributions makes it the optimum choice for almost any small, medium or large area lighting application.

Catalog #	Type
Project	
Comments	Date
Prepared by	

SPECIFICATION FEATURES

Construction
HOUSING: Formed aluminum housing with stamped reveal has interior welded seams for structural integrity and is finished in premium TGIC polyester powder coat. U.L. listed and CSA certified for wet locations. DOOR: Formed aluminum door has heavy duty hinges, captive retaining screws and is finished in premium TGIC polyester powder coat. (Spider mount unit has steel door.)

Electrical
BALLAST TRAY: Ballast tray is hard-mounted to housing interior for cooler operation.

Optical
REFLECTOR: Choice of 14 high efficiency optical systems utilizing horizontal and vertical lamp orientations. Optional high efficiency segmented optical systems constructed of premium 99% reflective anodized aluminum sheet. Optical segments are rigidly mounted inside a thick gauge aluminum housing for superior protection. All segment faces are clean of rivet heads, tabs or other means of attachment which may cause streaking in the light distribution. Standard with mogul base socket. All optical modules feature quick disconnect wiring plugs and are field rotatable in 90° increments. LENS: Convex tempered glass lens or flat glass.

Mounting
Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during assembly. Specify arm included mounting for contractor friendly single carton packaging of housing and arm.

GSS/GSM/GSL
GALLERIA SQUARE

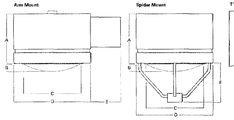
70 - 1000W
Pulse Start Metal Halide
High Pressure Sodium
Metal Halide

ARCHITECTURAL AREA LUMINAIRE

DARK SKY COMPLIANT FCO

NOTE: In all flat glass configurations only.

DIMENSIONS



Fixture	A	B	C	D	E	F
GSS	5-1/4" 133mm	7-3/4" 197mm	12-3/4" 324mm	15-3/4" 400mm	6' or 8' 152mm or 203mm	3-1/4" 83mm
GSM	11" 279mm	9-1/2" 241mm	18-1/2" 470mm	21-3/4" 552mm	8' or 14' 203mm or 356mm	15' or 20' 381mm or 508mm
GSL	14" 356mm	12-1/2" 318mm	25-1/2" 648mm	28-1/2" 724mm	14' or 20' 356mm or 508mm	25' or 30' 635mm or 762mm

NOTE: Flat cap used on GSM with 1000W. Flat glass optically angled option only.

ARM DRILLING

WATTAGE TABLE

Fixture	Lamp Type	Wattage
GSS (Galleria Small)	Pulse Start Metal Halide (MP)	70, 100, 150W
	High Pressure Sodium (HPS)	70, 100, 150W
	Metal Halide (MH)	175W
GSM (Galleria Medium)	Pulse Start Metal Halide (MP)	70, 100, 150, 175, 200, 250, 320, 350, 400, 450, 750, 875, 1000W
	High Pressure Sodium (HPS)	70, 100, 150, 250, 400, 750, 1000W
	Metal Halide (MH)	175, 250, 400, 1000W
GSL (Galleria Large)	Pulse Start Metal Halide (MP)	250, 320, 350, 400, 450, 750, 1000W
	High Pressure Sodium (HPS)	250, 400, 750, 1000W
	Metal Halide (MH)	250, 400, 1000W

ENERGY DATA

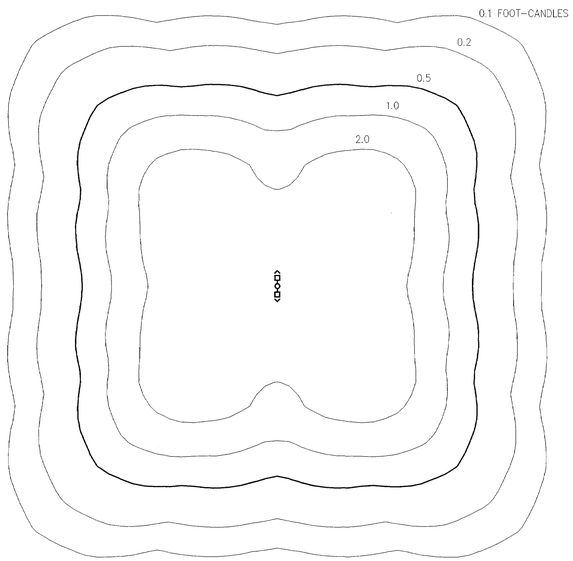
CWA Ballast Input Watts
100W MP HPF (140 Watts)
175W MP HPF (195 Watts) @
250W MP HPF (320 Watts) @
400W MP HPF (465 Watts) @
450W MP HPF (520 Watts) @
400W HPS HPF (457 Watts)
750W MP HPF (820 Watts)
1000W MH HPF (1100 Watts)
1000W HPS HPF (1000 Watts)

EPA
Effective Projected Area: (Sq. Ft.)
(Without Arm)
GSS: 1.20 **GSM:** 2.10 **GSL:** 3.90
(Spider Mount)
GSS: 1.13 **GSM:** 2.16 **GSL:** 4.05

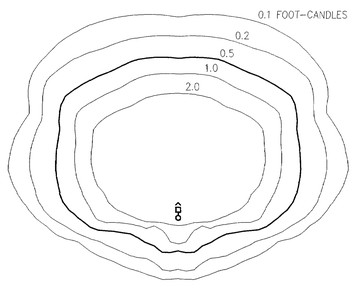
SHIPPING DATA
Approximate Net Weight:
36 lbs. (16 kgs.)
79 lbs. (36 kgs.)
88 lbs. (40 kgs.)

ACP-0105/05 pc
2010-10-29 05:18:25

COOPER Lighting
www.cooperlighting.com



TYPE 'B1' ISO FOOT-CANDLE DIAGRAM



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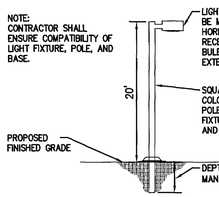
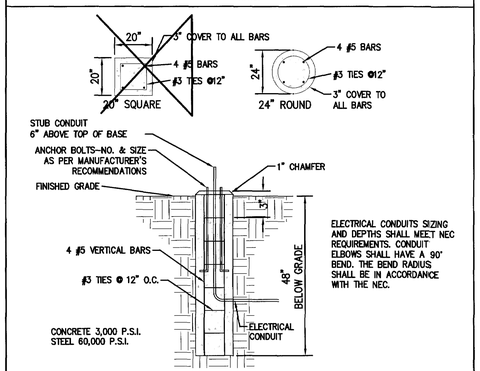


TYPE 'B2' DIRECT-BURY SQUARE POLE DETAIL
N.T.S.



TYPE 'A1' & 'A2' FLUSH 16-25' POLE BASE DETAIL
N.T.S.

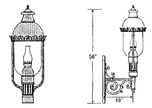
FIXTURE TYPES 'A1' & 'A2'

Dundee page 2 of 4 DATE TYPE

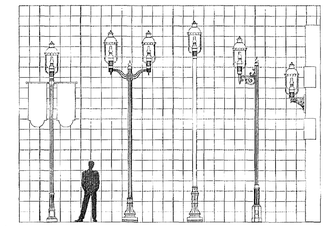
OPTION

Lightly diffused lens to conceal fixture interior.

DIMENSIONS



ELEVATED SCALE



SCALE: 0.25" = 1'

HEAD	ALN 610	2-ALN 610	ALN 610	2-ALN 610	ALN 610
ARM	•	2-TRA6U	•	TRA1L	WA1U
POLE	DB1-4F14	DB4-4F16	DB4-4F16	DB8-4F14	•
OPTIONS	BBD4-24	•	•	•	•

ARCHITECTURAL AREA LIGHTING 3

Fixture 1	Lamp/Ballast 2	Color 3	Options 4

1 FIXTURE

- ☐ ALN 610 H2 — Type 2 horizontal cutoff reflector. Clear acrylic lens.
- ☐ ALN 610 H3 — Type 3 horizontal cutoff reflector. Clear acrylic lens.
- ☐ ALN 610 H4 — Type 4 horizontal cutoff reflector. Clear acrylic lens.
- ☐ ALN 610 H5 — Type 5 horizontal cutoff reflector. Clear acrylic lens.

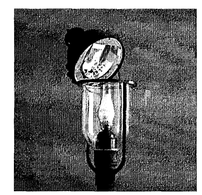
2 LAMP/BALLAST

- ☐ CF — Compact fluorescent, electronic 120 thru 277 volt ballast. -18° C starting temperature. Use 4-pin 26, 32 or 42 watt lamp. Specify wattage.
- ☐ PL57 — 57 watt compact fluorescent 120 thru 277 volt ballast. Use GE F57QBX lamp. -10°C minimum start temperature.
- ☐ PL70 — 70 watt compact fluorescent 120 thru 277 volt ballast. Use GE F70QBX lamp. -10°C minimum start temperature.
- ☐ 50MH — 50 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 70MH — 70 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 100MH — 100 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 150MH — 150 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 175MH — 175 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 70HPS — 70 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 100HPS — 100 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 150HPS — 150 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.

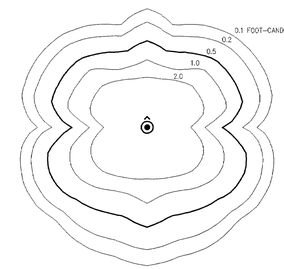
All ballasts are factory wired for 277 volt, unless specified. Lamps not included.
All ballasts are EISA compliant.

SOLD TO	PO #	JOB NAME	Approvals

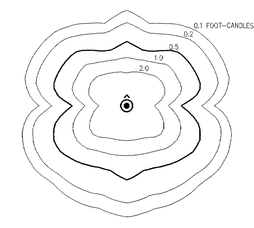
Architectural Area Lighting
16556 East Gale Ave. | City of Industry | CA 91745
P 626.968.5666 | F 626.369.2695 | www.aal.net
Design patents, Copyright © 2010 Rev 08/2010



HORIZONTALLY-MOUNTED BULB, FULLY HOUSED UP IN THE FIXTURE CAP



TYPE 'A1' ISO FOOT-CANDLE DIAGRAM



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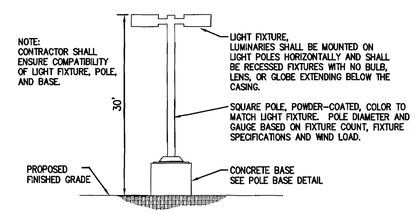
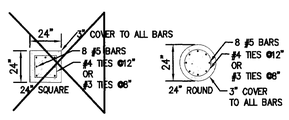
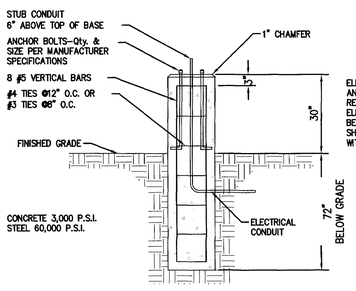


TYPE 'B1' SQUARE POLE DETAIL
N.T.S.





TYPE 'B1' 30-35' POLE BASE DETAIL
N.T.S

FIXTURE TYPE 'C1'

McGRAW-EDISON®

DESCRIPTION

The IMPACT Elite Quarter Sphere cutoff wall luminaire makes an ideal complement to site design. Rugged construction and full cutoff classified optics provide facade and security lighting for light restricted zones surrounding schools, office complexes, apartments, and recreational facilities. U.L. and cUL Listed for wet locations in drove mount applications and damp locations in up mounted applications.

Catalog #	Type
Project	
Comments	Date
Prepared by	

SPECIFICATION FEATURES

Construction
Two-piece die-cast aluminum housing and removable hinged door frame seals securely for precise tolerance control and repeatability. Hinged door frame inset for close mating with housing surface and secured via two (2) captive stainless steel fasteners. Optional tamper resistant screw head fasteners. Door vandal resistant screws to the door frame compartment. 1/8" clear, heat and impact resistant tempered flat glass lens combined with molded silicone gasket to seal the integrated optical assembly while ensuring peak optical performance.

Electrical
Integral hard mount electrical components are secured and grounded within the die-cast aluminum housing for optimal heat sinking and extended component life. Minimum starting temperatures are -40°C (-40°F) for HPS and -30°C (-22°F) for MP. Compact fluorescent luminaires feature electronic silver cell 120-277V high efficiency 5000K ballast with -18°C (-0°F) minimum starting. Available in 50-175W MD or 26-84W CF.

Optical
Premium anodized 95% reflective aluminum optical assemblies provide high efficiency Type III distribution. Optional silk screened house side flat glass shield provides decreased wall brightness. All Impact Elite Wall Series luminaires classify as IESNA full cutoff in downlight applications.

Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" j-box or mounts with the Impact Elite "Hook-N-Lock" system for fast installation and mounting in both traditional downlighting (wet location) or inverted uplighting (damp location) mounting positions. Secured via two (2) captive corrosion resistant alen head set screws concealed from view, but accessible from bottom of fixture.

Finish
Housing and door are protected with 5-stage premium TGIC polyester powder coat paint. Provides 1500 hours salt spray exposure. Exterior withstands extreme climate changes while providing optimal color and gloss retention over the fixture's installed life. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult McGraw-Edison Architectural Colors Brochure for complete selections.

ISS
IMPACT ELITE QUARTER SPHERE

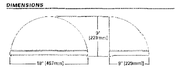
50 - 175W
Pulse Start Metal Halide
Metal Halide
High Pressure Sodium
26 - 84W
Compact Fluorescent

FULL CUTOFF
WALL MOUNT LUMINAIRE

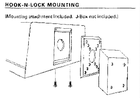
DARK SKY COMPLIANT FCO

NOTE: In full cutoff configuration only.

DIMENSIONS



HOOK-N-LOCK MOUNTING



TECHNICAL DATA
Electrical Supply Voltage
Max. Maximum Ambient Temperature
External Supply Wiring 90°C Minimum
Down Mounted – Wet Location
Up Mounted – Damp Location

ENERGY DATA
CWA Ballast Input Watts
(Not HPS HPF and Below)
(5W) MH HPF (27 Watts)
(8W) HPS HPF (31 Watts)
(9W) MH HPF (50 Watts)
(10W) MPS HPF (100 Watts)
(10W) MH HPF (129 Watts)
(10W) MPS HPF (158 Watts)
(10W) MH HPF (185 Watts)

CWA Ballast Input Watts
(Not HPS HPF and Below)
(10W) MH HPF (219 Watts)

Electronic Ballast Input Watts
(26W CF HPF (29 Watts)
(32W CF HPF (36 Watts)
(42W CF HPF (46 Watts)
(84W CF HPF (88 Watts)

SHIPPING DATA
Approximate Net Weight:
16 lbs. (8 kgs.)

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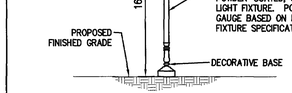
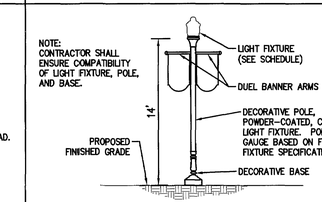
COOPER Lighting
www.cooperlighting.com

IMPACT

TYPE 'C1' ISO FOOT-CANDLE DIAGRAM



TYPE 'A1' POLE DETAIL
N.T.S.



TYPE 'A2' POLE DETAIL
N.T.S.

LIGHTING SCHEDULE

KEY	FIXTURE TYPE	MOUNTING HEIGHT	POLE TYPE/ MOUNTING INSTRUCTIONS	FIXTURES PER POLE	TOTAL FIXTURES
A1	ARCHITECTURAL AREA LIGHTING ALN610H5–150MH–BLK DUNDEE TYPE V HORIZONTAL CUTOFF REFLECTOR, 150 WATT, METAL HALIDE; COLOR: BLACK	16'	ARCHITECTURAL AREA LIGHTING DB1–4R16 4" ROUND 16' HIGH POLE WITH DECORATIVE BASE	1	26
A2	ARCHITECTURAL AREA LIGHTING ALN610H5–70MH–BLK DUNDEE TYPE V HORIZONTAL CUTOFF REFLECTOR, 70 WATT, METAL HALIDE; COLOR: BLACK	14'	ARCHITECTURAL AREA LIGHTING DB1–4R14–BBD4–24 4" ROUND 14' HIGH POLE WITH DECORATIVE BASE; INCLUDE DUEL BANNER ARMS	1	44
B1*	COOPER: McGRAW–EDISON GSM–400W–MP–AS–FG–BK GALLERIA SQUARE, 400 WATT, METAL HALIDE, AREA SQUARE REFLECTOR; COLOR: BLACK	30'	COOPER SSA SQUARE STRAIGHT ALUMINUM POLE*	2	30
B2	COOPER: McGRAW–EDISON GSM–400W–MP–SL–FG–BK GALLERIA SQUARE, 400 WATT, METAL HALIDE, SPILL ELIMINATOR REFLECTOR; COLOR: BLACK	20'	COOPER SSA SQUARE STRAIGHT ALUMINUM POLE (DIRECT–BURY)	1	16
C1	COOPER: McGRAW–EDISON ISS–150W–MP–BK IMPACT ELITE QUARTER SPHERE, 150 WATT, METAL HALIDE; COLOR: BLACK	12'	N/A	N/A	34

*NOTE: (2) LIGHT POLES FOUND WITHIN LANDSCAPE AREAS SHALL BE FIBERGLASS AND DIRECT–BURY. THE CONTRACTOR SHALL ENSURE ANY SPECIAL ITEMS WILL BE ORDERED IN ORDER TO ACCOMMODATE THESE (2) POLES. SEE SHEET 32 FOR THE LOCATIONS OF THESE (2) LIGHT POLES.

Rev.	Date	Description	Revised By
11	7/05/12	Site Plan Amendment Resubmittal	RAC
10	2/29/12	Site Plan Amendment	MJR
9	11/09/11	Revised Plans per Owner Request	GRR
8	10/07/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised R/W Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

GAVIN R. ROBEY
Lic. No. 001299
7/05/12
LANDSCAPE ARCHITECT

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Williamsburg, Virginia 23188
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www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

Williamsburg Pottery
Storehouse District | James City County | Virginia

Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: NTS	Date: 9/3/2010

Sheet Title:
Lighting Notes & Details

Sheet Number
36

FIXTURE TYPES 'B1', 'B2' & 'B3'

McGRAW-EDISON®

Catalog #		Type
Project		
Comments		Date
Prepared by		

DESCRIPTION

Galleria's beauty and versatility make it an excellent choice for roadway and general area lighting applications. An aesthetic reveal in the formed aluminum housing gives the Galleria a distinctive look while a variety of mounting options and lamp wattages provide maximum flexibility.

Galleria's superior light distributions makes it the optimum choice for almost any small, medium or large area lighting application.

SPECIFICATION FEATURES

Construction
HOUSING: Formed aluminum housing with stamped reveal has interior-welded seams for structural integrity and is finished in premium TGIC polyester powder coat. U.L. listed and CSA certified for wet locations. DOOR: Formed aluminum door has concealed hinges, captive retaining screws and is finished in premium TGIC polyester powder coat. (Spider mount unit has steel door.)

Electrical
BALLAST TRAY: Ballast tray is hard-mounted to housing interior for cooler operation.

Optical
REFLECTOR: Choice of 14 high efficiency optical systems satisfying horizontal and vertical lamp orientations. Optional High efficiency segmented optical system with optional premium specular finish. Optical segments are rigidly mounted inside a thick gauge aluminum housing for superior protection. All segment faces are clean of rivet heads, tabs or other means of attachment which may cause streaking in the light distribution. Standard with mogul-base socket. All optical modules feature quick disconnect wiring plugs and are field rotatable in 90° increments. LENS: Convex tempered glass lens or flat glass.

Mounting
Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. Specify arm included mounting for contractor-friendly single carton packaging of housing and arm.

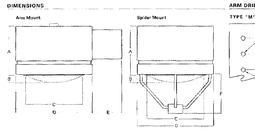
GSS/GSM/GSL
GALLERIA SQUARE

70 - 1000W
Pulse Start Metal Halide
High Pressure Sodium
Metal Halide

ARCHITECTURAL AREA LUMINAIRE

DARK SKY COMPLIANT

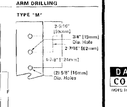
DIMENSIONS



Fixture	A	B	C	D	E	F
GSS	9-3/4" 248mm	5-1/2" 140mm	10-3/8" 263mm	10-5/8" 270mm	4" or 9" 102mm or 229mm	3-5/8" 92mm
GSM	11" 279mm	8-1/2" 216mm	9-1/8" 232mm	17-3/4" 451mm	4" or 14" 102mm or 356mm	10" or 19" 254mm or 483mm
GSL	14-1/2" 368mm	11" 279mm	10-3/8" 263mm	22" 559mm	4" or 19" 102mm or 483mm	13" or 19-3/4" 330mm or 502mm

NOTE: Top top and side GSM and GSS 1000W flat glass vertically turned optics only.

ARM DRILLING



WATTAGE TABLE

Fixture	Lamp Type	Wattage
GSS (Galleria Small)	Pulse Start Metal Halide (MP)	70, 100, 150W
	High Pressure Sodium (HPS)	70, 100, 150W
	Metal Halide (MH)	175W
GSM (Galleria Medium)	Pulse Start Metal Halide (MP)	70, 100, 150, 175, 200, 250, 320, 350, 400, 450, 700, 750, 1000W
	High Pressure Sodium (HPS)	70, 100, 150, 200, 250, 400, 700, 1000
	Metal Halide (MH)	175, 250, 400, 1000W
GSL (Galleria Large)	Pulse Start Metal Halide (MP)	250, 320, 350, 400, 450, 700, 750, 1000W
	High Pressure Sodium (HPS)	250, 400, 700, 1000W
	Metal Halide (MH)	250, 400, 1000W

ENERGY DATA

CWA Ballast Input Watts
70W MP HPF (90 Watts)
100W MP HPF (120 Watts)
150W MP HPF (180 Watts)
250W MS HPF (290 Watts)
400W MS HPF (460 Watts)
400W HS HPF (465 Watts)
700W MP HPF (800 Watts)
700W MH HPF (790 Watts)
1000W HPS HPF (1050 Watts)

EPA
Effective Projected Area: (Sq. Ft.)
(Without Arm)
GSS: 1.0 GSM: 2.0 GSL: 3.90
(Spider Mount)
GSS: 1.0 GSM: 2.00 GSL: 4.40

SHIPPING DATA
Approximate Net Weights:
26 lbs. (14 kgs.)
29 lbs. (16 kgs.)
40 lbs. (20 kgs.)

COOPER Lighting
www.cooperlighting.com

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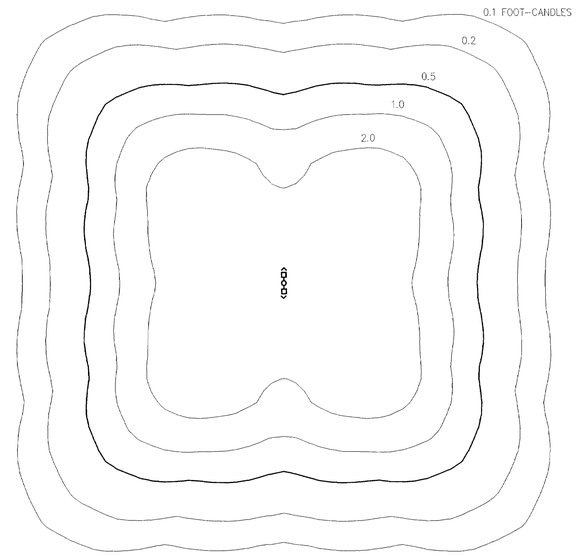
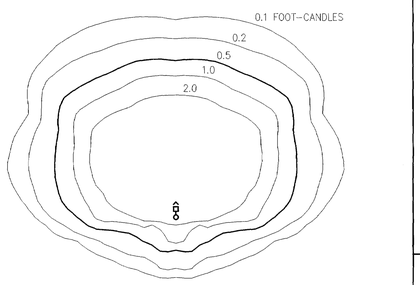


TYPE 'B1' ISO FOOT-CANDLE DIAGRAM



TYPE 'B2' ISO FOOT-CANDLE DIAGRAM

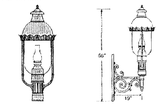
FIXTURE TYPES 'A1' & 'A2'

Dundee page 2 of 4 DATE TYPE

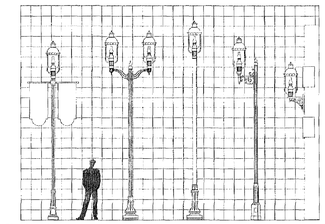
OPTION

Highly diffused lens to conceal fixture interior

DIMENSIONS



ELEVATED SCALE



HEAD		ALN 610	2-ALN 610	ALN 610	2-ALN 610	ALN 610
ARM		•	2-TRAIL	•	TRAIL	WAM3
PCUB	DB1-4R16		DB3-4R14	DB4-4R06	DB5-4R14	•
OPTIONS	BBD4-24		•		•	•

ARCHITECTURAL AREA LIGHTING 3

Fixture 1	Lamp/Ballast 2	Color 3	Options 4

1 FIXTURE

- ☐ ALN 610 H2 — Type 2 horizontal cutoff reflector. Clear acrylic lens.
- ☐ ALN 610 H3 — Type 3 horizontal cutoff reflector. Clear acrylic lens.
- ☐ ALN 610 H4 — Type 4 horizontal cutoff reflector. Clear acrylic lens.
- ☐ ALN 610 H5 — Type 5 horizontal cutoff reflector. Clear acrylic lens.

2 LAMP/BALLAST

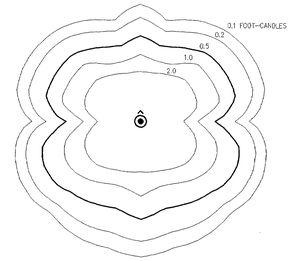
- ☐ CF — Compact fluorescent, electronic 120 thru 277 volt ballast. -16° C starting temperature. Use 4-pin 26, 32 or 42 watt lamp. Specify wattage.
- ☐ PL57 — 57 watt compact fluorescent 120 thru 277 volt ballast. Use GE F57QBX lamp. -10°C minimum start temperature.
- ☐ PL70 — 70 watt compact fluorescent 120 thru 277 volt ballast. Use GE F70QBX lamp. -10°C minimum start temperature.
- ☐ 50MH — 50 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 70MH — 70 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 100MH — 100 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 150MH — 150 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 175MH — 175 watt metal halide 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 70HPS — 70 watt High pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 100HPS — 100 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.
- ☐ 150HPS — 150 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, ED-17 lamp.

All ballasts are factory wired for 277 volt, unless specified. Lamps not included.
All ballasts are BSA compliant

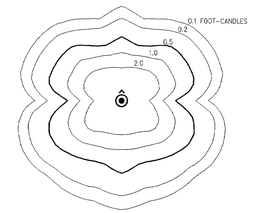
SOLD TO	PO #	JOB NAME	Approvals

Architectural Area Lighting
16655 East Gale Ave. | City of Industry | CA 91745
P 626.968.5666 | F 626.369.3095 | www.dal.net
Design patents, Copyright © 2010 For 060510

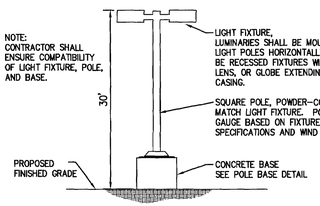
HORIZONTALLY-MOUNTED BULB, FULLY HOUSED UP IN THE FIXTURE CAP



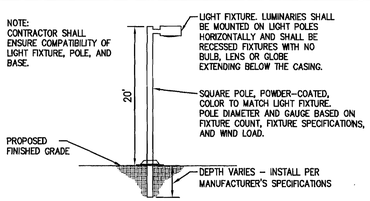
TYPE 'A1' ISO FOOT-CANDLE DIAGRAM



TYPE 'A2' ISO FOOT-CANDLE DIAGRAM



TYPE 'B1' SQUARE POLE DETAIL
N.T.S.



TYPE 'B2' DIRECT-BURY SQUARE POLE DETAIL
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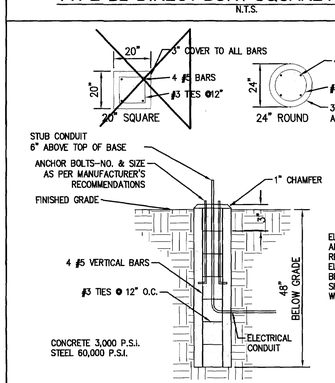
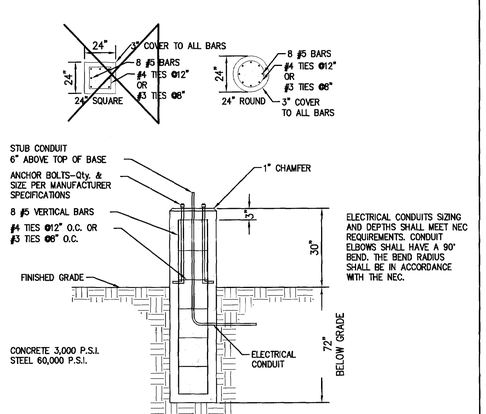


TYPE 'A1' & 'A2' FLUSH 16-25' POLE BASE DETAIL
N.T.S.



TYPE 'B1' 30-35' POLE BASE DETAIL
N.T.S

FIXTURE TYPE 'C1'

McGRAW-EDISON®

Catalog #		Type
Project		
Comments		Date
Prepared by		

DESCRIPTION

The IMPACT Elite Quarter Sphere cutoff wall luminaire makes an ideal complement to site design. Rugged construction and full cutoff classified optics provide facade and security lighting for light restricted zones surrounding schools, office complexes, apartments, and recreational facilities. U.L. and cUL Listed for wet location up down mount applications and damp locations in top mounted applications.

SPECIFICATION FEATURES

Construction
Two-piece die-cast aluminum housing and removable hinged door frame nests securely for positive luminaire control and repeatability. Hinged door frame inset for close mating with housing surface and secured via two (2) captive stainless steel fasteners. Optional tamper resistant torx head fasteners (TR) offer vandal resistant access to the electrical compartment. 1/8" clear, heat and impact resistant tempered flat glass lens coordinated with molded silicone gasket to seal the lens/optical assembly while ensuring peak optical performance.

Electrical
Integral hard mount electrical components are located and grounded within the die-cast aluminum housing for optimal heat sinking and extended component life. Minimum starting temperatures are -40°C (-40°F) for HPS and -30°C (-22°F) for MH. Compact fluorescent luminaires feature electronic universal 120-277V high efficiency 50/60Hz ballast with -18°C (0°F) minimum starting. Available in 59-175W HID or 26-84W CF.

Optical
Premium anodized 95% reflective aluminum optical assemblies provide high efficiency Type II distribution. Optional silk screened hosein silk flat glass shield provides decreased wall brightness. All Impact Elite Wall Sconces luminaires classify as IESNA full cutoff in downlight applications.

Mounting
Galvanized and zinc plated rigid steel mounting attachment fits directly to 4" J-box or wall with the Impact Elite "Hook-N-Lock" system for fast installation and mounting in both traditional downlighting (not location) or inverted uplighting (damp location) mounting positions. Secured via two (2) captive corrosion resistant alloy head screws concealed from view, but accessible from bottom of fixture.

Finish
Housing and door are protected with 5-stage premium TGIC polyester powder coat paint. Premium TGIC powder coat finishes withstand extreme climate changes while providing optimal color and gloss retention over the fixture's installed life. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult McGraw-Edison Architectural Colors Brochure for complete selection.

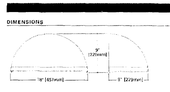
ISS
IMPACT ELITE QUARTER SPHERE

50 - 175W
Pulse Start Metal Halide
Metal Halide
High Pressure Sodium
26 - 84W
Compact Fluorescent

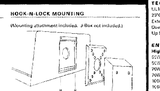
FULL CUTOFF
WALL MOUNT LUMINAIRE

DARK SKY COMPLIANT

DIMENSIONS



HOOK-N-LOCK MOUNTING



TECHNICAL DATA
UL/cUL Listed, CUL Listed
25°C Maximum Ambient Temperature
External Supply 50/60 Hz 90°C Minimum Wire Rating Required
Top Mounted—Damp Location

ENERGY DATA
High Reactance Ballast Input Watts
35W MPS HPF (38 Watts)
50W MH HPF (53 Watts)
70W MPS HPF (80 Watts)
70W MH HPF (80 Watts)
100W HPS HPF (120 Watts)
150W MH HPF (169 Watts)
150W HPS HPF (170 Watts)
175W MH HPF (195 Watts)

CWA Ballast Input Watts
150W MH HPF (170 Watts)

Electronic Ballast Input Watts
26W CF HPF (29 Watts)
32W CF HPF (36 Watts)
42W CF HPF (46 Watts)
57W CF HPF (66 Watts)

SHIPPING DATA
Approximate Net Weight:
18 lbs. (8 kgs.)

COOPER Lighting
www.cooperlighting.com

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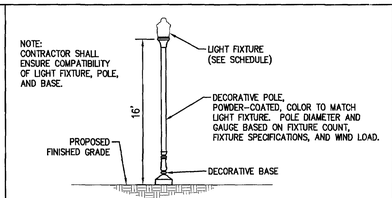
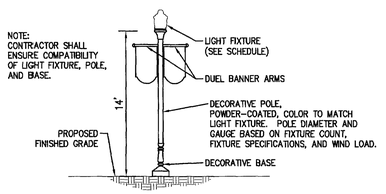


TYPE 'A1' POLE DETAIL
N.T.S.



TYPE 'A2' POLE DETAIL
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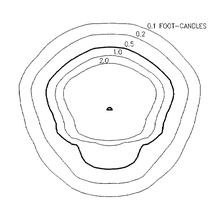

TYPE 'C1' ISO FOOT-CANDLE DIAGRAM

LIGHTING SCHEDULE

KEY	FIXTURE TYPE	MOUNTING HEIGHT	POLE TYPE/ MOUNTING INSTRUCTIONS	FIXTURES PER POLE	TOTAL FIXTURES
A1	ARCHITECTURAL AREA LIGHTING ALN610H5–150MH–BLK DUNDEE TYPE V HORIZONTAL CUTOFF REFLECTOR, 150 WATT, METAL HALIDE; COLOR: BLACK	16'	ARCHITECTURAL AREA LIGHTING DB1–4R16 4" ROUND 16' HIGH POLE WITH DECORATIVE BASE	1	22
A2	ARCHITECTURAL AREA LIGHTING ALN610H5–70MH–BLK DUNDEE TYPE V HORIZONTAL CUTOFF REFLECTOR, 70 WATT, METAL HALIDE; COLOR: BLACK	14'	ARCHITECTURAL AREA LIGHTING DB1–4R14–BBD4–24 4" ROUND 14' HIGH POLE WITH DECORATIVE BASE; INCLUDE DUEL BANNER ARMS	1	44
B1*	COOPER: McGRAW–EDISON GSM–400W–MP–AS–FG–BK GALLERIA SQUARE, 400 WATT, METAL HALIDE, AREA SQUARE REFLECTOR; COLOR: BLACK	30'	COOPER SSA SQUARE STRAIGHT ALUMINUM POLE*	2	30
B2	COOPER: McGRAW–EDISON GSM–400W–MP–SL–FG–BK GALLERIA SQUARE, 400 WATT, METAL HALIDE, SPILL ELIMINATOR REFLECTOR; COLOR: BLACK	20'	COOPER SSA SQUARE STRAIGHT ALUMINUM POLE (DIRECT–BURY)	1	16
C1	COOPER: McGRAW–EDISON ISS–150W–MP–BK IMPACT ELITE QUARTER SPHERE, 150 WATT, METAL HALIDE; COLOR: BLACK	12'	N/A	N/A	34

*NOTE: (2) LIGHT POLES FOUND WITHIN LANDSCAPE AREAS SHALL BE FIBERGLASS AND DIRECT–BURY. THE CONTRACTOR SHALL ENSURE ANY SPECIAL ITEMS WILL BE ORDERED IN ORDER TO ACCOMMODATE THESE (2) POLES. SEE SHEET 32 FOR THE LOCATIONS OF THESE (2) LIGHT POLES.

Rev.	Date	Description	Revised By
6	5/27/11	Revised for VDOT & JCSA Comments	MJR
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Stonehouse District | James City County | Virginia

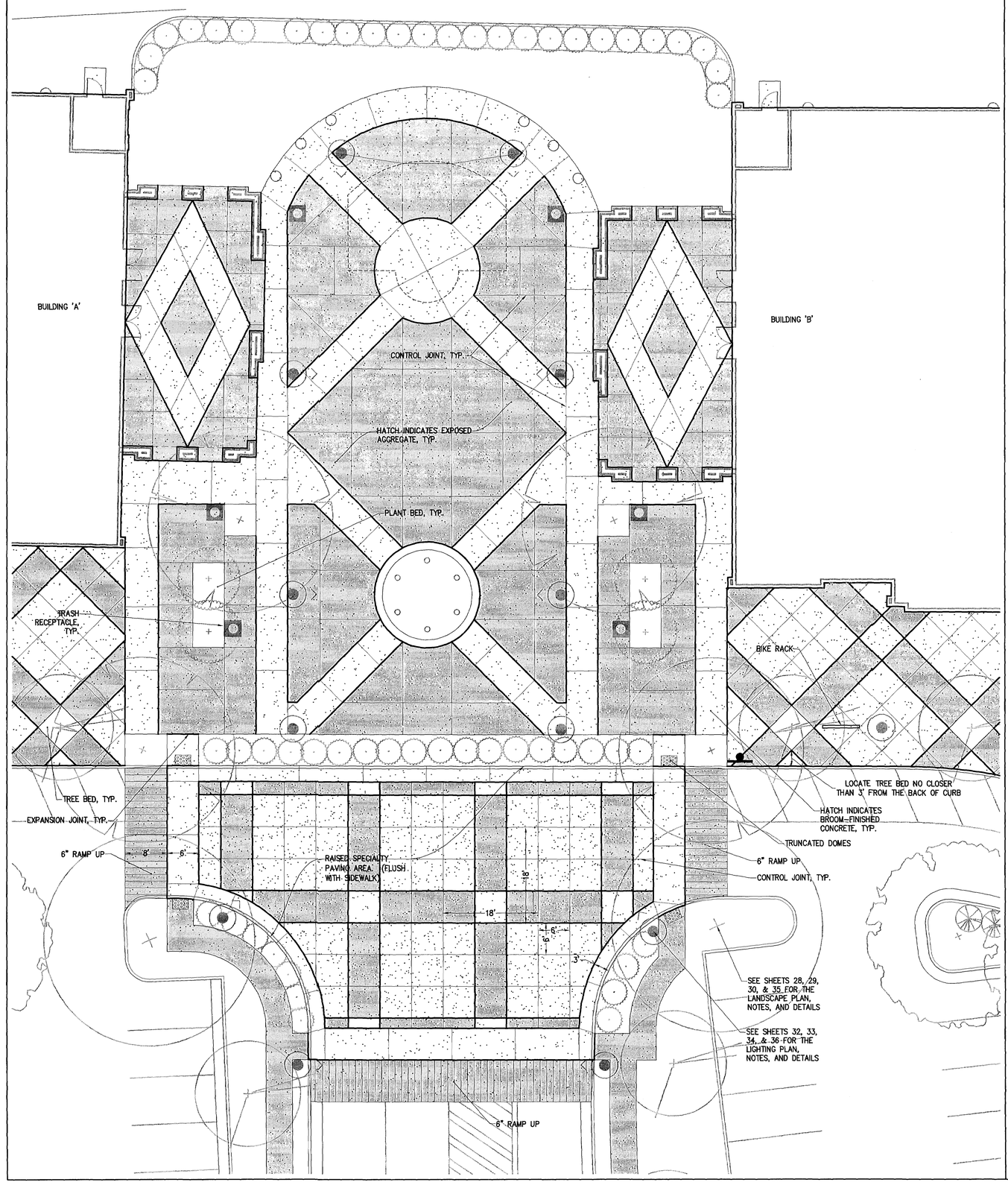
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: NTS	Date: 9/3/2010

Sheet Title:
Lighting Notes & Details

Sheet Number
36

HARDSCAPE PLAN DETAIL

(SCALE: 1"=10')



SITE AMENITIES

(NTS)

NOTE: SITE AMENITIES FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL PRODUCT SPECIFICATION TO BE DETERMINED BY OWNER PRIOR TO INSTALLATION.

6' WIDE METAL BENCH

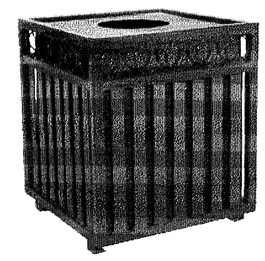
QUANTITY: 25

(FINAL LOCATIONS TO BE DETERMINED IN THE FIELD)

SQUARE TRASH RECEPTACLE

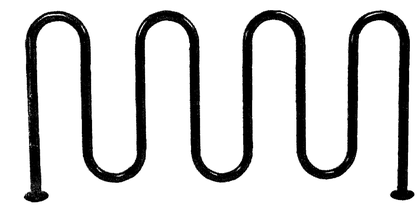
QUANTITY: 14

(FINAL LOCATIONS TO BE DETERMINED IN THE FIELD)



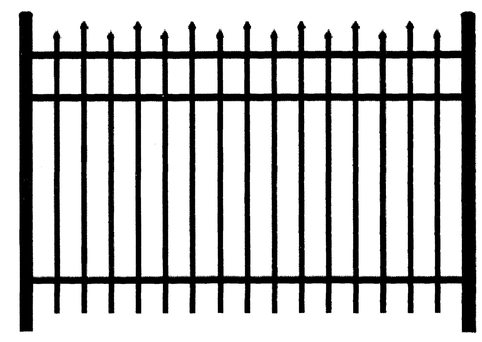
BIKE RACK (CAPACITY FOR 7 BIKES)

QUANTITY: 2



42" HIGH DECORATIVE ALUMINUM FENCE

QUANTITY: 1,728± LF



HATCH LEGEND

- EXPOSED AGGREGATE CONCRETE
- BROOM FINISH CONCRETE
- RAMP FOR TRAFFIC CALMING (EXPOSED AGGREGATE FINISH)

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3	12/15/10	Revised for Staff Comments	MJR
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Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:

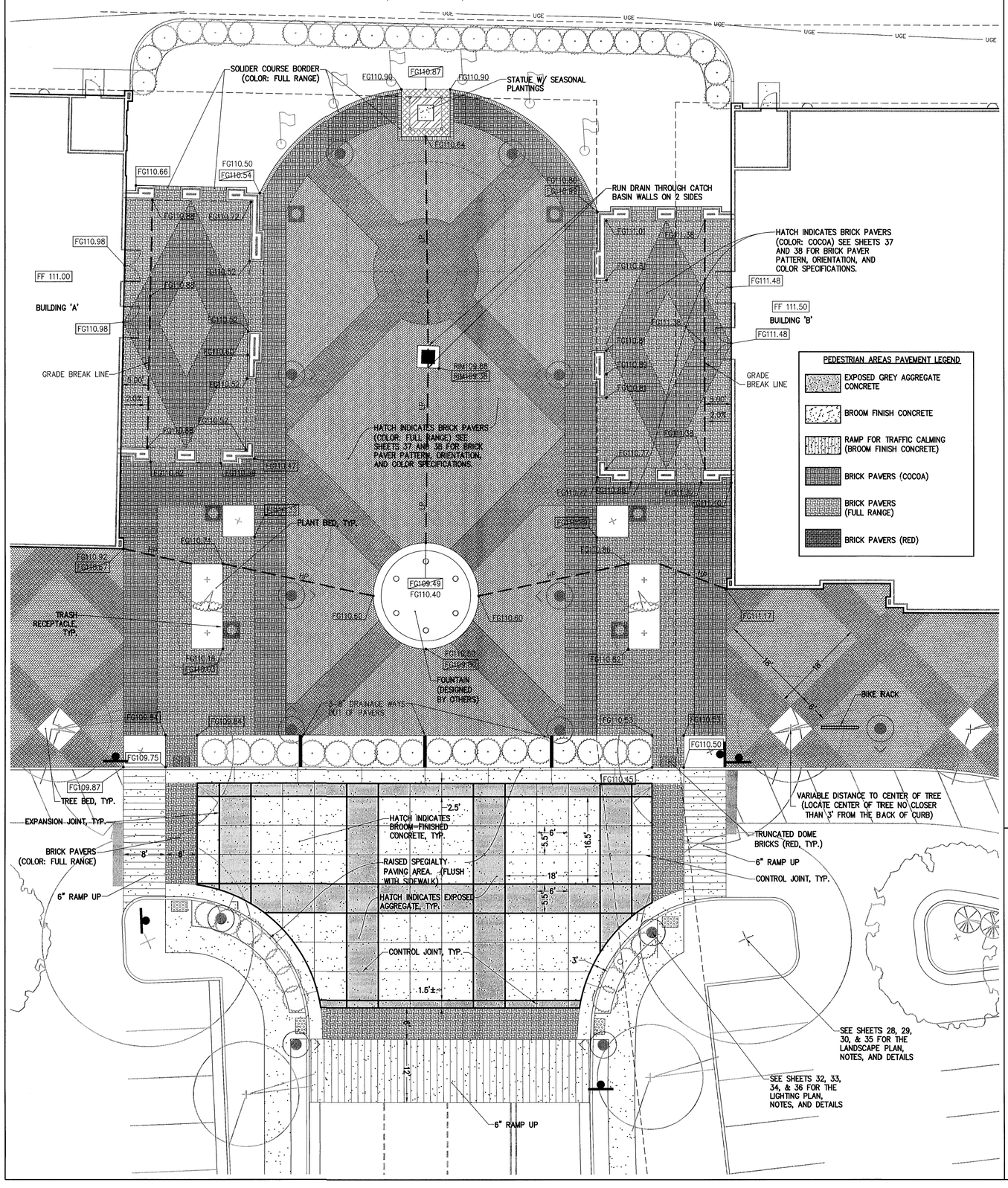
Hardscape & Site Amenity Notes & Details

Sheet Number

37

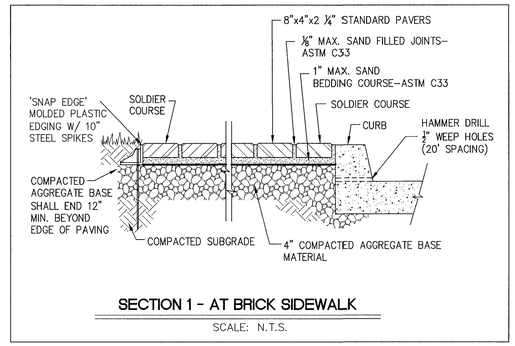
HARDSCAPE PLAN DETAIL

(SCALE: 1"=10')



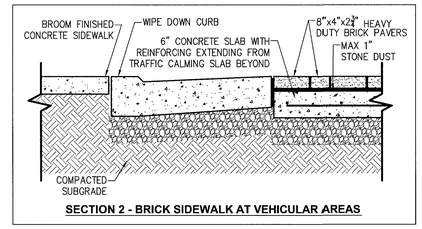
HARDSCAPE PAVEMENT SECTIONS

(NTS)

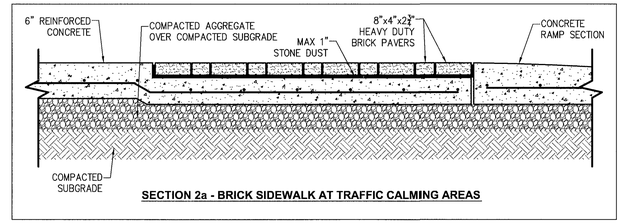


SECTION 1 - AT BRICK SIDEWALK

SCALE: N.T.S.



SECTION 2 - BRICK SIDEWALK AT VEHICULAR AREAS



SECTION 2a - BRICK SIDEWALK AT TRAFFIC CALMING AREAS

GRADING LEGEND

111.00	PLAN GRADE HELD
~~111.00~~	PLAN GRADE REVISED
111.00	ADDITIONAL GRADES

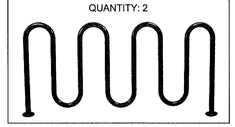
SITE AMENITIES

(NTS)

NOTE: SITE AMENITIES FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL PRODUCT SPECIFICATION TO BE DETERMINED BY OWNER PRIOR TO INSTALLATION.

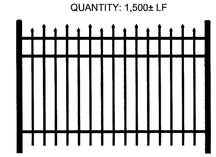
BIKE RACK (CAPACITY FOR 7 BIKES)

QUANTITY: 2



42" HIGH DECORATIVE ALUMINUM FENCE

QUANTITY: 1,500± LF



SQUARE TRASH RECEPTACLE

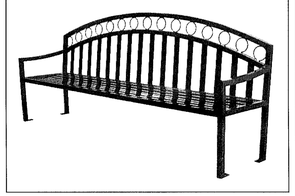
QUANTITY: 14

(FINAL LOCATIONS TO BE DETERMINED IN THE FIELD)

6' WIDE METAL BENCH

QUANTITY: 25

(FINAL LOCATIONS TO BE DETERMINED IN THE FIELD)



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7/25/12
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Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:

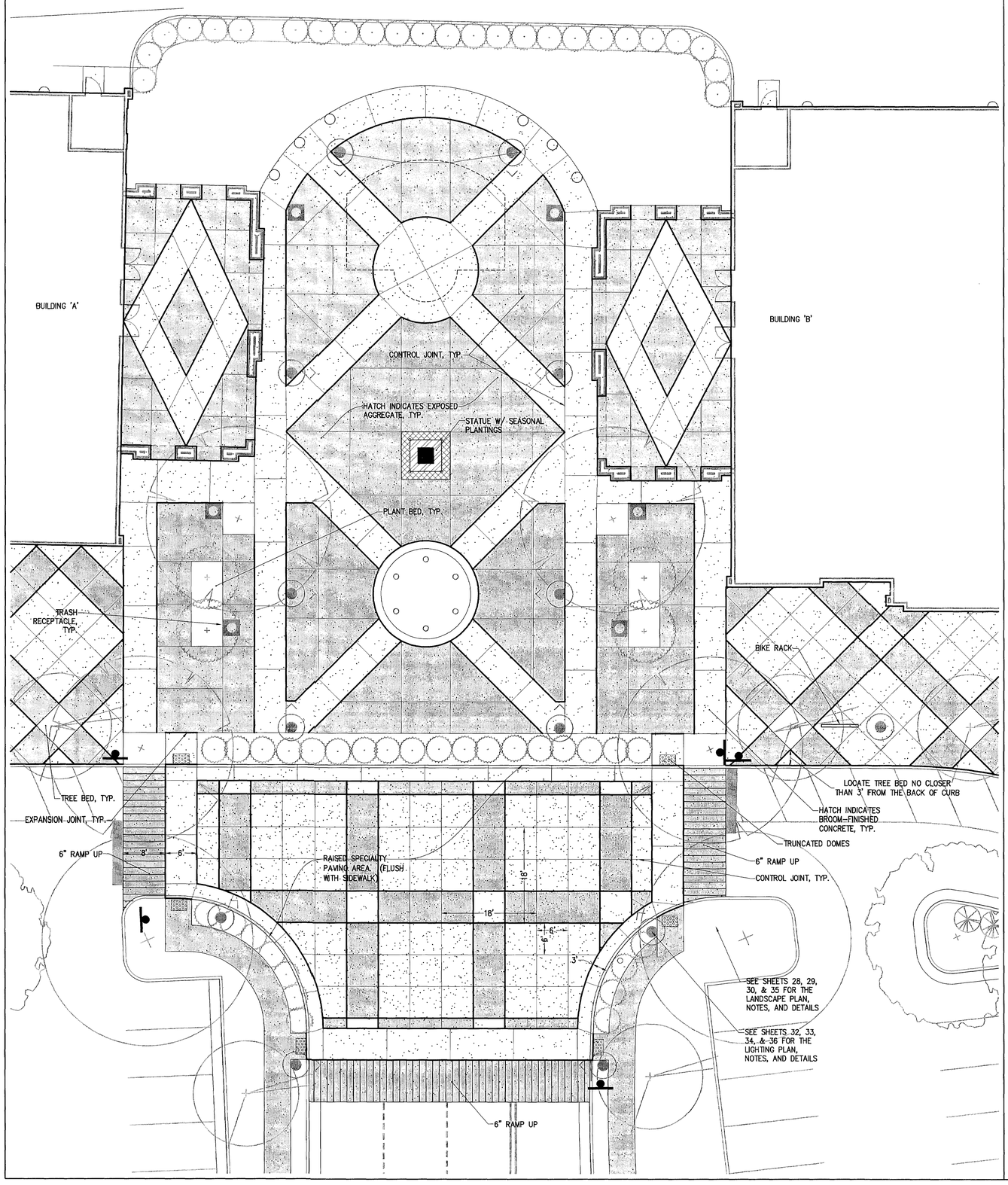
Hardscape & Site Amenity Notes & Details

Sheet Number

37

HARDSCAPE PLAN DETAIL

(SCALE: 1"=10')



SITE AMENITIES

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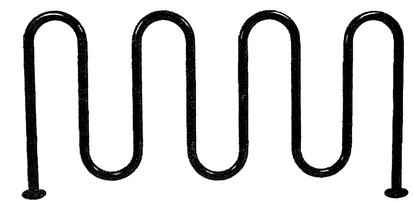
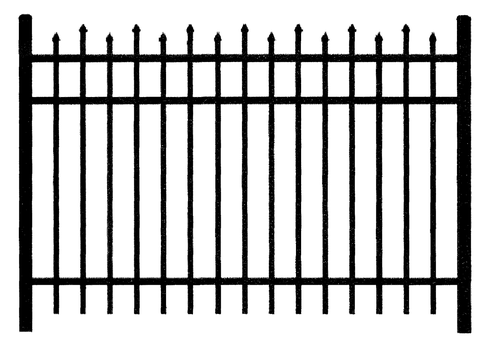


42" HIGH DECORATIVE ALUMINUM FENCE

QUANTITY: 1,500± LF



HATCH LEGEND

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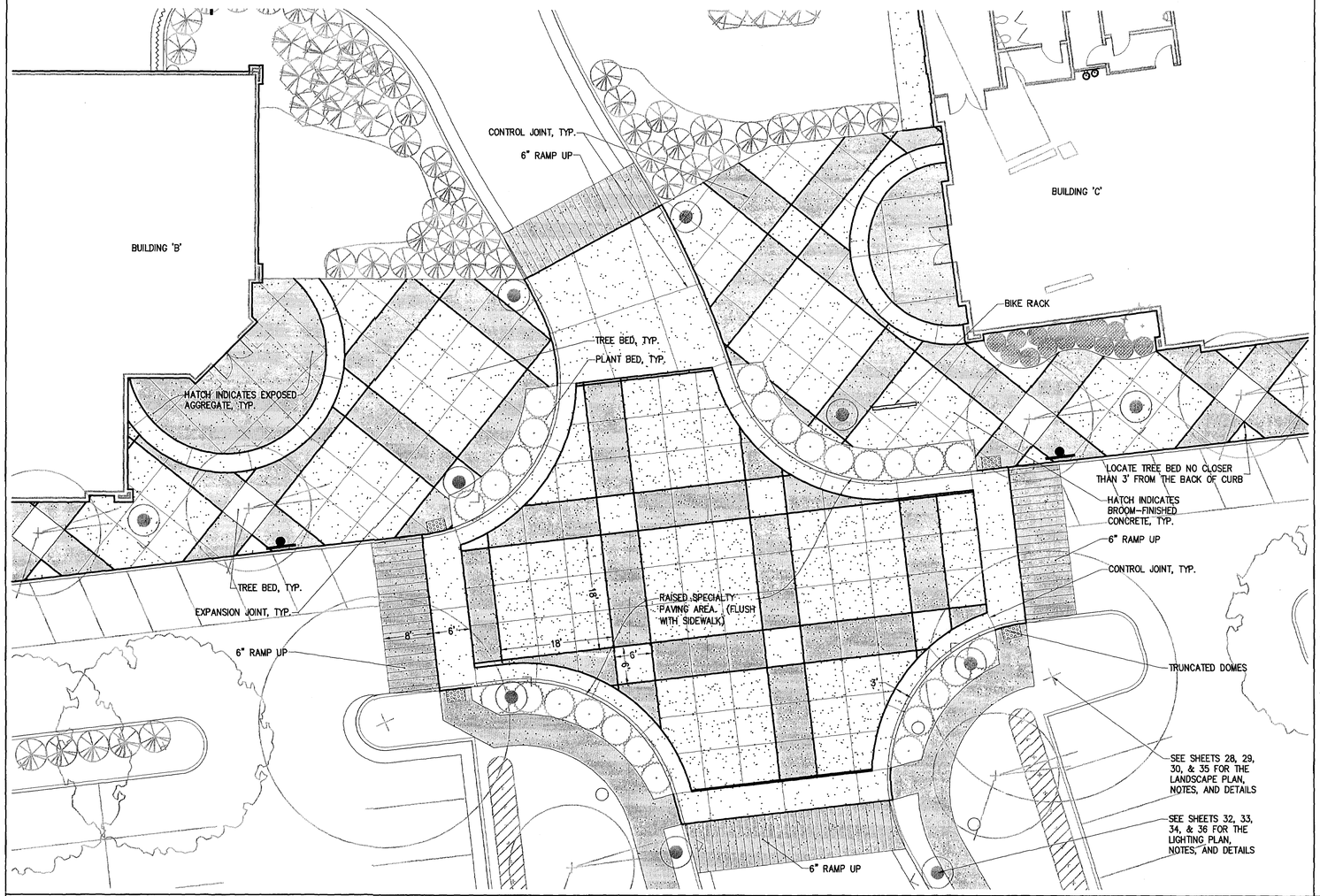
Scale: 1"=30'	Date: 9/3/2010

Sheet Title: Hardscape & Site Amenity Notes & Details

Sheet Number

37

HARDSCAPE PLAN DETAIL
(SCALE: 1"=10')



HARDSCAPE PLAN DETAIL
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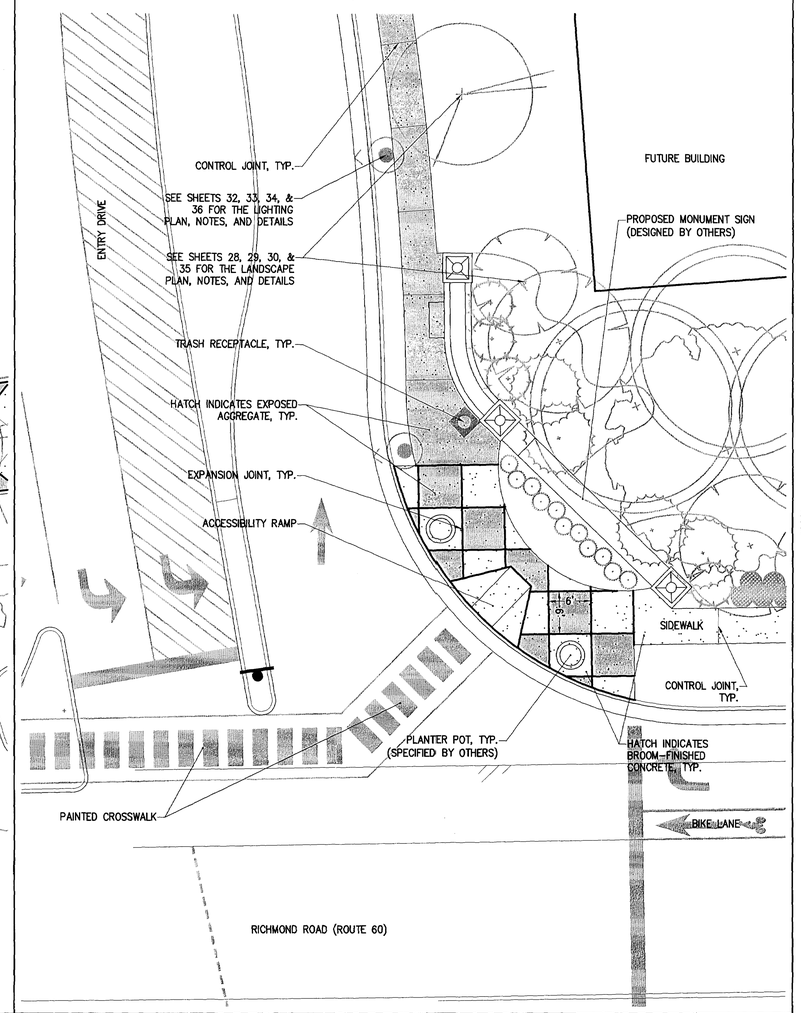

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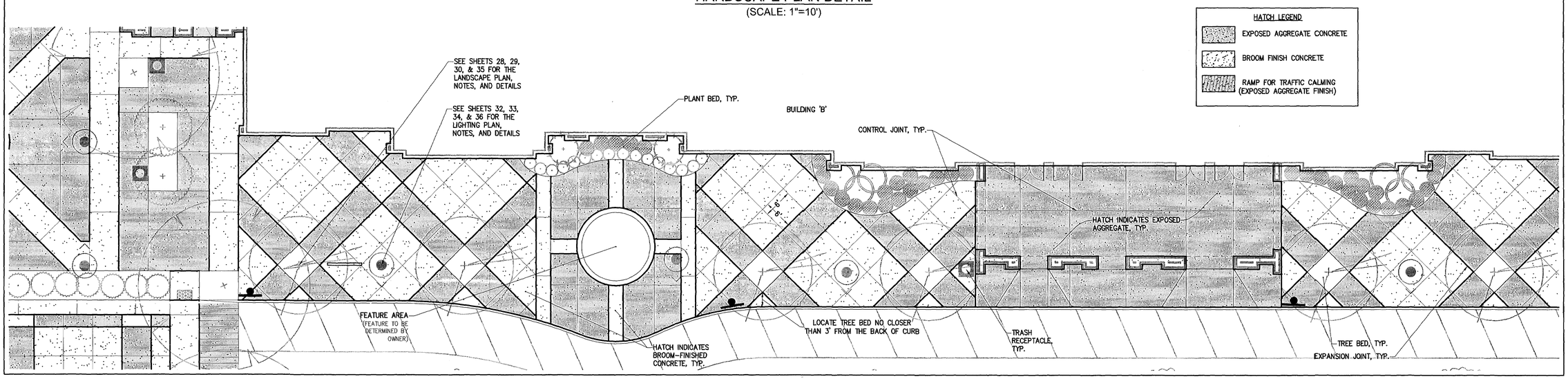

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LANDSCAPE ARCHITECT

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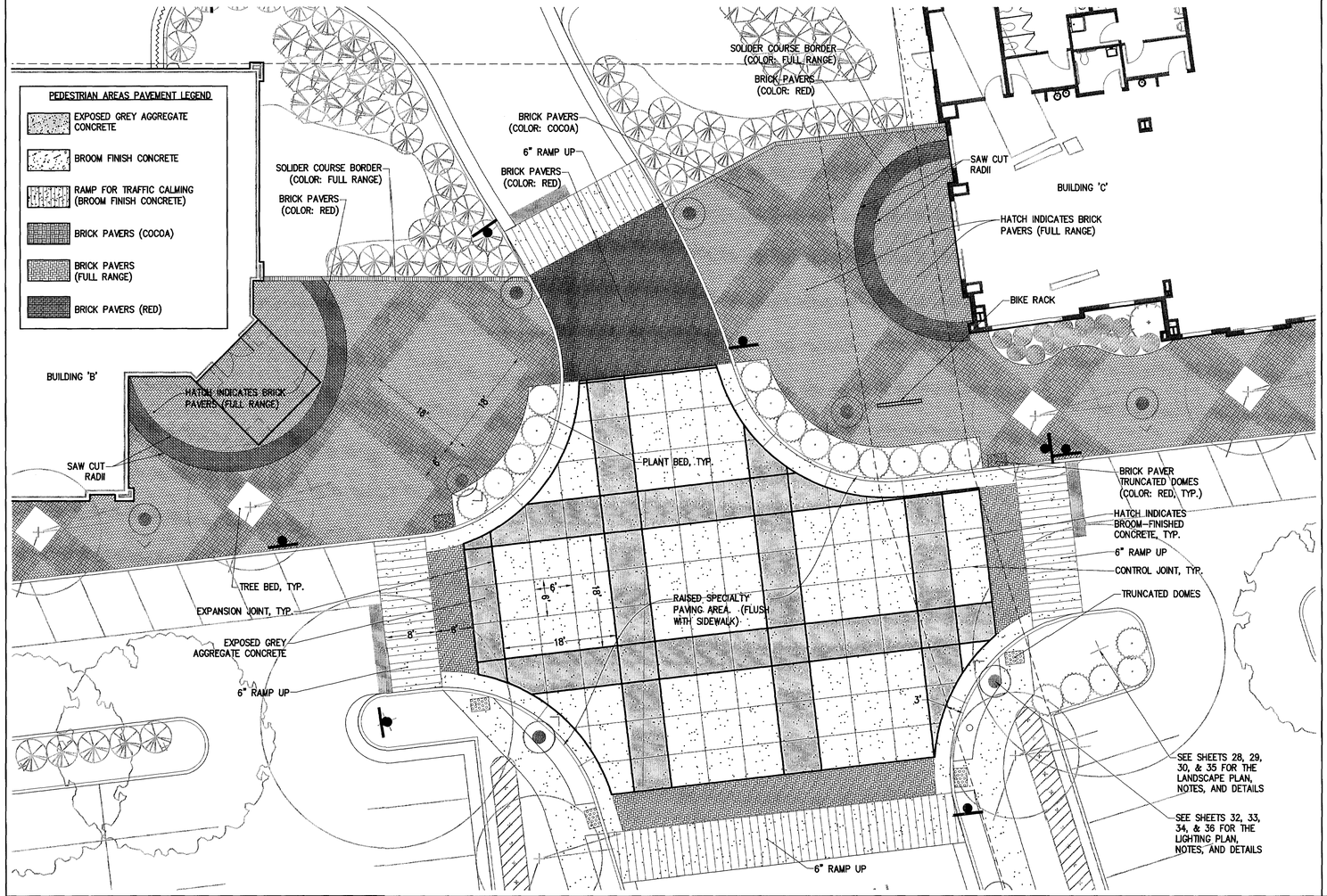
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=30'	Date: 9/3/2010

Sheet Title:
Hardscape Notes & Details

Sheet Number
38

HARDSCAPE PLAN DETAIL
(SCALE: 1"=10')



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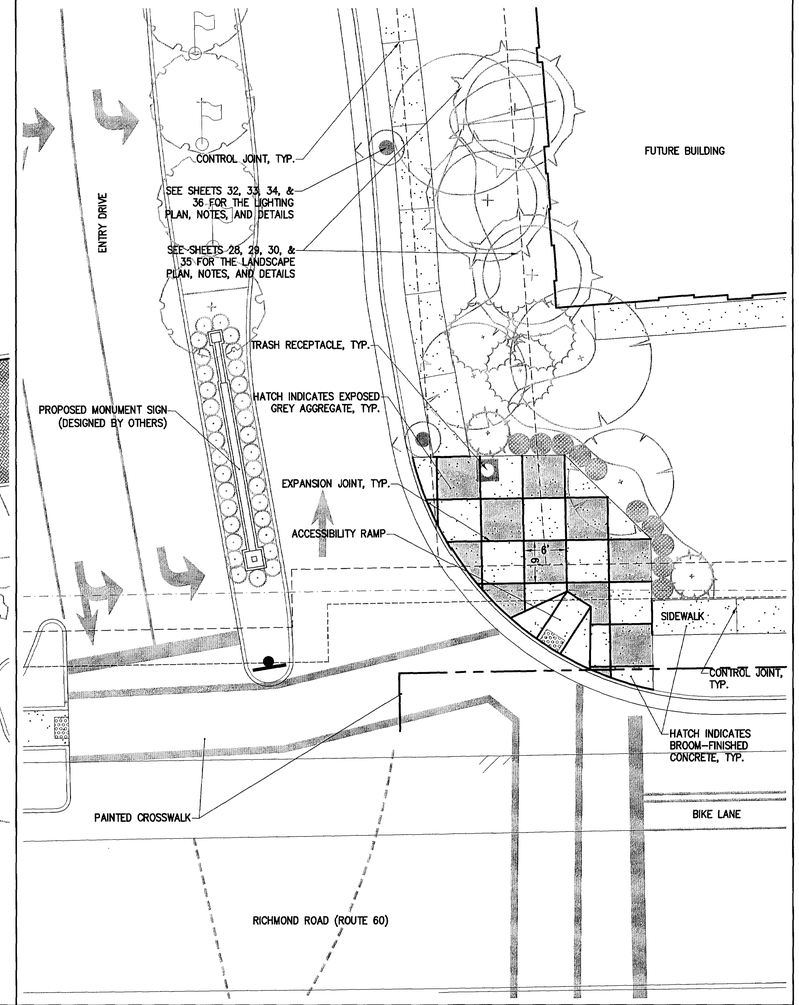
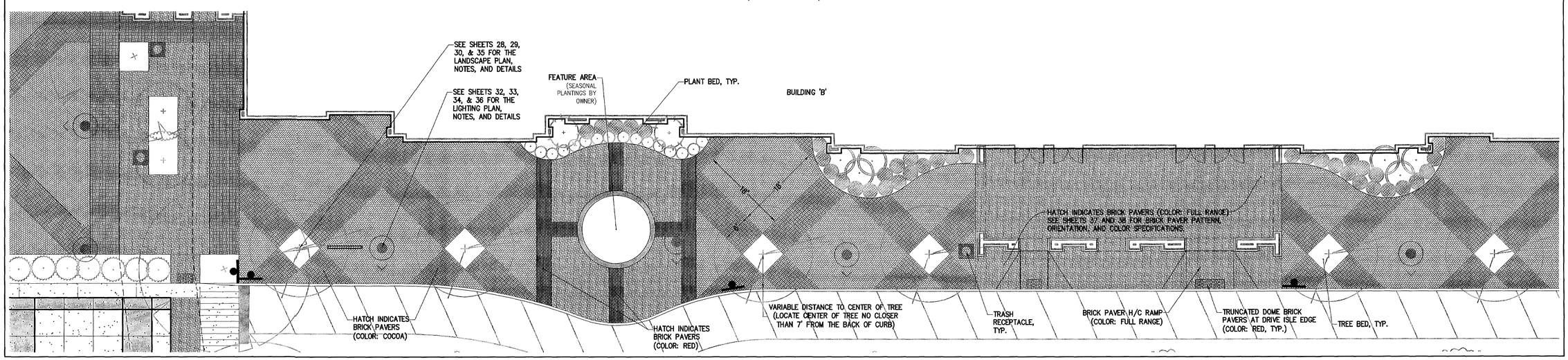


HARDSCAPE PLAN DETAIL
(SCALE: 1"=10')



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Hardscape Notes & Details

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HARDSCAPE PLAN DETAIL
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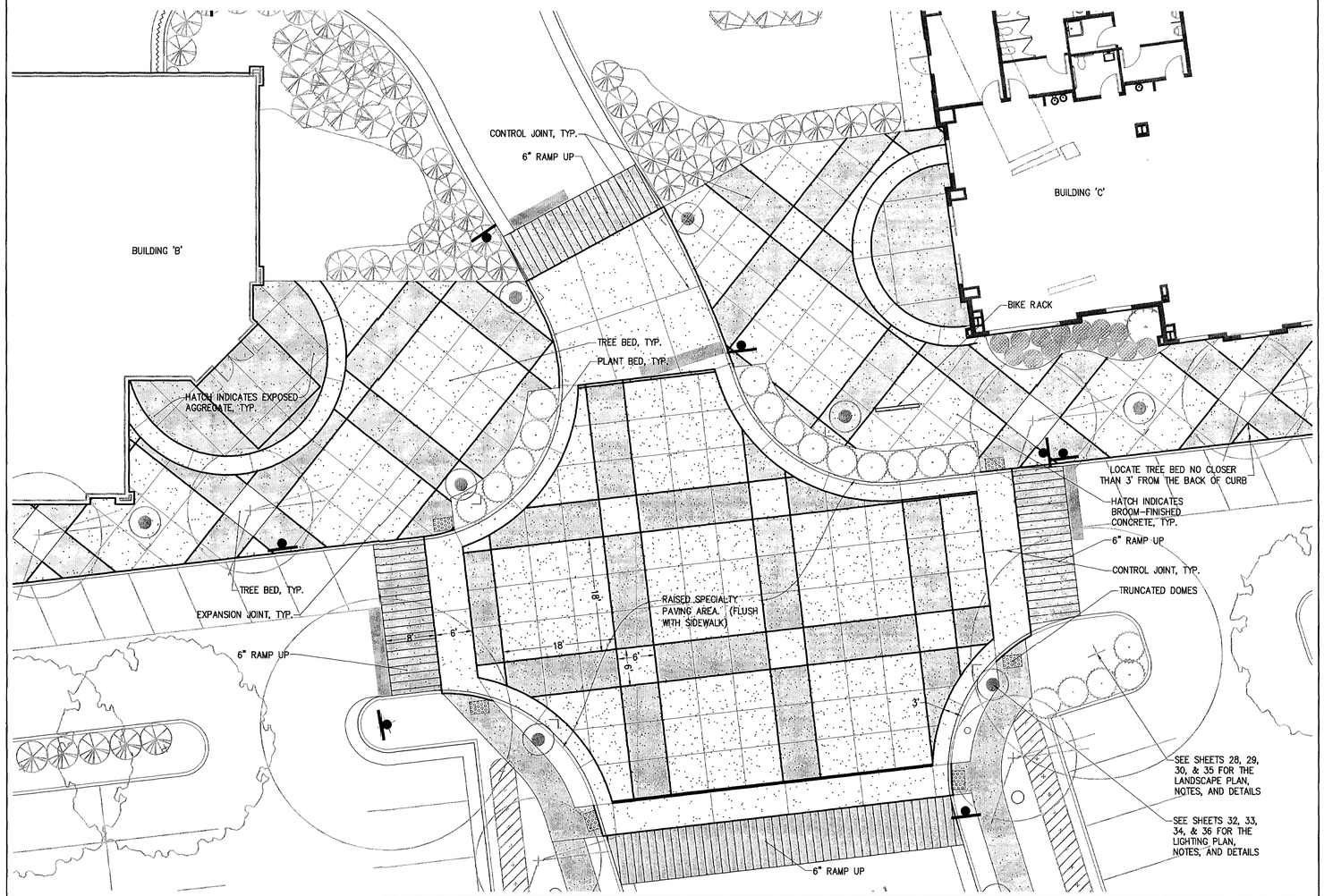

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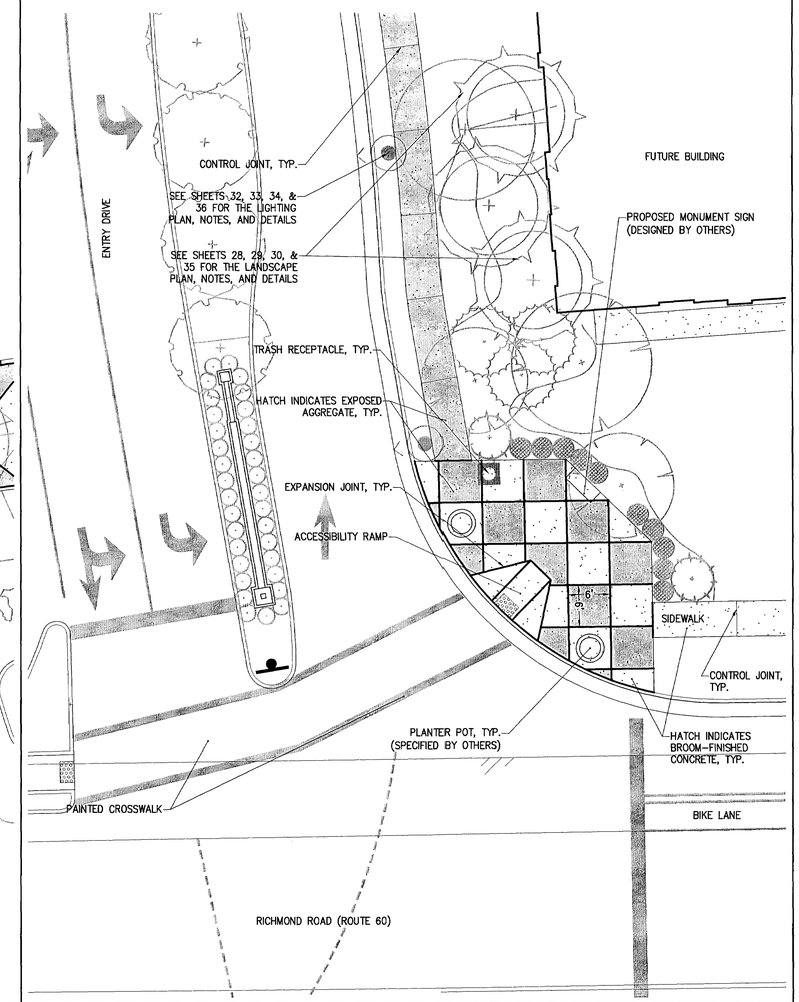

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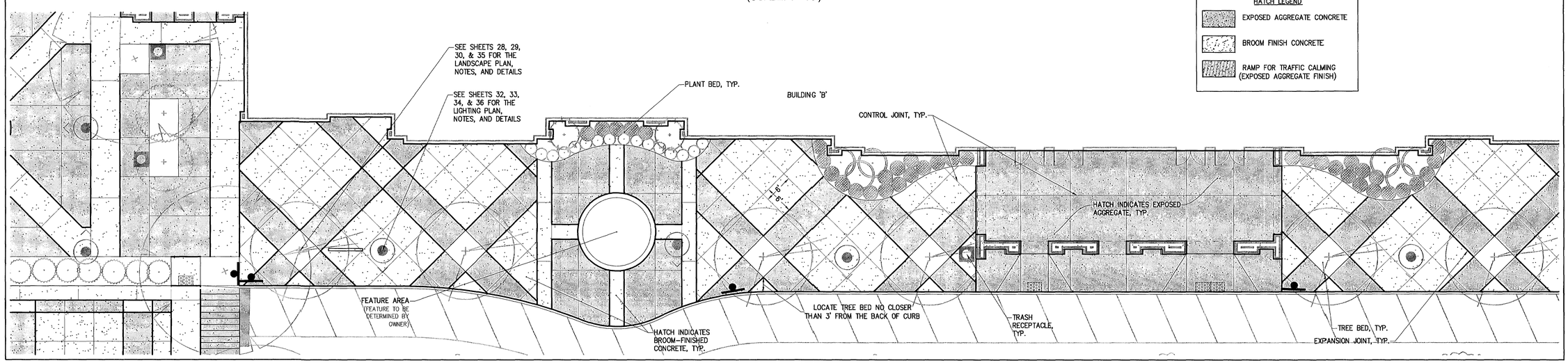

HATCH LEGEND
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- RAMP FOR TRAFFIC CALMING (EXPOSED AGGREGATE FINISH)

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DAVIN R. RODEY
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5/27/11
LICENSED LANDSCAPE ARCHITECT

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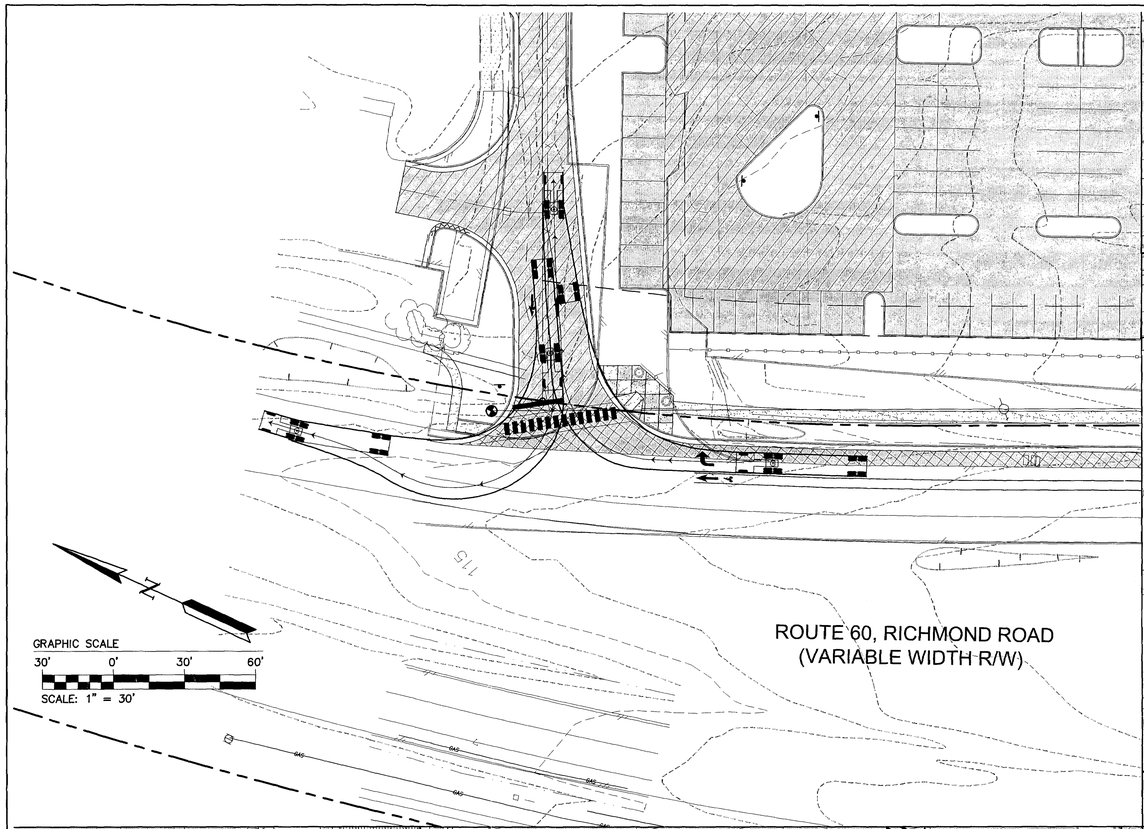

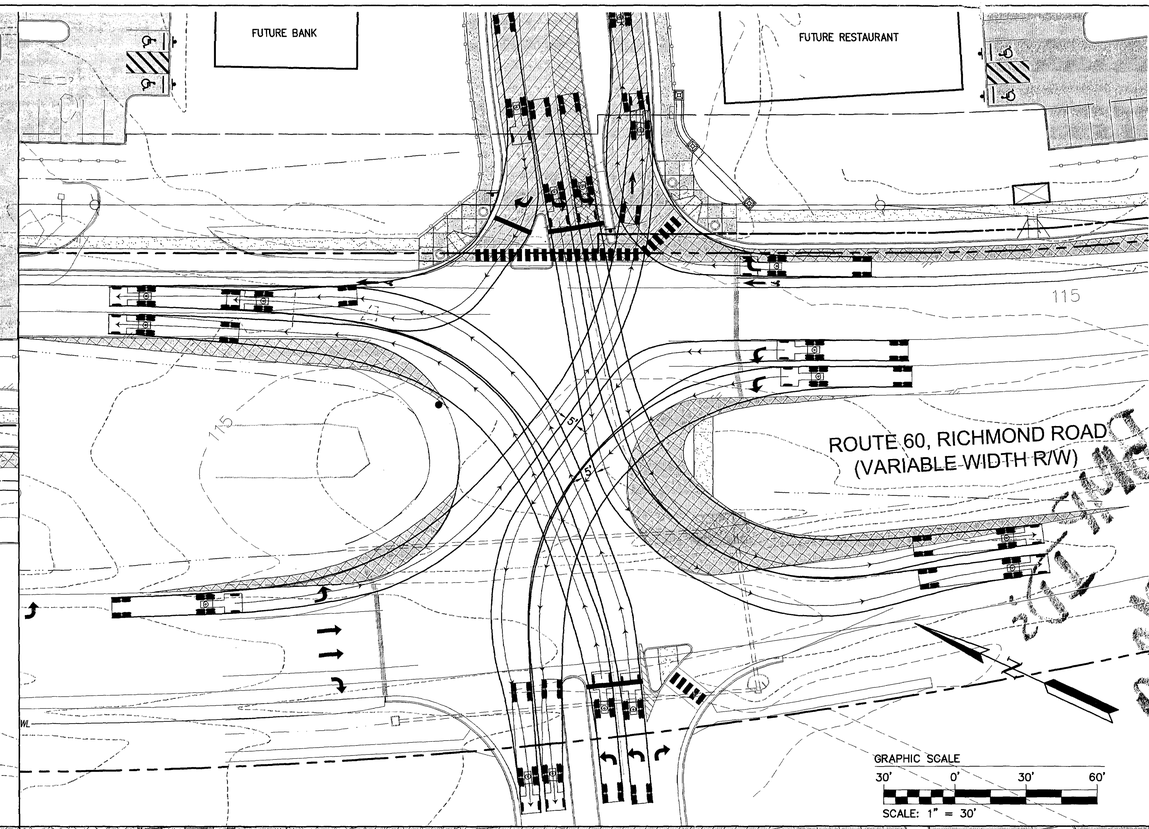

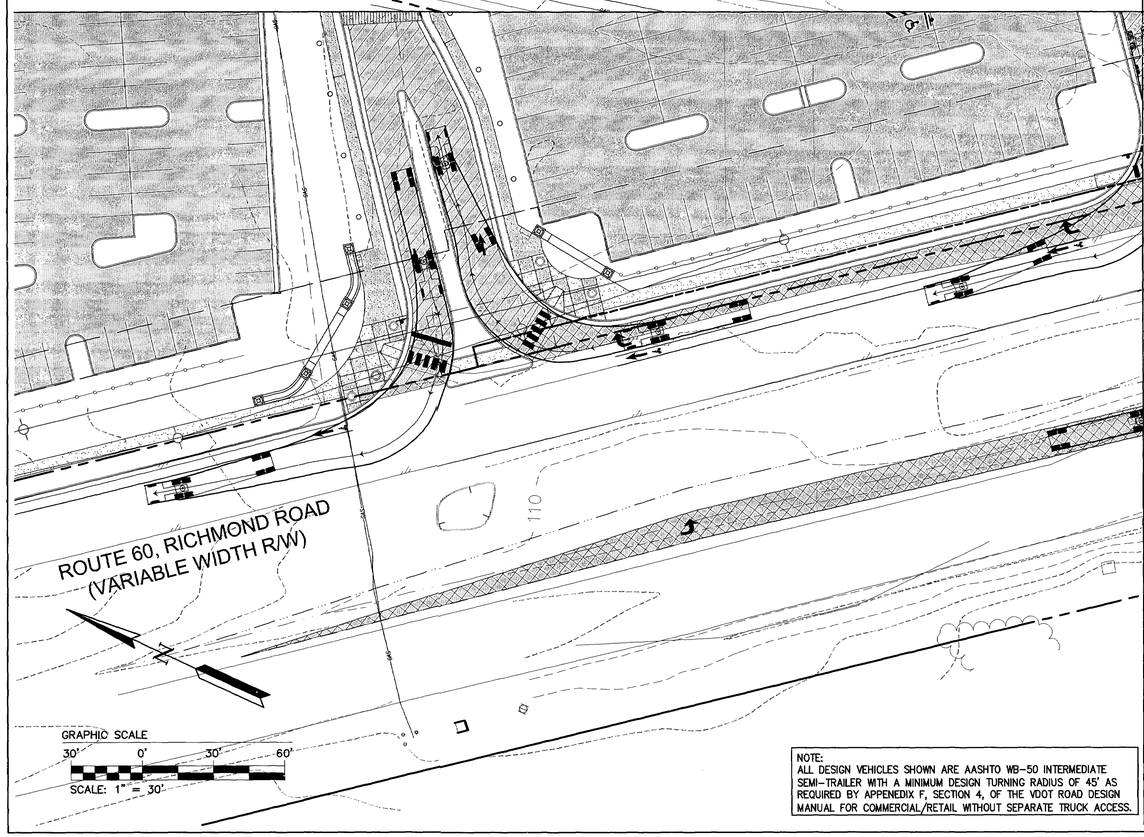

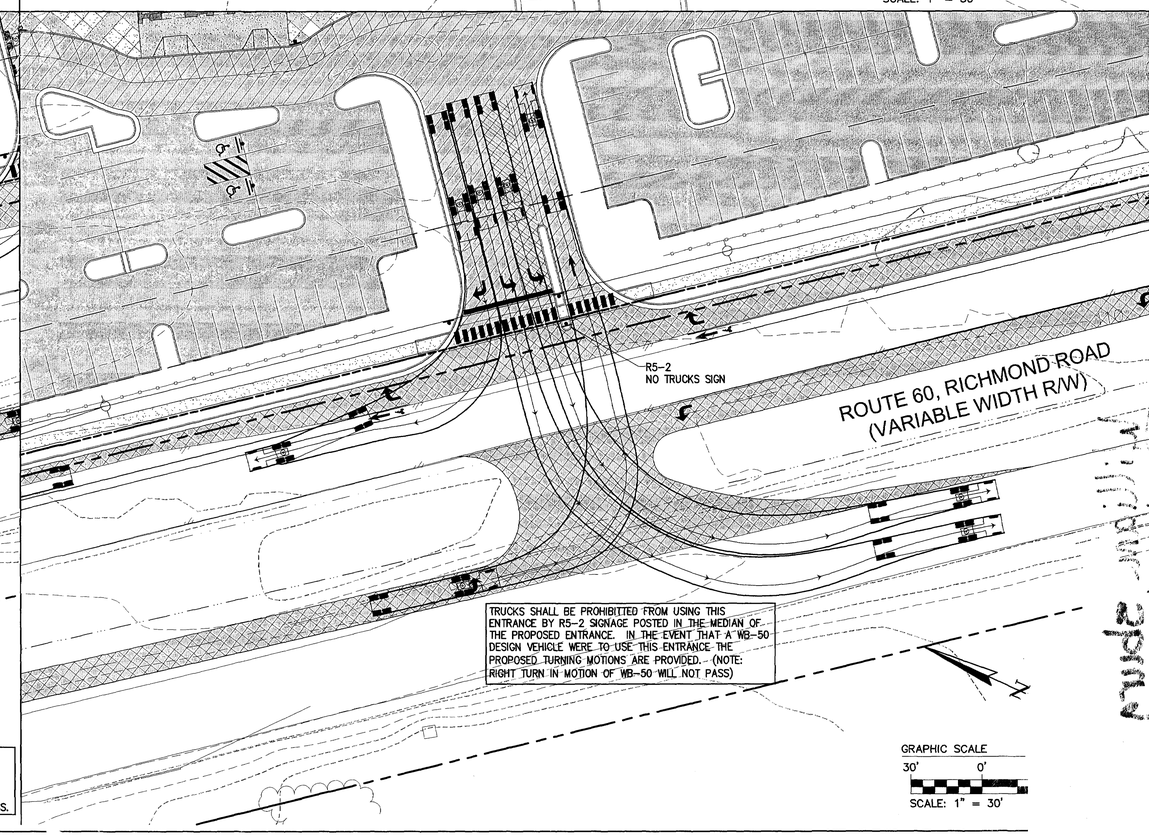

TRUCKS SHALL BE PROHIBITED FROM USING THIS ENTRANCE BY R5-2 SIGNAGE POSTED IN THE MEDIAN OF THE PROPOSED ENTRANCE. IN THE EVENT THAT A WB-50 DESIGN VEHICLE WERE TO USE THIS ENTRANCE THE PROPOSED TURNING MOTIONS ARE PROVIDED. - (NOTE: RIGHT TURN IN MOTION OF WB-50 WILL NOT PASS)

NOTE:
ALL DESIGN VEHICLES SHOWN ARE AASHTO WB-50 INTERMEDIATE SEMI-TRAILER WITH A MINIMUM DESIGN TURNING RADIUS OF 45' AS REQUIRED BY APPENEDIX F, SECTION 4, OF THE VDOT ROAD DESIGN MANUAL FOR COMMERCIAL/RETAIL WITHOUT SEPARATE TRUCK ACCESS.

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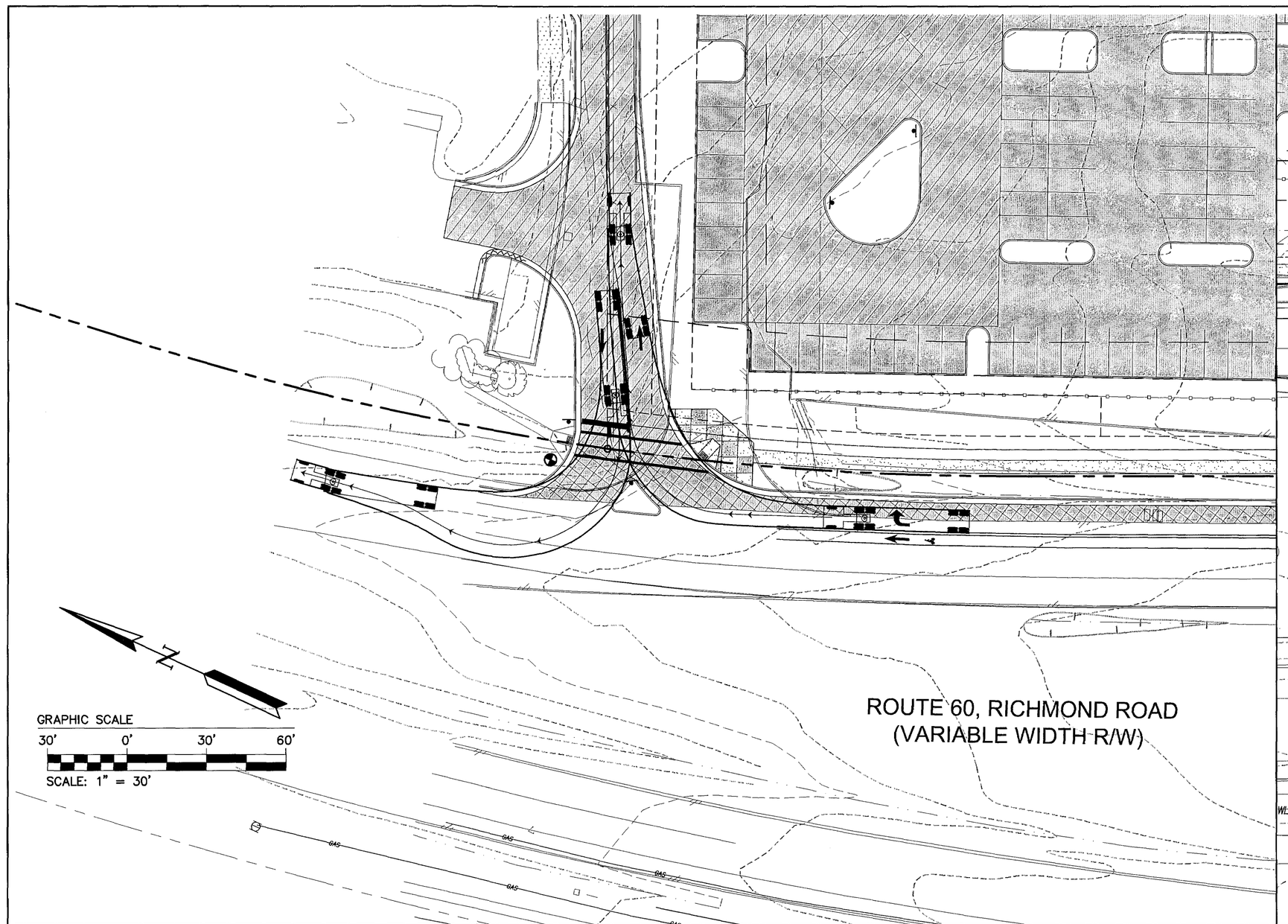
JAC/MJR/SVC
DRAWN

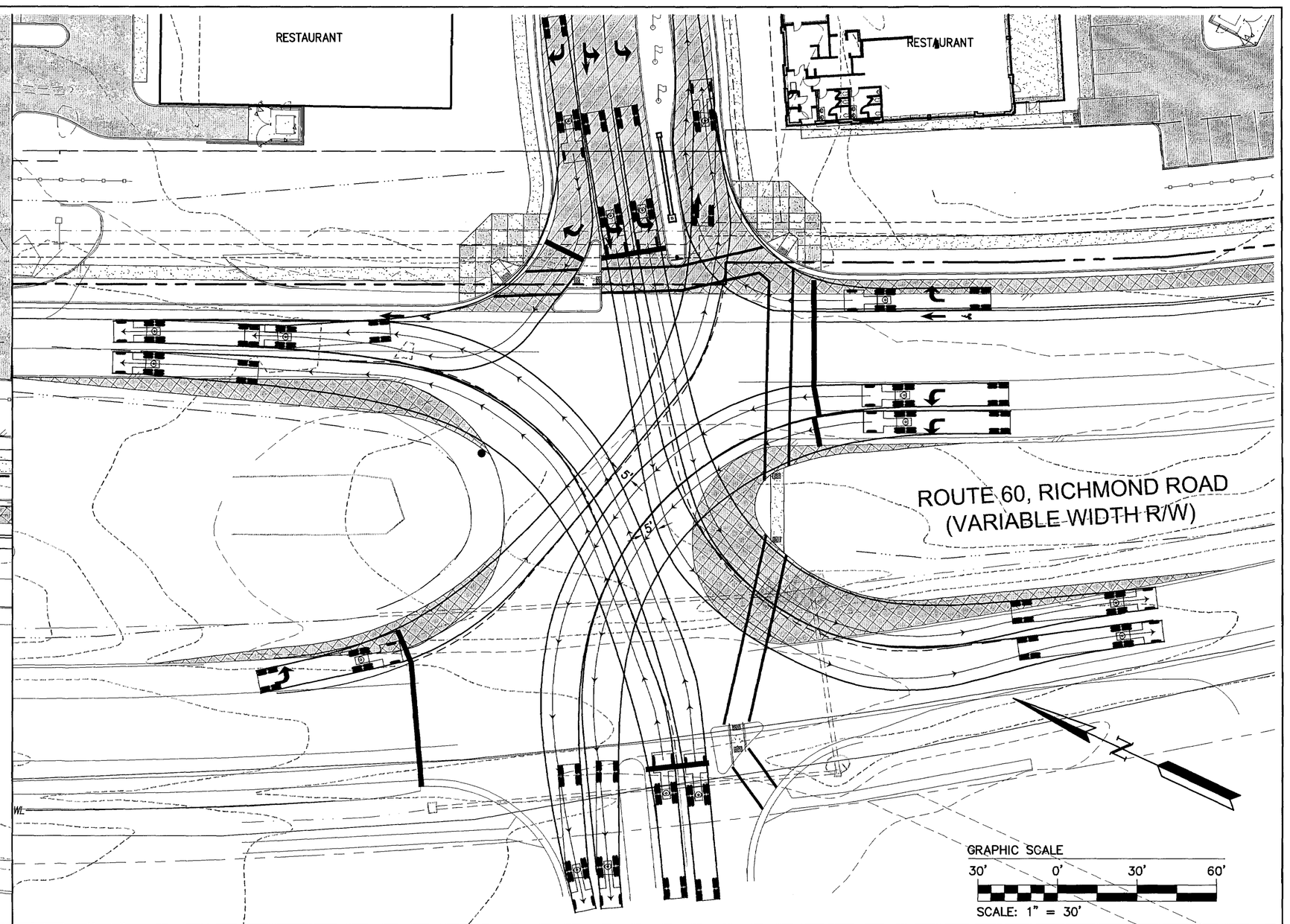
COMMONWEALTH OF VIRGINIA
STATE OF W. KEMBOLE
PROFESSIONAL ENGINEER
No. 34372

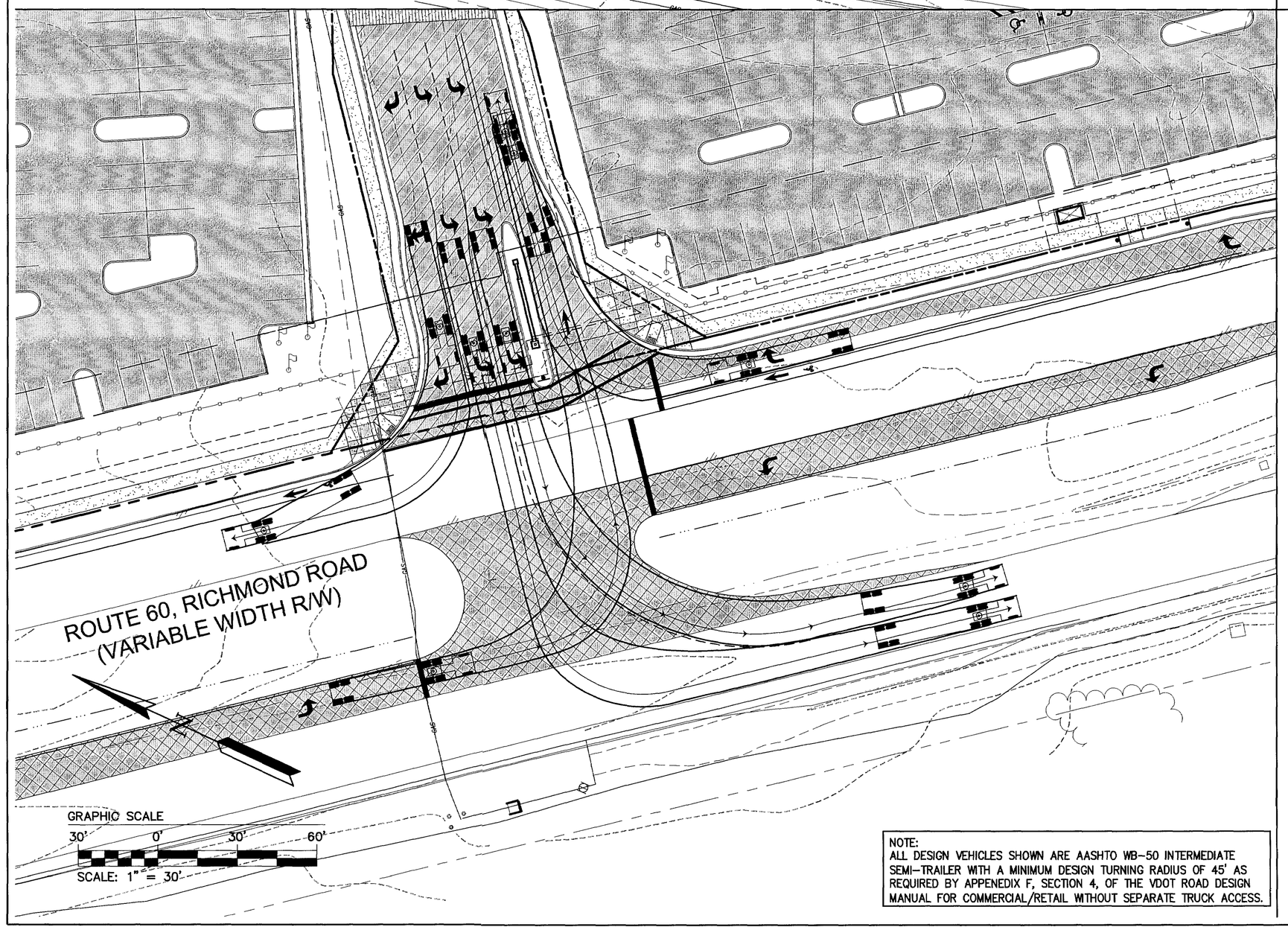
BMP IDs
YR006
YR019

Williamsburg
Pottery
and Annotations SP-077-10
SP-24-11

OS33







NOTE:
ALL DESIGN VEHICLES SHOWN ARE AASHTO WB-50 INTERMEDIATE SEMI-TRAILER WITH A MINIMUM DESIGN TURNING RADIUS OF 45' AS REQUIRED BY APPENEDIX F, SECTION 4, OF THE VDOT ROAD DESIGN MANUAL FOR COMMERCIAL/RETAIL WITHOUT SEPARATE TRUCK ACCESS.

Rev.	Date	Description	Revised By
11	7/25/12	Site Plan Amendment Resubmittal	RAC
10	2/2/12	Site Plan Amendment	MJR
9	11/9/11	Revised Plans per Owner Request	GRR
8	10/27/11	Hardscape Detail Revision Per Client	GRR
7	9/9/11	Revised NW Intersection Design for VDOT Comments	MJR
6	5/27/11	Revised for VDOT & JCSA Comments (Approved Plans)	MJR
5	4/13/11	Revised for VDOT & JCSA Comments	MJR

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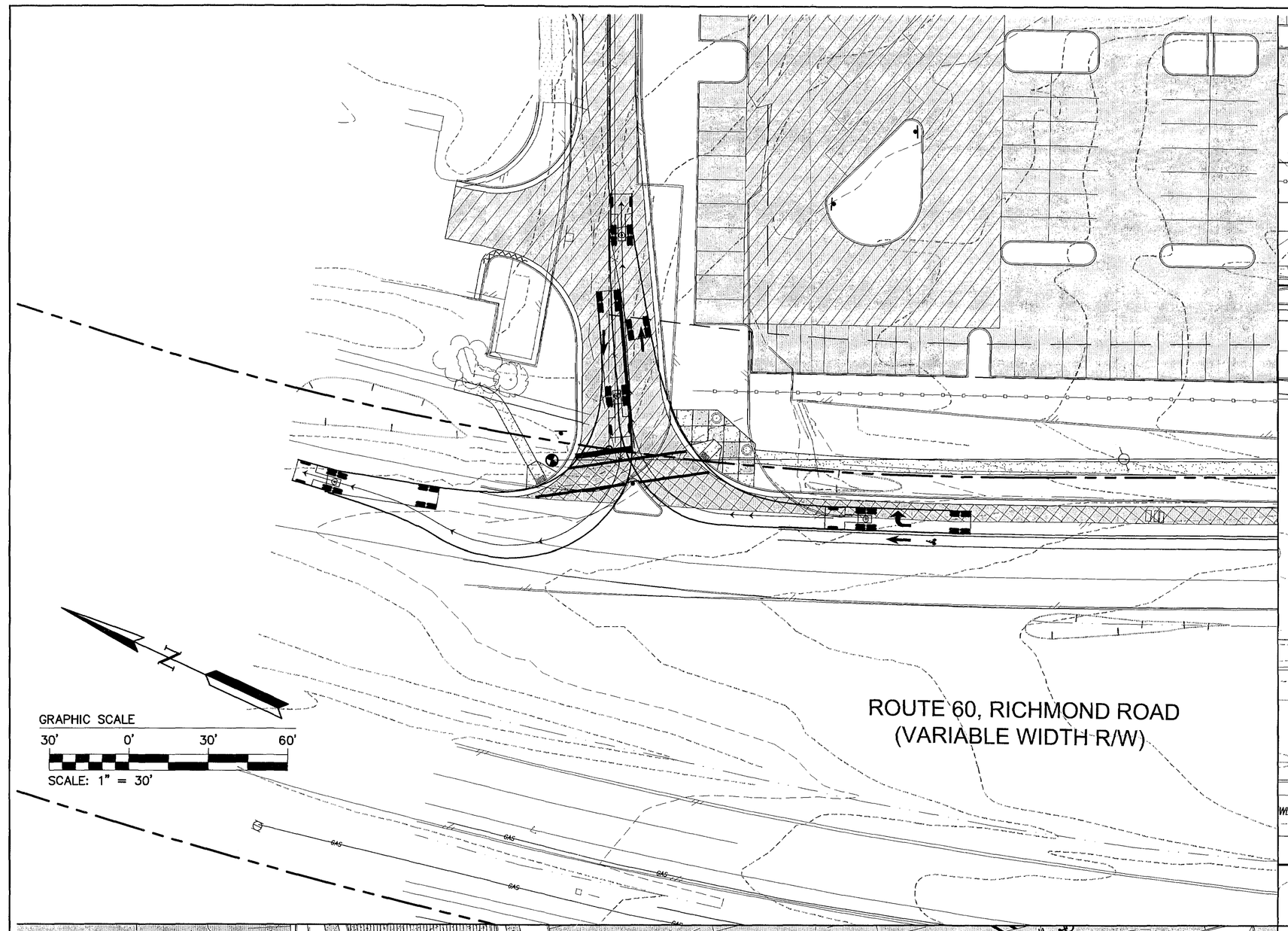
Williamsburg Pottery

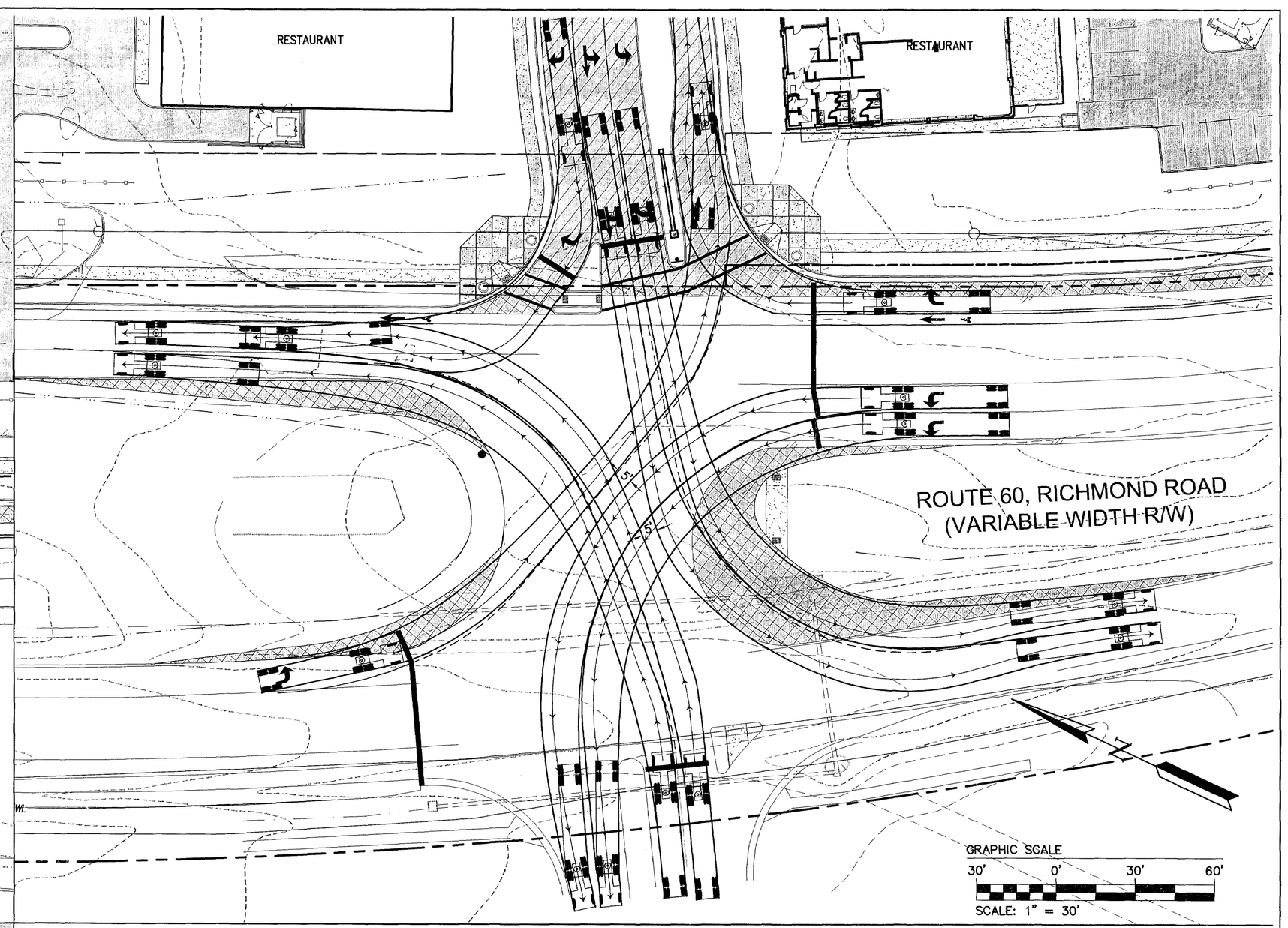
Stonehouse District James City County Virginia

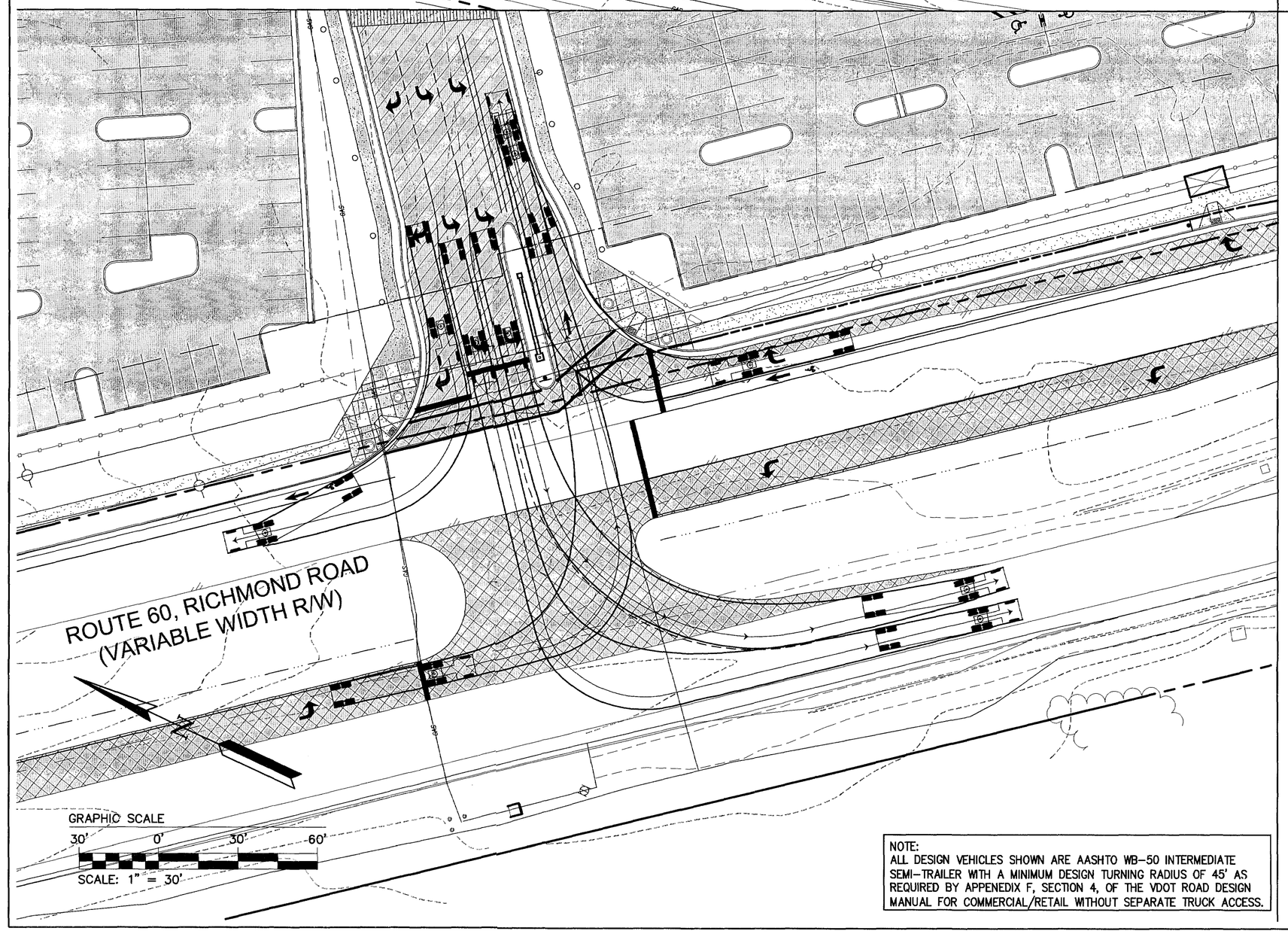
Project Contacts:	RAC/MJR/SVC
Project Number:	9510-04
Scale: 1"=100'	Date: 9/3/2010

Sheet Title:
Turning Movements Plan

Sheet Number
39







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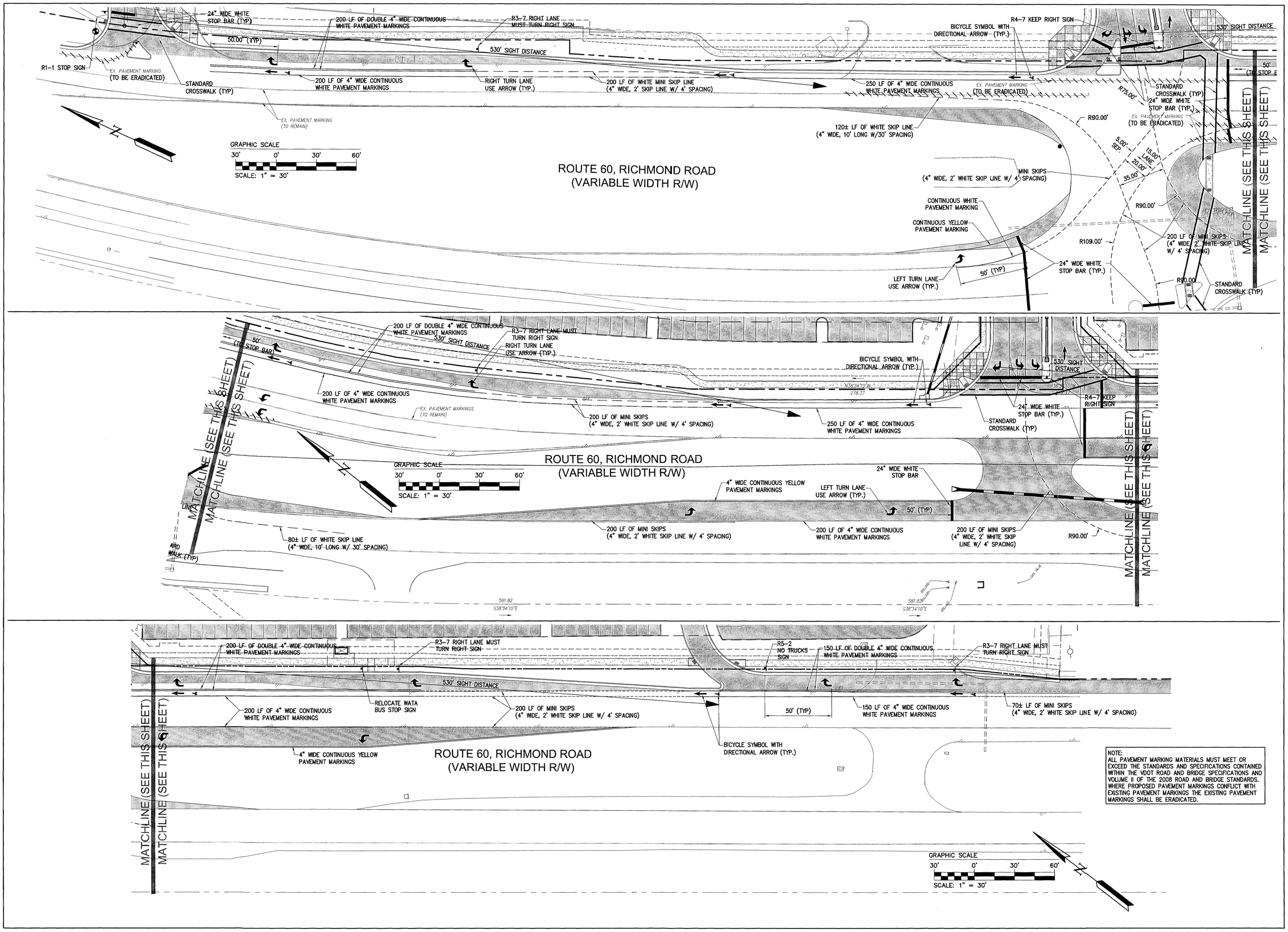

NOTE:
ALL PAVEMENT MARKING MATERIALS MUST MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS CONTAINED WITHIN THE VDOT ROAD AND BRIDGE SPECIFICATIONS AND VOLUME II OF THE 2008 ROAD AND BRIDGE STANDARDS. WHERE PROPOSED PAVEMENT MARKINGS CONFLICT WITH EXISTING PAVEMENT MARKINGS THE EXISTING PAVEMENT MARKINGS SHALL BE ERADICATED.

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Sheet Title:
Pavement Marking Plan

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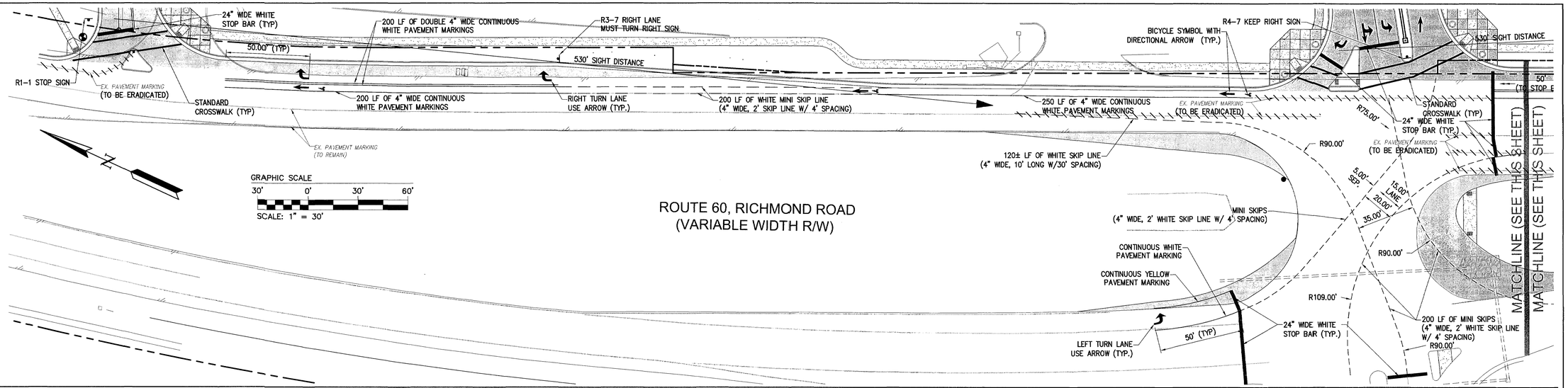
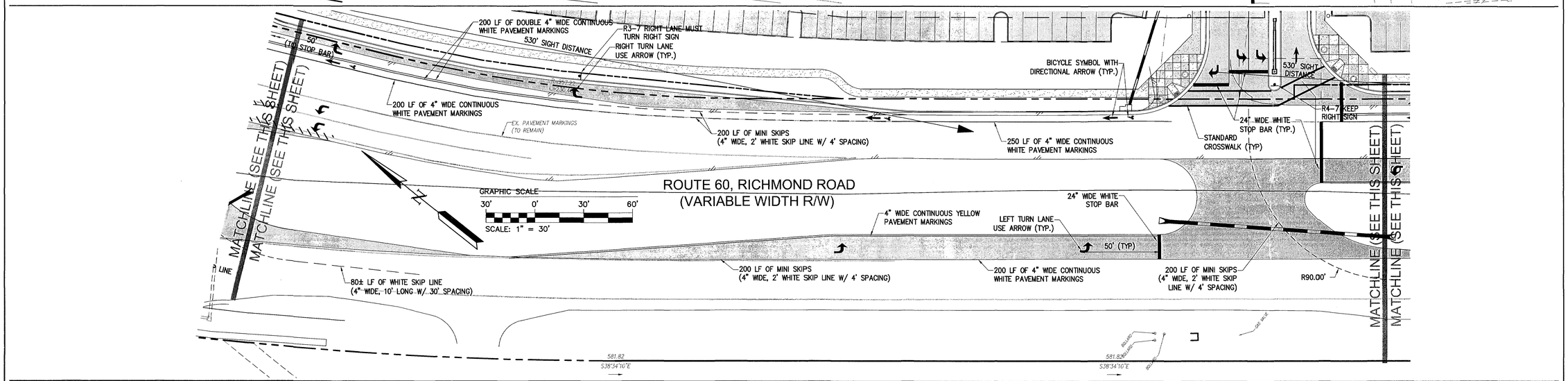
40





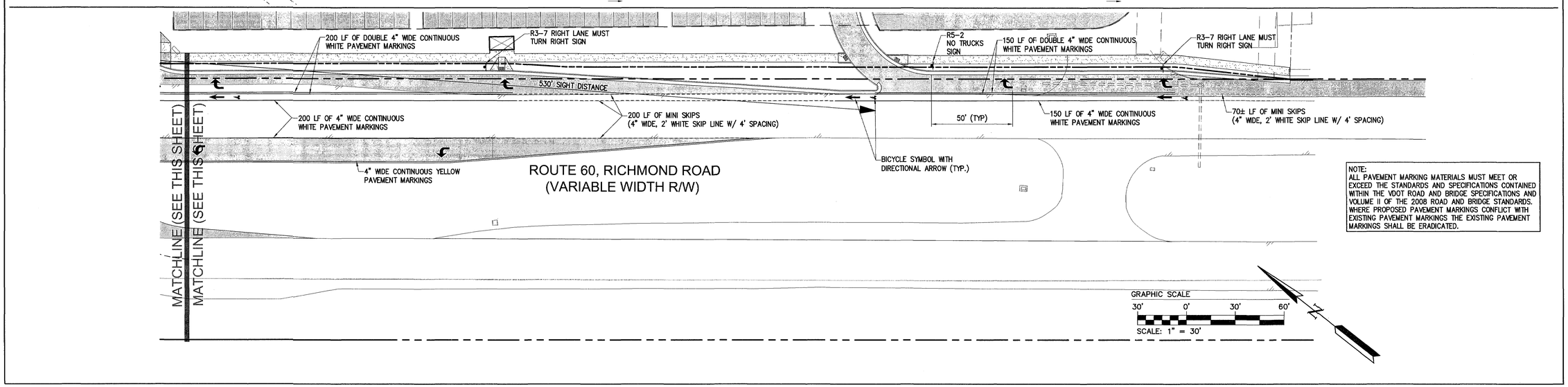


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Table 6H-2, TAPER LENGTH (L)					
POSTED SPEED LIMIT	WIDTH OF OFFSET (FT)				REMARKS
	9	10	11	12	
25 or below	94	105	115	125	L= S²W/60
30	135	150	165	180	"
35	184	205	225	245	"
40	240	267	294	320	"
45	405	450	495	540	L=SW
50	450	500	550	600	"
55	495	550	605	660	"
60	540	600	660	720	"
65	585	650	715	780	"
70<	630	700	770	840	"
MINIMUM LANE CLOSURE TAPER LENGTH ON ALL LIMITED ACCESS ROADWAYS, REGARDLESS OF POSTED SPEED, SHALL BE 1000 FEET.					

Posted Speed Limit	Distance (Feet)
≤ 20	115 - 125
25	155 - 165
30	200 - 210
35	250 - 260
40	305 - 325
45	360 - 380
50	425 - 445
55	500 - 530
60	570 - 600
65	645 - 675
70	730 - 760

Table 6H-3, Buffer Space Table

Posted Speed	Distance (Feet)
≤ 20	115 - 125
25	155 - 165
30	200 - 210
35	250 - 260
40	305 - 320
45	360 - 375
50	425 - 440
55	500 - 520
60	570 - 590

Table 6H-4, Flagger Distance from Work Area

Typical Traffic Control
Stationary Operation on Shoulder
(Figure TTC-4.0)
NOTES

Guidance:

1. *A ROAD WORK AHEAD sign or SHOULDER WORK AHEAD sign should be placed on the left side of the roadway for a divided or one-way street only if the left shoulder is affected.*
2. *Sign spacing should be 1300'-1500' for limited access highways, and on all other roadways 500'-800' where the posted speed limit is greater than 45 mph, and 350-500' where the posted speed limit is 45 mph or greater.*

Standard:

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

	Posted Speed (mph)	
Location	0-35	36+
Transition Spacing	20'	40'
Travelway Spacing	40'	80'

4. **The buffer space length shall be as shown in Table 6H-4 for the posted speed limit.**
5. **Cone Taper Length (L):**

Speed Limit MPH	Taper Length Lane Width in Feet 10	11	12
25	105	115	125
30	150	165	180
35	205	225	245
40	270	295	320
45	450	495	640
50	500	550	600
55	550	605	660
60	600	660	770
65	650	715	780

(Shoulder Taper = 1/3L Minimum)

6. **A shadow vehicle with either an arrow board operating in the caution mode, or at least one high-intensity amber rotating, oscillating, or strobe light shall be parked 50'-100' in advance of the first work crew.**

Option:

7. 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, oscillating, or strobe lights is used.
8. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

9. **When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.**

Typical Traffic Control
Shoulder Closure with Barrier Operation
(Figure TTC 6.0)
NOTES

Guidance:

1. *Sign spacing distance should be 1300'-1500' for limited access highways, and on all other roadways 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.*
2. *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.*

Standard:

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

	Posted Speed (mph)	
Location	0-35	36+
Transition Spacing	20'	40'
Travelway Spacing	40'	80'

5. **The minimum length for a shoulder taper should be 300' on limited access highways, and 1/3 L for all other roadways. (See note 5, TTC-4.0 for values of L).**
6. **Barrier transition slope ratio shall be as follows:**
   70 mph=22:1 60 mph=19:1 50 mph=16:1 40 mph=1.3:1 30 ≥ mph=10:1
   65 mph=20:1 55 mph=17:1 45 mph=14:1 35 mph=1 1:1
   When the barrier transition slope is on a horizontal alignment, the total offset shall be prorated around the curve in lieu of a straight-line slope.
7. **End treatment of 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 Appendix A, Page A-4 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.
8. **Barrier vertical panels 8 inches in width and 12 inches in height shall be placed on top of the concrete barrier and spaced 96' on centers along the parallel or tangent sections and 48' on centers along the transition or taper sections. Reflectorized surface shall be fluorescent orange prismatic lens sheeting. The light at the breakpoint: where the taper ends and the barrier becomes parallel to the roadway shall be a Type A flashing light. Barrier delineators shall be installed along the traffic side of the concrete barrier in accordance with Section 702 of VDOT's Road and Bridge Specifications.**

TYPICAL TRAFFIC CONTROL
Turn Lane Closure Operation
(Figure TTC-23.0)
NOTES

Guidance:

1. *Sign spacing distance 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.*

Standard:

2. **On roadways having a median wider than 8', left and right sign assemblies shall be used.**
3. **To prevent accidental intrusion into the work area, cone spacing shall not exceed 20' on centers.**

Option:

4. This layout may be used for either right or left turn lane closures.
5. For a high volume of turning movements, additional traffic control devices, such as signs (graphic "NO LEFT TURN", "LEFT LANE MUST TURN LEFT" or "LEFT TURN CLOSED AHEAD"), cones and vehicles may be used.

TYPICAL TRAFFIC CONTROL
Signing For Speed Limit And Fine Signs In Work Zones
(Figure TTC-35.0)
NOTES

Standard:

1. **The District Traffic Engineer must approve reducing the speed limit in a work zone after performing a Traffic Engineering study prior to the use of this layout.**

Option:

2. This layout depicts signing requirements for speed limits and increased fines in work zones. Additional signing and traffic control devices may be required based on the operation being performed.

Guidance:

3. *Sign spacing distance should be 1300'-1500' for limited access highway, and on all other roadways 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.*

Standard:

4. **On roadways having a median wider than 8', left and right sign assemblies shall be required.**
5. **The use of the "NOTICE - UP TO $500 FINE FOR EXCEEDING SPEED LIMIT IN WORK ZONE" sign shall be approved by the District Traffic Engineer prior to installation. The size shown shall be used on Major Primary and Interstate highway systems. Existing NOTICE - $500 MAXIMUM FINE FOR EXCEEDING SPEED LIMIT IN WORK ZONE sign may be used in order to utilize existing stock, however, mixing of the signs shall not occur on an approach.**

Option:

6. For Secondary and Minor Primary road systems, a 66" x 42" sign may be used.

Standard:

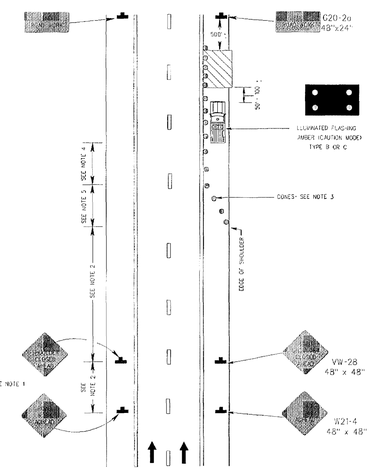
7. **If the entire project is signed for a reduced speed, and an original speed limit sign is not within 1000 linear feet of the "END CONSTRUCTION" sign, signs depicting the original speed limit shall be erected 500'± past the "END CONSTRUCTION" sign. On secondaries with unposted speed limits, an "END XX SPEED LIMIT" (VR-5) sign shall be used in place of erecting an R2-1 sign. If only part of the project is signed for a reduced speed, then the original speed limit shall be posted 500'± past the end point of reduced speed.**

Option:

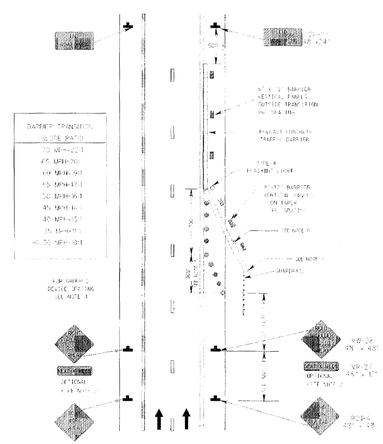
8. Experience has shown that compliance to the reduced speed signing is greater if these signs are placed as close to the work as possible, as opposed to placement prior to the advance warning signs ("ROAD WORK AHEAD", etc.).
9. The W3-5 graphic signs or REDUCED SPEED AHEAD (R2-5a) signs are only required if the speed limit is being reduced in the work zone. Either type of sign may be used until January 1, 2009, in which time only the W3-5 graphic sign will be allowed.

Standard:

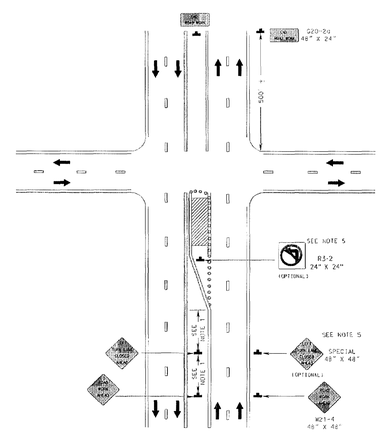
10. **Mixing of W3-5 and R2-5a signs shall not occur on an approach.**



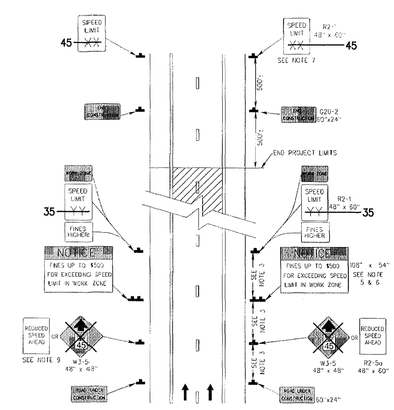
Stationary Operation on Shoulder
(Figure TTC-4.0)



Shoulder Closure with Barrier Operation
(Figure TTC 6.0)



Turn Lane Closure Operation
(Figure TTC-23.0)



Signing For Speed Limit And Fine Signs In Work Zones
(Figure TTC-35.0)

Route 60 Lane Closure Schedule

Termini	Direction	Closure Time	Required Lane Capacity
FROM: N. Newport News City Line	East/West	6 a.m. to 9 a.m.	No lanes closed
		9 a.m. to 3 p.m.	1 lane open
		3 p.m. to 7 p.m.	No lanes closed
TO: York/James City County Line		7 p.m. to 6 a.m.	1 lane open
FROM: Grove Area York/James City County Line TO: E. Williamsburg City Line	East/West	6 a.m. to 10 p.m.	No lanes closed
		10 p.m. to 6 a.m.	1 lane open
By Pass Rd. (Rte 60) FROM:W. Williamsburg City Line TO:E. Williamsburg City Line	East/West	6 a.m. to 10 p.m.	No lanes closed
		10 p.m. to 6 a.m.	1 lane open
FROM: W. Williamsburg City Line TO: Toano, Rte 610 Forge Rd.	East/West	6 a.m. to 10 p.m.	No lanes closed
		10 p.m. to 6 a.m.	1 lane open

TEMPORARY TRAFFIC CONTROL PLAN:

GENERAL NOTES
- TMP TYPE: TYPE A (PAVEMENT WIDENING OR ADDING TURN LANES OR ENTRANCES)
- WORK ZONE LOCATION: RICHMOND ROAD (ROUTE 60) APPROX. 0.6 MI. WEST OF LIGHTFOOT ROAD
- LENGTH/WIDTH: 0.4± MILES, 16' WIDE (TYPICAL)
- LANES AFFECTED: WESTBOUND RIGHT SHOULDER, WESTBOUND LEFT SHOULDER, MEDIAN CROSSOVER
- HOURS ACTIVE: SEE ALLOWABLE CLOSURE SCHEDULE (THIS SHEET)
- CONSTRUCTION STAGING AREA: PROVIDED ON SITE (OUTSIDE OF R/W)
- PROPOSED TRAFFIC CONTROL: SEE TYPICAL DETAILS (THIS SHEET)
- AFFECTED ENTRANCES, INTERSECTIONS, PEDESTRIAN ACCESS: TTC MEASURES NEED TO ALLOW FOR THE CONTINUED USE OF THE COMMERCIAL ENTRANCES ALONG WESTBOUND ROUTE 60 DURING THE DURATION OF CONSTRUCTION.
- MAJOR TRAVELERS: COMMUTERS, TOURISTS

TYPICAL SECTIONS
SEE SHEET 22

SPECIAL DETAILS
SEE TTC NOTES AND DETAILS THIS SHEET

PUBLIC COMMUNICATIONS PLAN
- PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER/RESIDENCY ADMINISTRATOR OF SCHEDULED WORK PLANS AND TRAFFIC DELAYS.
- IN THE EVENT OF UNSCHEDULED TRAFFIC DELAYS THE CONTRACTOR SHALL NOTIFIY THE PROJECT MANAGER/RESIDENCY ADMINISTRATOR, REGIONAL OPERATIONS MANAGER AND THE PUBLIC AFFAIRS STAFF.

TRANSPORTATION OPERATIONS PLAN
WORK ZONE LENGTH LESS THAN 0.5 MILES, NOT REQUIRED

WORK AREA PROTECTION NARRATIVE:

THE IMPROVEMENTS TO RICHMOND ROAD, ROUTE 60, ASSOCIATED WITH THIS COMMERCIAL DEVELOPMENT CAN BE SEPARATED INTO THREE DIFFERENT CATAGORIES:

- THE ADDITION OF RIGHT TURN LANES AND TAPERS TO BE CONSTRUCTED ALONG THE WEST BOUND TRAVEL LANES OF RICHMOND ROAD (ROUTE 60).
- LEFT TURN LANE IMPROVEMENTS ARE BEING PROPOSED AND NEW SIGNALIZED MEDIAN CROSSOVER.
- THE WIDENING OF THE EXISTING MEDIAN CROSSOVER AT THE COLONIAL HERITAGE COMMERCIAL ENTRANCE TO FACILITATE DUAL OPPOSING WB-50 TURNING MOVEMENTS.

BASED ON THE CURRENT 45 MPH SPEED LIMIT AND EXISTING ADT THE REQUIRED CLEARANCE (C) TO FIXED OBJECTS IS 15' AND REQUIRES POSITIVE (TYPE A) BARRIERS/CHANNELIZING DEVICES. AS SPECIFIED IN THE 2005 VIRGINIA WORK AREA PROTECTION MANUAL.

TO MINIMIZE THE NEED FOR POSITIVE (TYPE A) BARRIERS, THIS PLAN CALLS FOR THE TEMPORARY REDUCTION IN SPEED LIMIT TO 35 MILES PER HOUR, WHICH WILL ALLOW FOR A REQUIRED CLEARANCE (C) OF 8' AND GROUP 2 (DRUM) BARRICADES/CHANNELIZING DEVICES. TTC 35.0 SHALL BE FOLLOWED TO REDUCE TEMPORARILY REDUCE THE SPEED ADJACENT TO THE WORK ZONE.

ALL PROPOSED TURN LANE/PAVEMENT WIDENING IMPROVEMENTS WILL REQUIRE TTC 4.0 PROTECTION. ANY PROPOSED FIXED OBJECTS (TO INCLUDE DROP INLETS, PIPE, AND OPEN EXCAVATION WITHIN THE CLEARANCE (C) DISTANCE OF 8' OF THE EXISTING EDGE OF TRAVELED WAY WILL REQUIRE POSITIVE (TYPE A) PROTECTION IN ACCORDANCE WITH TTC 6.0. MEDIAN WORK TO INCLUDE THE TEMPORARY CLOSING OF LEFT TURN LANES AS THE EXISTING COLONIAL HERITAGE CROSSOVER SHALL INCLUDE TTC 23.0 PROTECTION.

WORK SHALL ONLY PROCEED ON ONE SIDE OF THE HIGHWAY AT A TIME. AT NO POINT SHALL THE LEFT AND RIGHT SHOULDERS BE CLOSED AT THE SAME TIME.

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Scale: 1"=100'	Date: 9/3/2010
Sheet Title: Transportation Maintenance Plan	
Sheet Number	41

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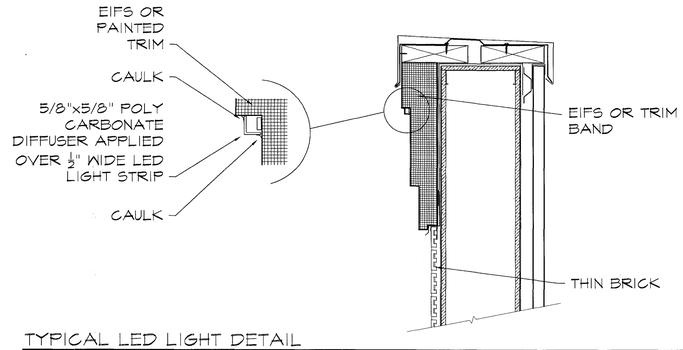
WILLIAMSBURG POTTERY

RICHMOND ROAD, WILLIAMSBURG, VA

BUILDING A – LED LIGHTING



TYPICAL LED LIGHT DETAIL

SCALE: NTS

SCOPE OF WORK

INCLUDES INSTALLATION OF LED STRIP LIGHTING, FIXTURES, AND ALL REQUIRED DEVICES TO RUN SET LED. NO OTHER CONSTRUCTION IS TO OCCUR.

GENERAL NOTES

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B. FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT, INSURANCES, PERMITS, AND INSPECTIONS, NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS AS SHOWN AND SPECIFIED. THE SCOPE OF WORK SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:
- B.A. LED STRIP FIXTURES
- B.B. LANDSCAPE FIXTURES
- B.C. TRANSFORMERS AND DRIVERS

C. ALL WORK SHALL CONFORM TO THE NEC, NFPA, ADA, AND LOCAL AUTHORITIES HAVING JURISDICTION. SUBMIT CERTIFICATES OF UNDERWRITER INSPECTION FROM A RECOGNIZED AGENCY UPON COMPLETION OF WORK.

D. FASTENINGS AND SUPPORTS AS FOLLOWS:
- D.A. HOLLOW TILE – TOGGLE BOLTS
- D.B. WOOD LAG SCREWS OR BOLTS
- D.C. SOLID MASONARY – METALLIC EXPANSION SHIELDS AND MACHINE BOLTS.
- D.D. ALL SUPPORT SHALL COME FROM BUILDING STRUCTURE.

E. ALL ELECTRICAL DEVICES SHALL BE NEW AND U.I. APPROVED.

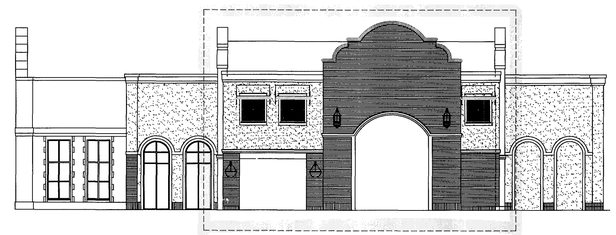
F. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT ENVIRONMENTAL REGULATIONS.

WHITE LED 4100K ROOF LINE

WHITE LED 4100K WINDOWS

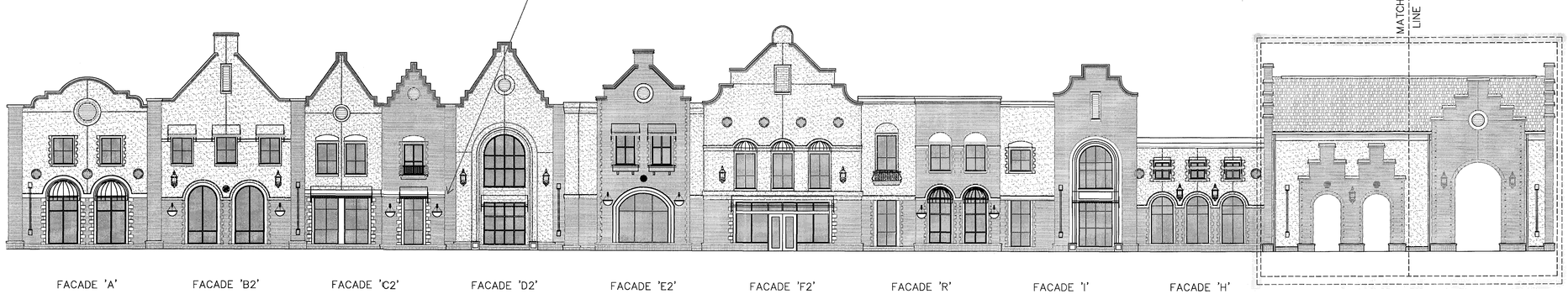
ALL RGB LED

Building A North Elevation



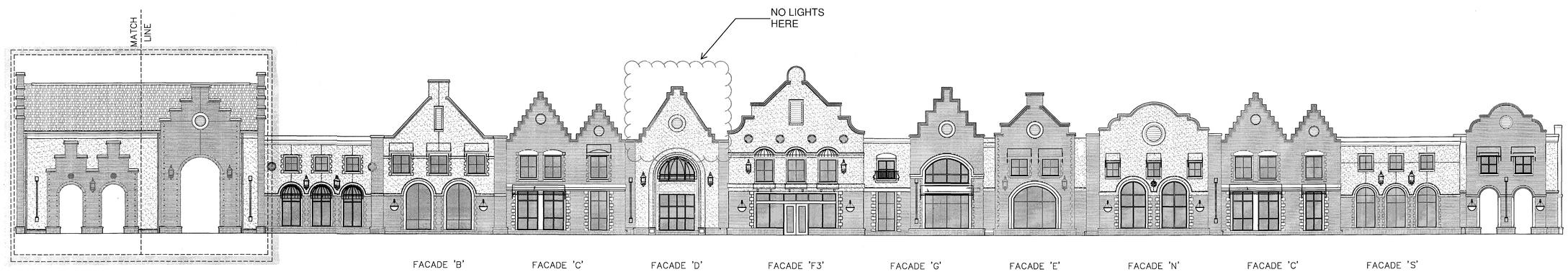
Building A South Elevation

EXTERIOR LIGHT SCONCES ARE TO HAVE FROSTED GLASS TO OBSCURE LIGHT SOURCE. TYPICAL AT ALL LOCATIONS



FACADE 'A' FACADE 'B2' FACADE 'C2' FACADE 'D2' FACADE 'E2' FACADE 'F2' FACADE 'R' FACADE 'I' FACADE 'H'

NO LIGHTS HERE



FACADE 'B' FACADE 'C' FACADE 'D' FACADE 'F3' FACADE 'G' FACADE 'E' FACADE 'N' FACADE 'C' FACADE 'S'

lighting > electrical > energy
technology > signs

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WILLIAMSBURG POTTERY
RICHMOND ROAD
WILLIAMSBURG, VA

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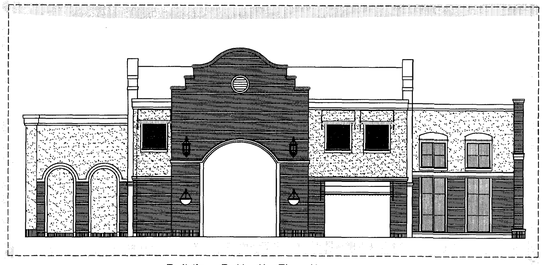
MARK DATE	
DATE:	10/12/11
PROJECT NO:	
CAD DWG FILE:	
DRAWN BY:	BT
CHK'D BY:	DM
SHEET TITLE	OUTSIDE LIGHTING PLANS

A-1

WILLIAMSBURG POTTERY

RICHMOND ROAD, WILLIAMSBURG, VA

BUILDING B – LED LIGHTING



Building B North Elevation

Building B South Elevation

SCOPE OF WORK

INCLUDES INSTALLATION OF LED STRIP LIGHTING, FIXTURES, AND ALL REQUIRED DEVICES TO RUN SET LED. NO OTHER CONSTRUCTION IS TO OCCUR.

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E. ALL ELECTRICAL DEVICES SHALL BE NEW AND U.I. APPROVED.

F. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT ENVIRONMENTAL REGULATIONS.

WHITE LED 4100K ROOF LINE

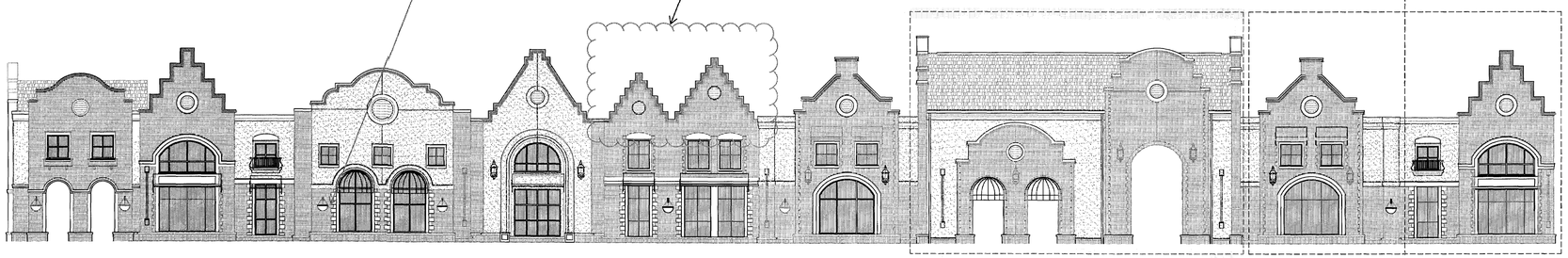
WHITE LED 4100K WINDOWS

ALL RGB LED

EXTERIOR LIGHT SCONCES ARE TO HAVE FROSTED GLASS TO OBSCURE LIGHT SOURCE. TYPICAL AT ALL LOCATIONS

NO LIGHTS HERE

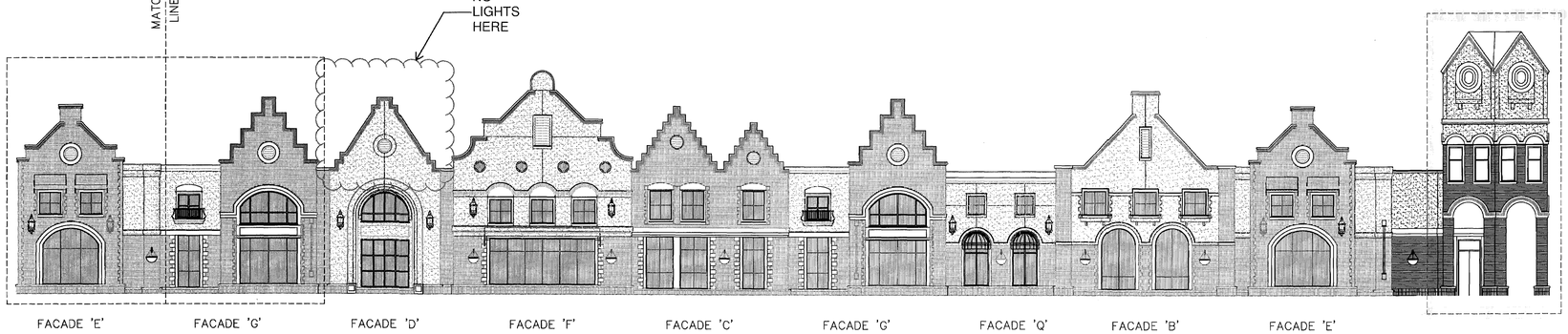
MATCH LINE



FACADE 'G' FACADE 'N' FACADE 'D' FACADE 'C' FACADE 'E' FACADE 'E' FACADE 'G'

MATCH LINE

NO LIGHTS HERE



FACADE 'E' FACADE 'G' FACADE 'D' FACADE 'F' FACADE 'C' FACADE 'G' FACADE 'Q' FACADE 'B' FACADE 'E'

lighting > electrical > energy
technology > signs

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WILLIAMSBURG, VA

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MARK DATE	
DATE:	10/12/11
PROJECT NO:	
CAD DWG FILE:	
DRAWN BY:	BT
CHK'D BY:	DM
SHEET TITLE	OUTSIDE LIGHTING PLANS

A-2

WILLIAMSBURG POTTERY

RICHMOND ROAD, WILLIAMSBURG, VA

BUILDING C – LED LIGHTING

WHITE LED 4100K ROOF LINE

WHITE LED 4100K WINDOWS

ALL RGB LED

SCOPE OF WORK

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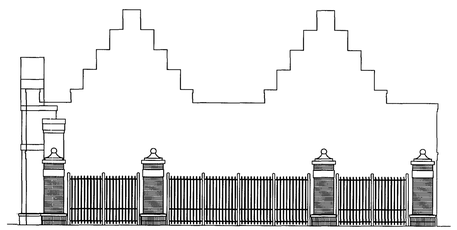
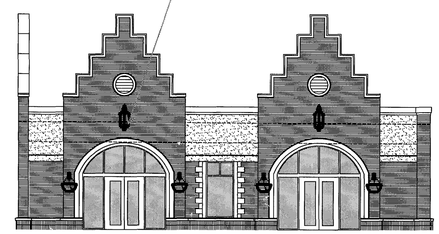
EXTERIOR LIGHT SCONCES ARE TO HAVE FROSTED GLASS TO OBSCURE LIGHT SOURCE. TYPICAL AT ALL LOCATIONS

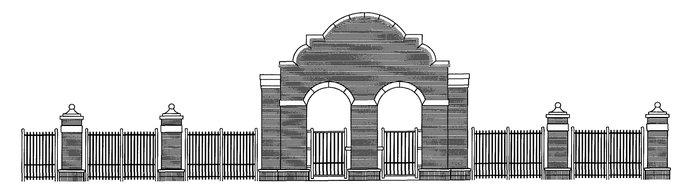
NORTH FACADE



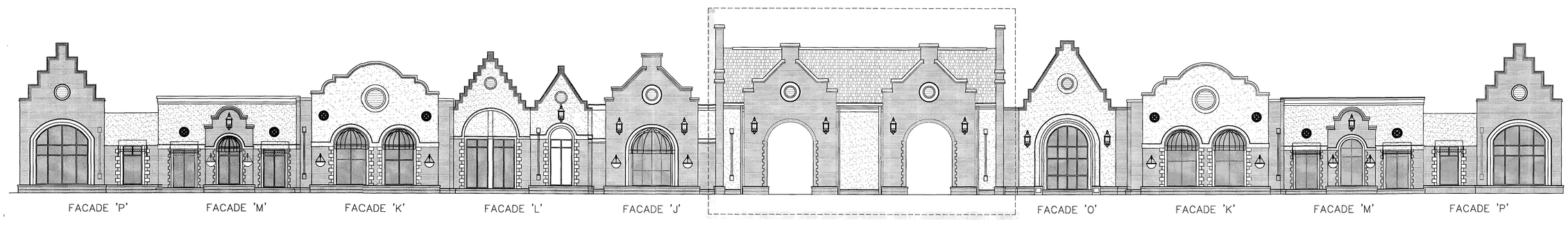
COURTYARD'



SOUTH FACADE



GARDEN FENCE



FACADE 'P' FACADE 'M' FACADE 'K' FACADE 'L' FACADE 'J' FACADE 'O' FACADE 'K' FACADE 'M' FACADE 'P'

lighting > electrical > energy
technology > signs

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MARK DATE	
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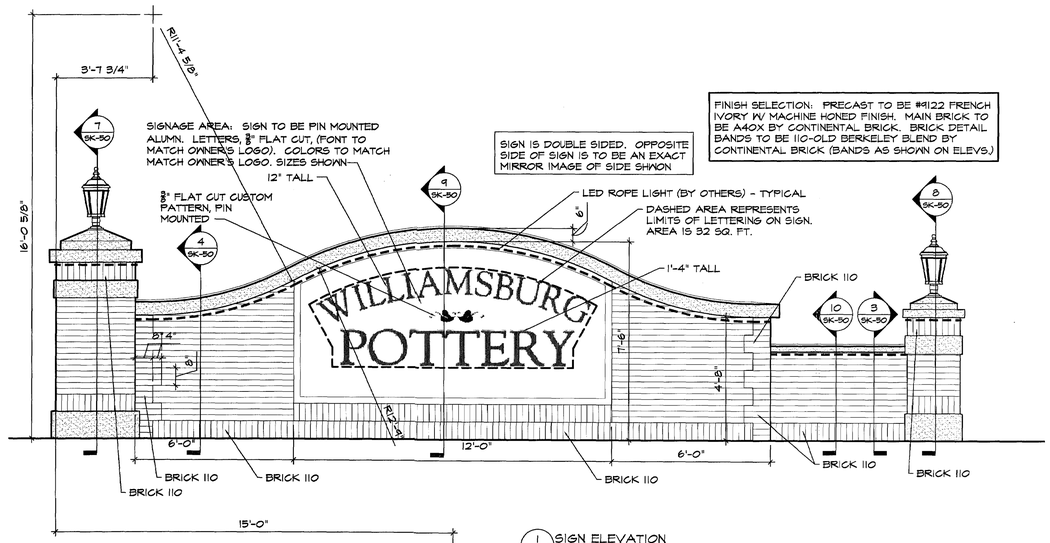
PROJECT NO:	
CAD DWG FILE:	
DRAWN BY:	BT
CHK'D BY:	DM
SHEET TITLE	OUTSIDE LIGHTING PLANS

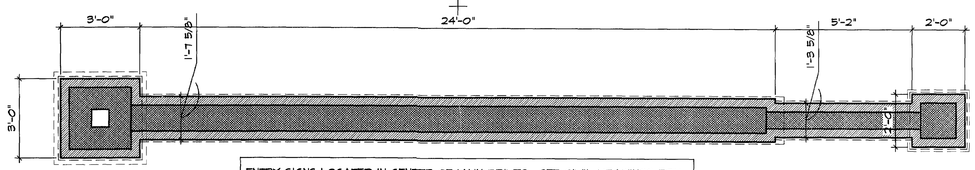
A-3



SIGN IS DOUBLE SIDED. OPPOSITE SIDE OF SIGN IS TO BE AN EXACT MIRROR IMAGE OF SIDE SHWON

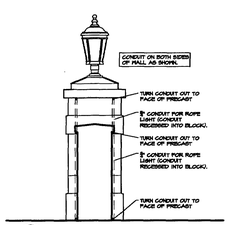
FINISH SELECTION: PRECAST TO BE #9122 FRENCH IVORY W/ MACHINE HONED FINISH. MAIN BRICK TO BE A40X BY CONTINENTAL BRICK. BRICK DETAIL BANDS TO BE 110-OLD BERKELEY BLEND BY CONTINENTAL BRICK (BANDS AS SHOWN ON ELEVS.)

1 SK-50 SIGN ELEVATION
3/8" = 1'-0"

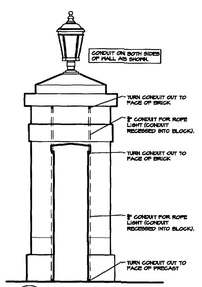


ENTRY SIGNS LOCATED IN CENTER OF MAIN DRIVES. SEE CIVIL DRAWINGS FOR EXACT LOCATION. (TOTAL OF TWO SIGNS).

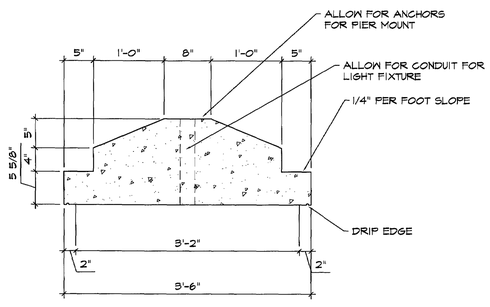
2 SK-50 SIGN PLAN
3/8" = 1'-0"



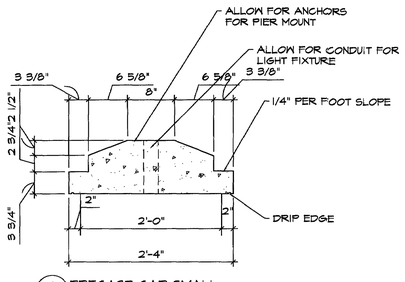
3 SK-50 SIGN SECTION ELEV ONE
3/8" = 1'-0"



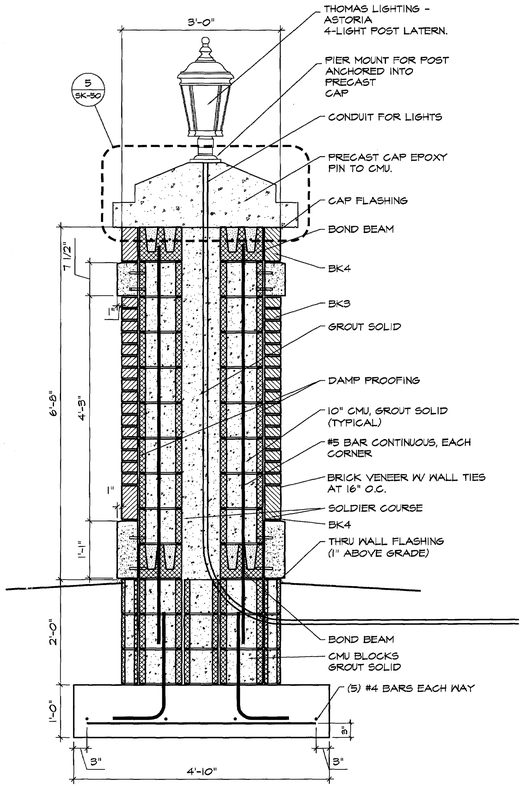
4 SK-50 SIGN SECTION ELEV TWO
3/8" = 1'-0"



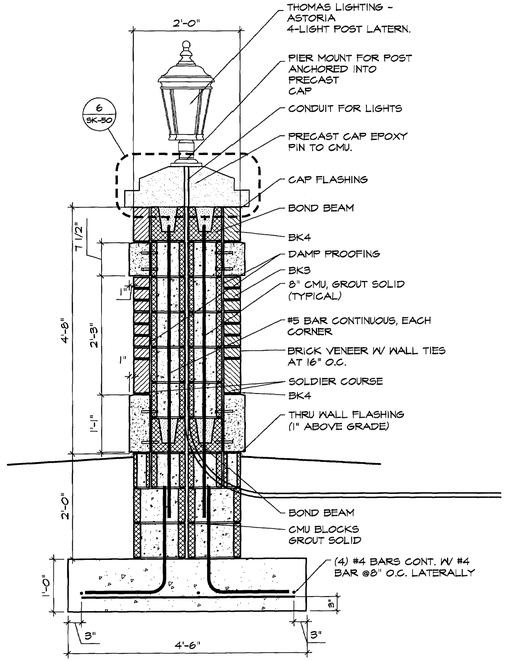
5 SK-50 PRECAST CAP LARGE
1" = 1'-0"



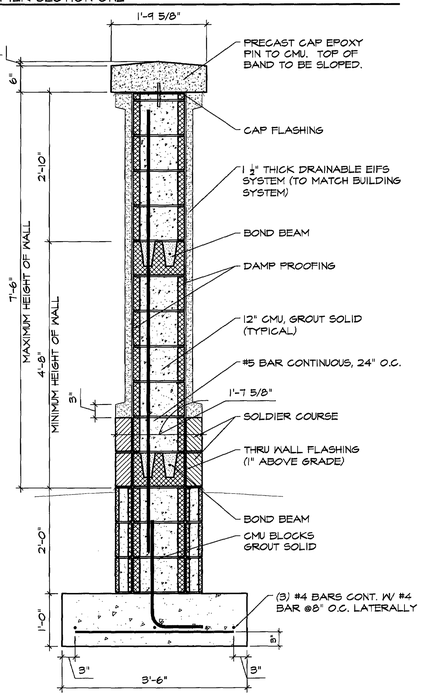
6 SK-50 PRECAST CAP SMALL
1" = 1'-0"



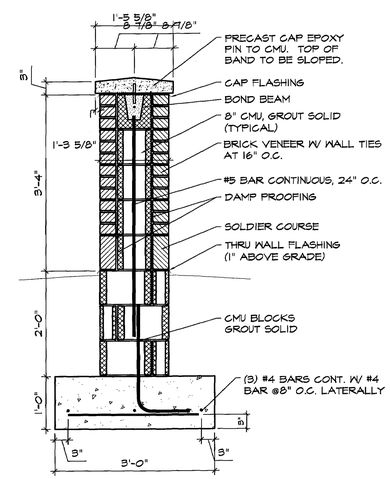
7 SK-50 BRICK PIER SECTION ONE
3/4" = 1'-0"



8 SK-50 BRICK PIER SECTION TWO
3/4" = 1'-0"



9 SK-50 SIGN SECTION ONE
3/4" = 1'-0"



10 SK-50 SIGN SECTION TWO
3/4" = 1'-0"

Symbol	Description	Date	Initials

Revisions

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Guernsey Tingle Architects
Williamsburg, Virginia
757-220-0220

Williamsburg Pottery
Richmond Road
Williamsburg, VA

ENTRY SIGN

Date 9-1-11
Drawn ---
Checked BAS
Project 210028

SK-50
of Sheets

Last Plotted by:BRAD A SIPES on 9/1/2011 Pen setting:ADSK_NCS3.CTB