R.I.D.E.M. PERMIT MODIFICATION SUBMITTAL
FOR
MAJOR LAND DEVELOPMENT PROJECT

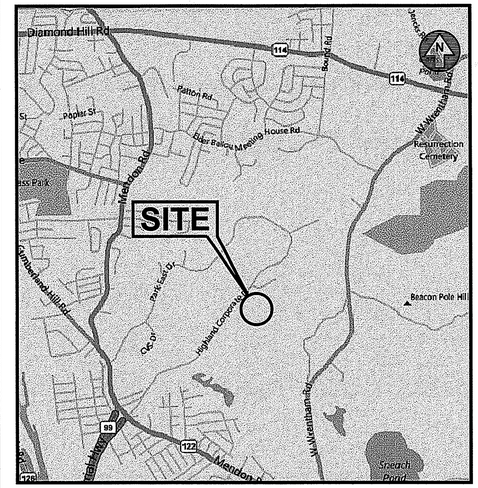
HIGHLAND HILLS

PLAT MAP 51, LOT 11

ZONING DISTRICTS:
A-2 AGRICULTURAL MEDIUM DENSITY and ONE-HOUSEHOLD
I-1 LIGHT INDUSTRIAL
OS-OPEN SPACE
R-3 MULTI-HOUSEHOLD DWELLING

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 27 2015 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



LOCATION MAP
NOT TO SCALE

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A204	COMMUNITY BUILDING ELEVATION

REVISIONS:

No.:	DATE:	DESCRIPTION:
1	09/10/14	R.I.D.E.M. SUBMITTAL
2	11/10/14	R.I.D.E.M. COMMENTS
3	03/05/15	WATER SERVICE
4	03/31/15	CONSERVATION EASEMENT
5	08/19/15	REVISED LAYOUT
6	09/01/15	R.I.D.E.M. SUBMITTAL

OCT 15 2015

OWNER
HIGHLAND HILLS APARTMENTS, LLC
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA 16046

ENGINEERS and LAND SURVEYORS
- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

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APPLICANT / DEVELOPER
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

AUGUST 2014
SHEET 1 of 49

2035-C00-COVER-R6.dwg

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES, BOTH UNDERGROUND AND OVERHEAD, BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH "DIG SAFE PROGRAM LAW" ENACTED BY THE R.I. LEGISLATURE AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY CITY, STATE OR FEDERAL AGENCY THAT MAY APPLY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

2. SPECIFICATIONS TO GOVERN THIS PROJECT ARE R.I.D.O.T. STANDARD INSTALLATION, SPECIFICATIONS AND DETAILS. FOR ALL EXCAVATION, PLACEMENT OF FILL, PIPE BITUMINOUS PAVEMENT, CUTTING INTO CATCHBASIN/MANHOLES, CONCRETE AND SAWCUTTING, THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010 EDITION, WITH LATEST REVISIONS UNLESS OTHERWISE SHOWN ON PLANS. THE "METHOD OF MEASUREMENT" AND "BASIS OF PAYMENT" ARE NOT APPLICABLE. THESE SPECIFICATIONS CAN BE OBTAINED ON-LINE AT:

   http://www.dot.ri.gov/documents/doingbusiness/RIDOT_Std_Details.pdf

3. FOR ALL EXCAVATION AND PLACEMENT OF FILL, THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE R.I. STANDARD SPECIFICATION SECTION 202.

4. RHODE ISLAND STANDARDS REFERENCED ARE ACCORDING TO THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS "RHODE ISLAND STANDARD DETAILS" OCT. 12, 2012, LATEST REVISIONS, PREPARED BY THE DEPARTMENT OF TRANSPORTATION.

5. THE CONTRACTOR MUST VERIFY PRIOR TO CONSTRUCTION THAT ALL REQUIRED AUTHORIZATION TO PERFORM WORK HAS BEEN OBTAINED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION OPERATIONS INCLUDING ALL ACTIONS OR OMISSIONS OF ANY SUBCONTRACTORS, AGENTS OR EMPLOYEES. THE CONTRACTOR MUST ENSURE THAT THE CONDITIONS OF ALL PERMITS, SPECIFICATIONS AND FEDERAL, STATE AND LOCAL REGULATIONS ARE STRICTLY ENFORCED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ASPECTS OF ON-SITE SAFETY INCLUDING ANY DAMAGE TO EXISTING STRUCTURES.

6. WORK SHOWN ON THE PLANS FOR WHICH THERE ARE NO PARTICULAR DETAILS OR SPECIFICATIONS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THE WORK. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS AND PLANS AND INSPECT THE SITE, AND THE BID PRICE SHALL INCLUDE ALL SERVICES AND MATERIALS NECESSARY TO COMPLETE THE PROJECT. ANY CHANGES TO THE PROJECT OR THE INSTALLATION OF AN ITEM FOR WHICH NO PARTICULAR DETAIL OR SPECIFICATION WAS PROVIDED MUST BE REVIEWED BY AND MUST BE ACCEPTABLE TO THE ENGINEER.

7. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY WORK.

8. ALL DISTURBED AREAS SHALL BE REPLACED IN KIND UNLESS OTHERWISE SHOWN.

LAYOUT NOTE

THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO THE CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEM FOUND WHICH DOES NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING POLICE PROTECTION. ALL TEMPORARY CONSTRUCTION SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)

2. TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.

3. THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS WILL NOT BE PARKED IN THE ROADWAY RIGHT-OF-WAY.

4. ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS, CHANNELING DEVICES, ETC., SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2003 EDITION, LATEST REVISIONS.

5. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE STATE D.O.T. SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

CONSTRUCTION NOTES

1. THE CONTRACTOR IS REQUIRED TO OBTAIN AND REVIEW ALL ENGINEERING DOCUMENTS COMPLETED FOR FINAL DESIGN.

2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO INSTALLATION OF UTILITIES ON SITE. THE COORDINATION IS NECESSARY FOR THE ENGINEER TO SCHEDULE SITE INSPECTIONS AS REQUIRED.

3. THE CONTRACTOR IS REQUIRED TO MAINTAIN DETAILED AS-BUILT INFORMATION FOR ALL UTILITY INSTALLATION. AS-BUILT INFORMATION INCLUDES MATERIAL LIST, PIPE DEPTH NOTATIONS AND SWING TIE LOCATIONS (2 MINIMUM) FROM NEW PIPE TO PERMANENT STRUCTURES. ALL PIPE BEND/ELBOW LOCATIONS SHALL BE DIMENSIONED.

FLOOD ZONE NOTE

THE SITE IS WITHIN FLOOD ZONE X, AREAS TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN, ACCORDING TO FLOOD INSURANCE RATE MAP, PROVIDENCE COUNTY, RHODE ISLAND, PANEL 177 OF 451, MAP NUMBER 44007C 0177G, EFFECTIVE DATE MARCH 2, 2009.

MAP REFERENCE

1. REFERENCE IS MADE TO THE PLAN SET ENTITLED "HIGHLAND II URBAN COLLECTOR, STATION 18+00 TO STATION 116+04 (STA. 37A+47.67 PARK EAST DRIVE), TOWN OF CUMBERLAND AND CITY OF WOONSOCKET, COUNTY OF PROVIDENCE." R.I. CONTRACT NO. 9450 DATE LAST REVISED: JULY 20, 1994, SHEETS 1-221, PREPARED BY CROSSMAN ENGINEERING INC.

2. REFERENCE IS MADE TO THE PLAN SET ENTITLED "ADMINISTRATIVE SUBDIVISION PLANS FOR HIGHLAND HILLS, ASSESSORS PLAT 51, LOT 11 AND PLAT 52, LOTS 347 AND 360, HIGHLAND CORPORATE DRIVE, CUMBERLAND RHODE ISLAND, ZONING DISTRICT I-1/PDO, I-1, OS, A-1 AND A-2, DATED DECEMBER 2008, SHEETS 1 THROUGH 8", PREPARED BY CROSSMAN ENGINEERING, INC. NOTE, THE PROPERTY LINES REFERENCED IN THIS PLAN SET HAVE BEEN TAKEN FROM THE ADMINISTRATIVE SUBDIVISION PLANS MENTIONED ABOVE.

LIGHTING NOTE

WITHIN THE NATIONAL GRID ELECTRIC EASEMENT, THE TOTAL HEIGHT OF THE LIGHT POLES SHALL NOT EXCEED 14.5' ABOVE THE PROPOSED GRADE.

PROPOSED PAVEMENT STRUCTURE

1 1/2" BITUMINOUS CONCRETE SURFACE COURSE, CLASS I-1
2 1/2" BITUMINOUS CONCRETE BASE COURSE
8" GRAVEL BORROW SUBBASE

UTILITY NOTES

1. PRIOR TO ANY UTILITY CONSTRUCTION, THE CONTRACTOR MUST PERFORM ADDITIONAL TESTS TO:

   A. CONFIRM THE EXISTING DEPTHS OF UTILITIES AT ALL PROPOSED CONNECTION POINTS AND POTENTIAL CROSSOVER (CONFLICT) POINTS.

   B. CONFIRM THE EXTENT OF LEDGE WHICH MAY EXIST IN ALL ANTICIPATED UTILITY TRENCH AREAS. PRIOR TO CONSTRUCTION, THE FINDINGS ARE TO BE REVIEWED BY THE OWNER AND THE ENGINEER. IF NECESSARY, ALTERNATIVES TO MINIMIZE LEDGE REMOVAL AND UTILITY CONFLICTS WILL BE DEVELOPED. NO CONSTRUCTION WILL BE ALLOWED WITHOUT THE OWNER'S AUTHORIZATION.

   C .THE CONTRACTOR SHALL DIG TEST HOLES TO VERIFY THE ELEVATIONS AND PIPE MATERIAL OF THE EXISTING WATER, GAS AND SANITARY SERVICES AT THE PROPOSED TIE-IN LOCATION.

2. ANY MODIFICATIONS TO THE PROPOSED UTILITIES TO AVOID CONFLICTS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. NO EXTRA PAYMENT TO THE CONTRACTOR DUE TO RELOCATIONS WILL BE AUTHORIZED.

3. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO TIE-IN.

4. THIS UTILITY PLAN DOES NOT REPRESENT THE SITE ELECTRICAL/TELEPHONE/COMMUNICATION SYSTEM DESIGNS AND DOES NOT REPRESENT IRRIGATION PIPING. CONTRACTOR SHALL COORDINATE WITH OWNER TO VERIFY IRRIGATION PIPING REQUIREMENTS.

5. THE CONTRACTOR MUST LOCATE THE EXISTING WATER MAIN TO OBTAIN THE PROPER OUTSIDE DIAMETER TO SIZE THE SLEEVE.

6. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL UTILITY PIPE SIZES INCLUDING WATER, SEWER AND GAS ARE VERIFIED BY THE ARCHITECT PRIOR TO ORDERING PIPE OR RELATED MATERIAL.

7. ALL PROPOSED PIPES AND CONDUITS SHALL BE INSTALLED TO MEET H-20 LOADING CAPACITY. ALL MATERIAL AND TRENCHING METHODS SHALL CONFORM TO H-20 LOADING CAPACITIES. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS/CATALOG CUTS FOR PROPOSED PIPE AND CONDUIT TO ENGINEER FOR APPROVAL.

STORMWATER SYSTEM MAINTENANCE SCHEDULE

1. CATCH BASINS, MANHOLES AND DRAIN LINES:

   AN INSPECTION MUST OCCUR ON AN ANNUAL BASIS BY QUALIFIED PERSONNEL TO ENSURE PROPER OPERATION. THE INSPECTION SHOULD, AS A MINIMUM, CONCENTRATE ON THE FOLLOWING:

   - DAMAGE TO GRATES/COVERS
   - EVIDENCE OF STANDING WATER
   - DEBRIS REMOVAL
   - STRUCTURAL ALIGNMENT/INTEGRITY

   ANY DEFICIENCY NOTED DURING THE INSPECTION WILL BE IMMEDIATELY REPAIRED OR REPLACED.

2. SEDIMENT REMOVAL:

   FOLLOWING CONSTRUCTION, THE CATCH BASINS AND DRAIN LINES WITHIN THE PROJECT LIMITS ARE TO BE CLEANED OF ACCUMULATED SEDIMENT AS REQUIRED. ALL REMOVED SEDIMENT IS TO BE TESTED TO DETERMINE POLLUTANT CONTENT. THE SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS BASED UPON THE TEST RESULTS AND LOCAL, STATE AND FEDERAL REGULATIONS.

3. UNDERGROUND INFILTRATION SYSTEM:

   THE UNDERGROUND INFILTRATION SYSTEM SHALL BE INSPECTED ANNUALLY AND AFTER STORMS EQUAL TO OR GREATER THAN THE 1-YEAR, 24 HOUR TYPE III STORM EVENT (2.7 INCHES IN 24 HOURS). INSPECT THE INLET PIPES AND OUTLET PIPES FOR CLOGGING. REMOVE ACCUMULATED SEDIMENT, TRASH AND DEBRIS. INSPECT SYSTEM AND OUTLET STRUCTURE FOR STRUCTURAL INTEGRITY AND STANDING WATER. INSPECT PAVEMENT AREA OVER SYSTEM FOR SETTLEMENT.

SOIL SURVEY NOTE

ACCORDING TO THE SOIL SURVEY OF RHODE ISLAND, SOILS WITHIN THE SITE'S PROPOSED IMPROVEMENTS ARE IDENTIFIED AS:
CaC-CANTON FINE SANDY LOAM, 8 TO 15% SLOPES
ChB-CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
ChD-CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES

THESE SOILS ARE SUITABLE FOR COMMUNITY DEVELOPMENT.

WALL NOTE

ALL WALLS SHALL INCLUDE A 5' PEDESTRIAN FENCE ON TOP OF EACH WALL.

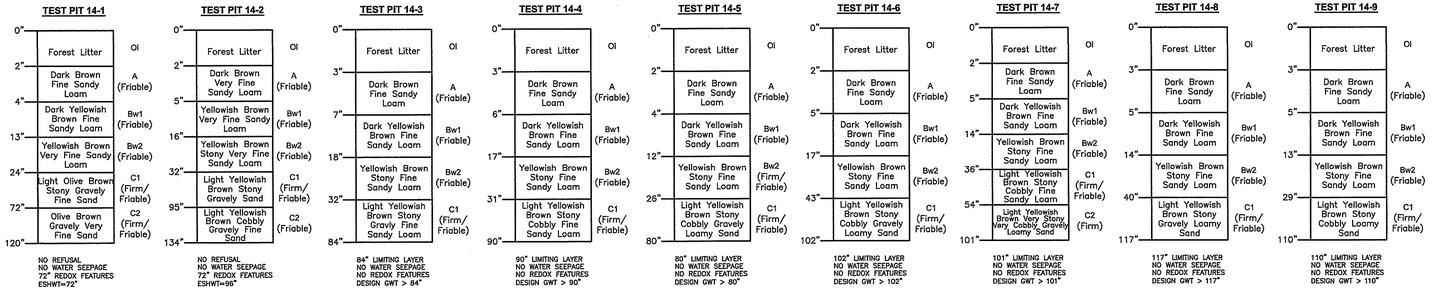
LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	EASEMENT LINE	
	CURB	
	BITUMINOUS BERM	
	POROUS PAVEMENT	
-O- NO.	UTILITY POLE	NO.
LP	LIGHT POLE	
-(Size) D-	DRAIN LINE	(SIZE) D
-(Size) S-	SANITARY SEWER	(SIZE) S
	SANITARY FORCE MAIN	(SIZE) SFM
-(Size) G-	GAS LINE	(SIZE) G
-6"W-	DOMESTIC WATER LINE	(SIZE) W
-8"W-	FIRE SERVICE LINE	(SIZE) FS
-Elec-	ELECTRIC/CABLE/TELEPHONE	ECT
DMH	DRAINAGE MANHOLE	DMH
CB	CATCH BASIN	CB
SMH	SEWER MANHOLE	SMH
EMH	ELECTRIC MANHOLE	EMH
TMH	TELEPHONE MANHOLE	
Hyd.	HYDRANT	HYD.
	REMOTE FIRE DEPARTMENT CONNECTION	
WG	WATER GATE	WG
GG	GAS GATE	GG
CO	CLEAN-OUT TO GRADE	CO
	SAWCUT PAVEMENT	
-XXX-	CONTOURS	ELEV.
X ELEV.	SPOT GRADES	00x0
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	RETAINING WALL	
	STONE WALL	
	GUARDRAIL	
	GRADE TO DRAIN	
(Size)	TREE LINE	
	TREE	
	WETLAND FLAG	
	WETLAND EDGE	
	WETLAND BUFFER	
TP14-1	TEXT PIT	
P-4	SOIL BORING/PROBE	
Bollard	BOLLARDS	BOLLARD
	LIMIT OF DISTURBANCE	
	FILTER SOXX	

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Charles A. Horbert

SOIL EVALUATION DATA

SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING ON SEPTEMBER 4, 2014.



• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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STEVEN M. CABRAL
No. 18471
REGISTERED PROFESSIONAL ENGINEER
9/14/15

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GENERAL NOTES and LEGEND

DATE:	*SCALE:*
AUGUST 2014	NO SCALE

DWG. NAME: 2035-C01-NOTES-R6.dwg

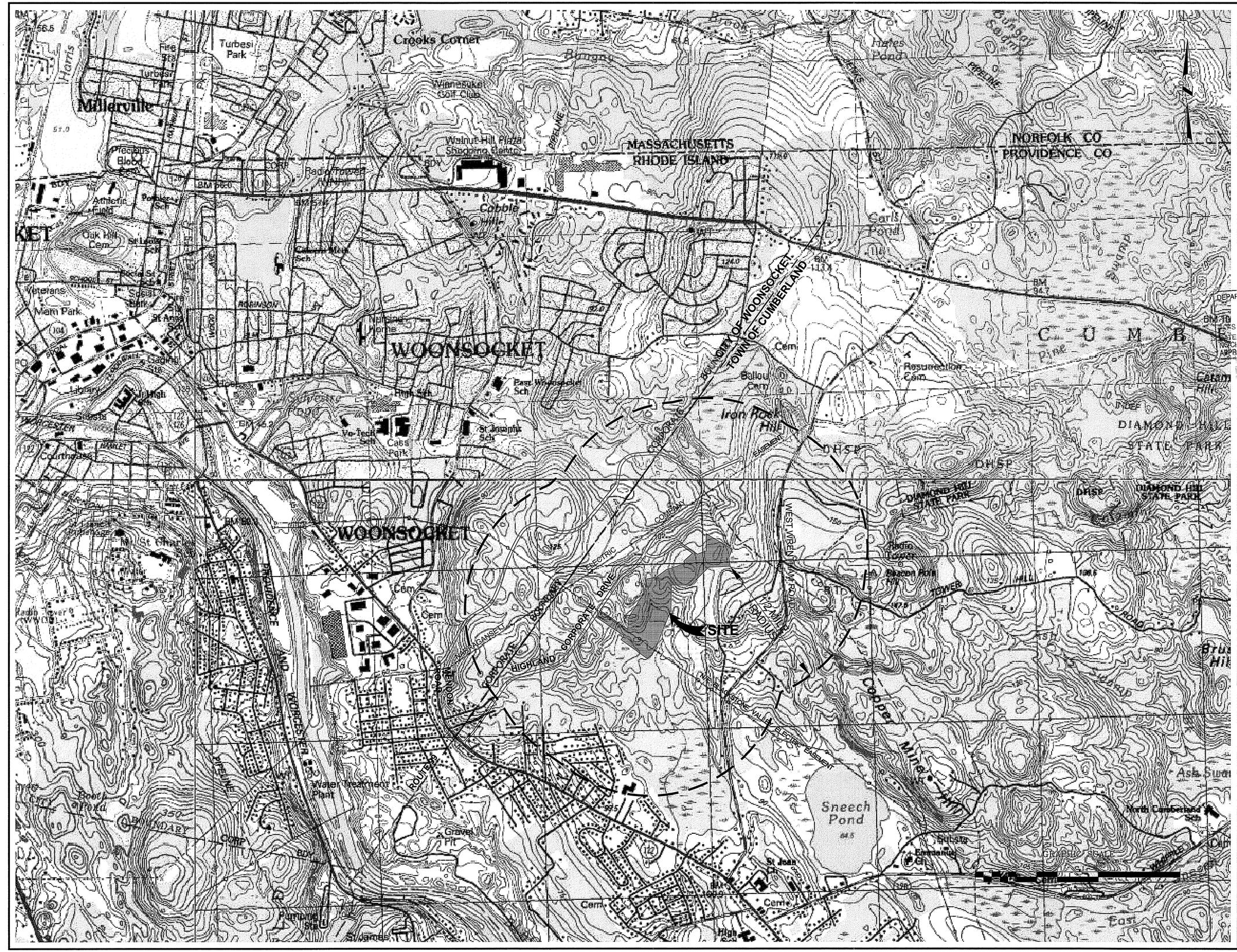
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C1

SHEET: 2 *OF:* 44



• Civil
• Transportation
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
OCT 1 2015
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PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1, OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

VICINITY MAP

DATE:	*SCALE:*
AUGUST 2014	1"=800'

DWG. NAME: 2035-C02-VICINITY-R6.dwg

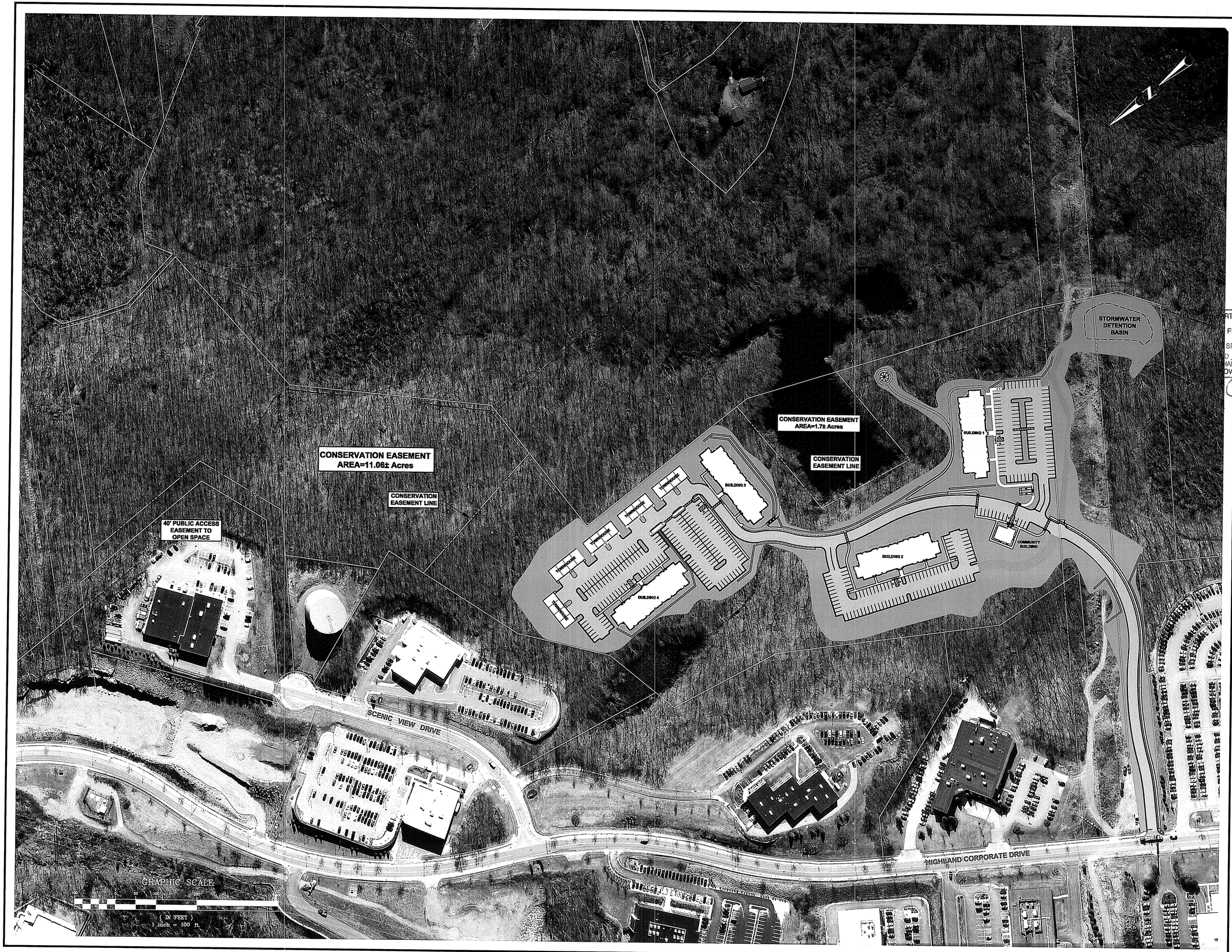
REVISIONS

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DRAWING NUMBER

C2

SHEET: 3 OF: 44



• Civil
• Transportation
• Environmental
• Site Planning
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• Permitting
• Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/10/15

KEY PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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A-2, I-1, OS and R-3

HIGHLAND CORPORATE DRIVE
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PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

AERIAL PHOTOGRAPH

DATE:	*SCALE:*
AUGUST 2014	1"=100

DWG. NAME: 2035-C03-AERIAL-R6.dwg

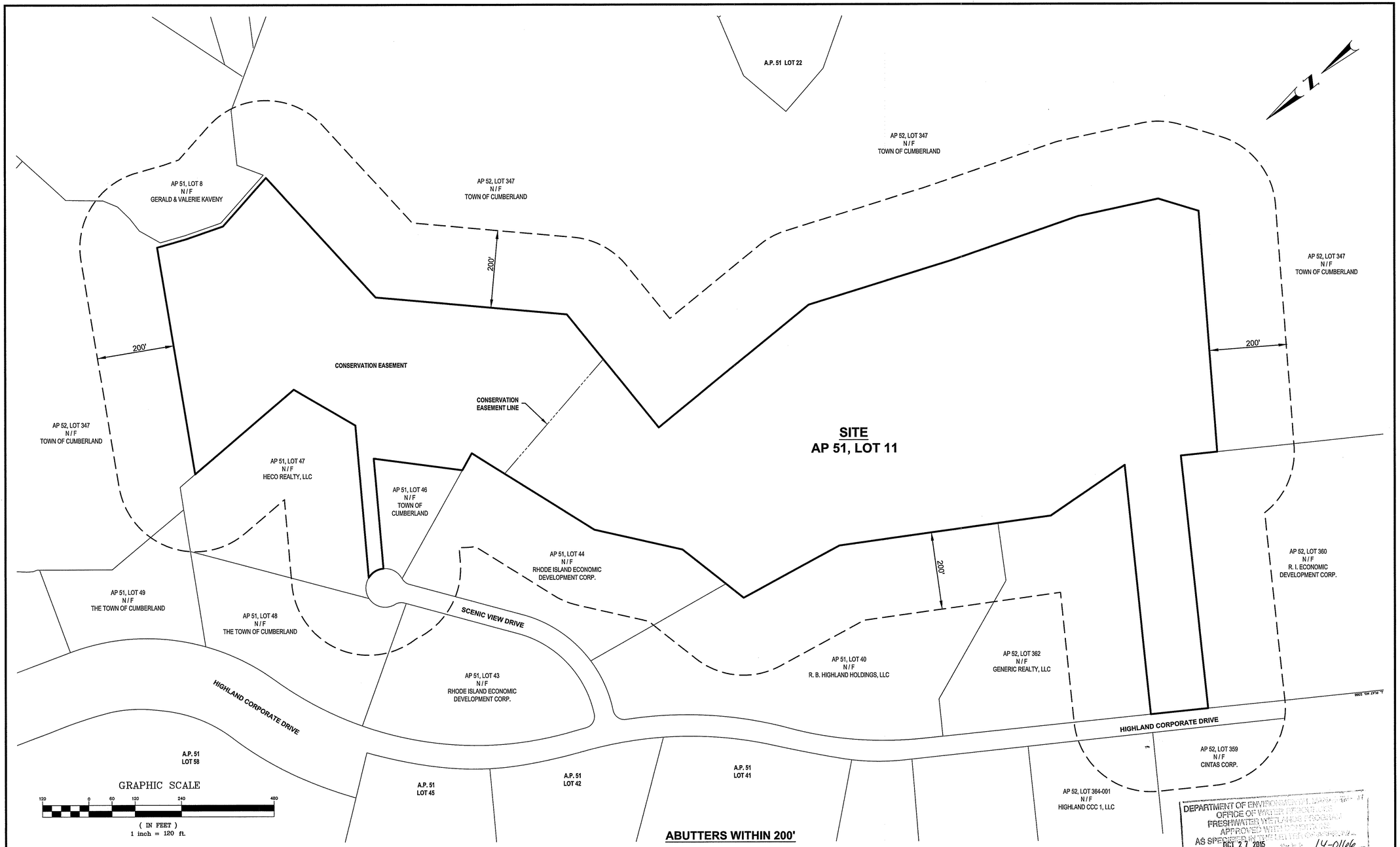
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DRAWING NUMBER

C3

SHEET: 4 OF: 44



ABUTTERS WITHIN 200'

PLAT 51 LOT 11
HIGHLAND HILLS, LLC
177 OLD RIVER ROAD
LINCOLN, RI 02865

PLAT 51 LOT 8
GERALD & VALERIE KAVENY
152 W. WRENTHAM ROAD
CUMBERLAND, RI 02864

PLAT 51 LOT 40
R. B. HIGHLAND HOLDINGS, LLC
C/O PAUL R. ANTROP
200 SCENIC VIEW DRIVE
CUMBERLAND, RI 02864

PLAT 51 LOT 43 AND 44
RHODE ISLAND ECONOMIC
DEVELOPMENT CORP.
C/O CVS PHARMACY, INC.
ONE CVS DRIVE
WOONSOCKET, RI 02895

PLAT 51 LOT 46
TOWN OF CUMBERLAND
45 BROAD STREET
CUMBERLAND, RI 02864

PLAT 51 LOT 47
HECO REALTY, LLC
800 SCENIC VIEW DRIVE
CUMBERLAND, RI 02864

PLAT 51 LOT 48
THE TOWN OF CUMBERLAND
45 BROAD STREET
CUMBERLAND, RI 02864

PLAT 51 LOT 49
THE TOWN OF CUMBERLAND
45 BROAD STREET
CUMBERLAND, RI 02864

PLAT 52 LOT 347
TOWN OF CUMBERLAND
45 BROAD STREET
CUMBERLAND, RI 02864

PLAT 52 LOT 359
CINTAS CORPORATION
ATTN: ACCOUNTING ASST. 90C
6800 CINTAS BOULEVARD
MASON, OH 45040

PLAT 52 LOT 360
RHODE ISLAND ECONOMIC
DEVELOPMENT CORP.
C/O PROPERTY TAX DEPT.
ONE CVS DRIVE
WOONSOCKET, RI 02895

PLAT 52 LOT 362
GENERIC REALTY, LLC
400 HIGHLAND CORPORATE DRIVE
CUMBERLAND, RI 02864

PLAT 52 LOT 364-001
HIGHLAND CCC 1, LLC
1300 HIGHLAND CORPORATE DRIVE
SUITE 202
CUMBERLAND, RI 02864

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN A LETTER DATED OCT 27 2015 14-0116
NO CHANGES ALLOWED WITHOUT WRITTEN APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

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• Landscape Architecture

CROSSMAN ENGINEERING

Rhode Island
151 Centerville Road
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Phone: (401) 738-5660

Massachusetts
103 Commonwealth Avenue
North Attleboro, MA 02763
Phone: (508) 695-1700

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
10/14/15

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

200' ABUTTERS MAP

DATE:	*SCALE:*
AUGUST 2014	1"=120'

DWG. NAME: 2035-C04-RADIUS-R6.dwg

REVISIONS

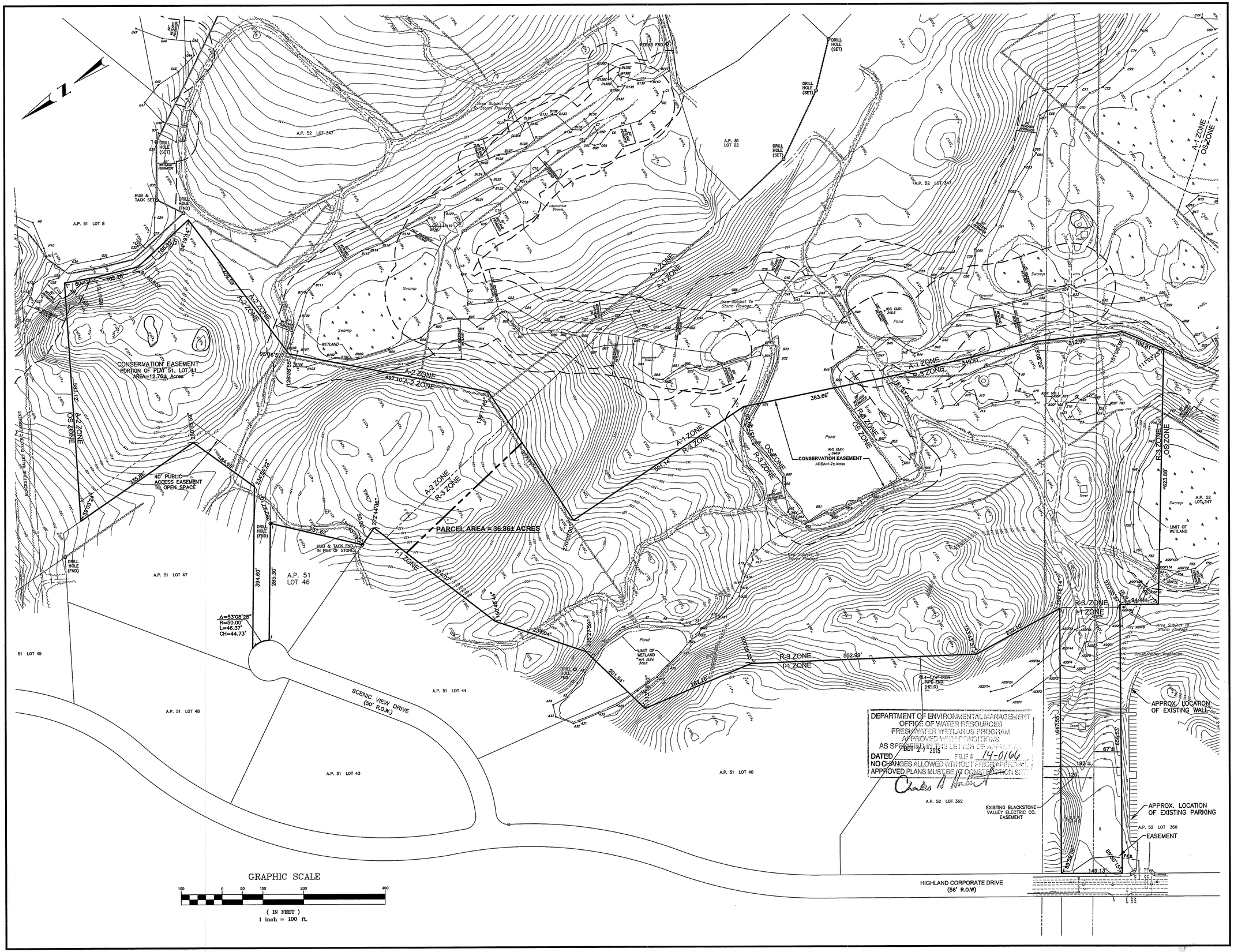
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP - 10 2015

DRAWING NUMBER

C4

SHEET: 5 *OF:* 49-44



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 2 1 2015 FILE # 14-0166
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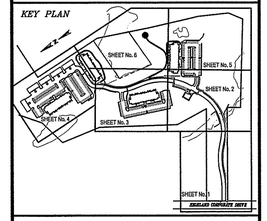
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/30/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

EXISTING CONDITIONS PLAN

DATE:	*SCALE:*
AUGUST 2014	1"=100'

DWG. NAME: 2035-C05.0-EXCN-R6.dwg

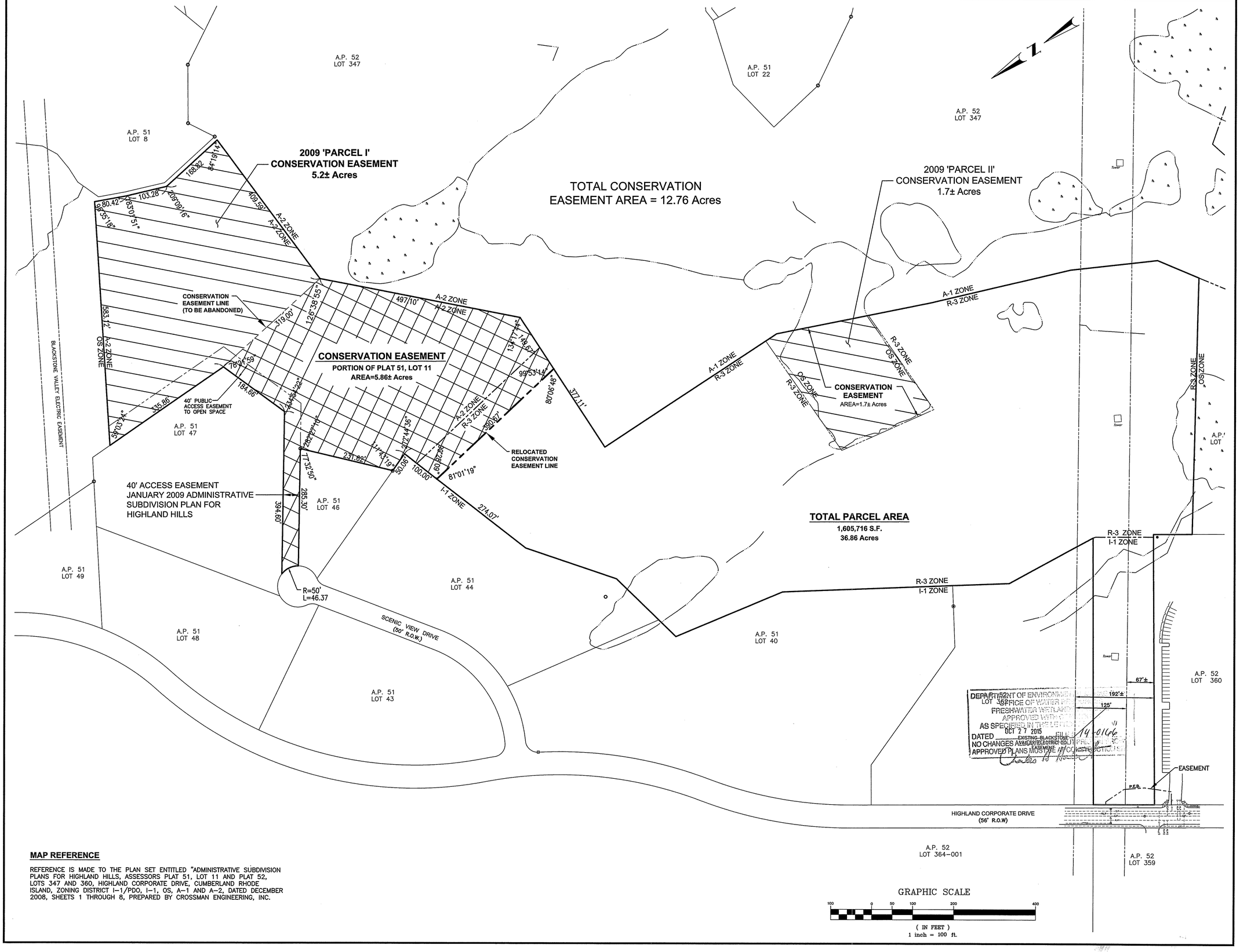
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C5.0

SHEET: 6 *OF:* 44



MAP REFERENCE

REFERENCE IS MADE TO THE PLAN SET ENTITLED "ADMINISTRATIVE SUBDIVISION PLANS FOR HIGHLAND HILLS, ASSESSORS PLAT 51, LOT 11 AND PLAT 52, LOTS 347 AND 360, HIGHLAND CORPORATE DRIVE, CUMBERLAND RHODE ISLAND, ZONING DISTRICT I-1/PDO, I-1, OS, A-1 AND A-2, DATED DECEMBER 2008, SHEETS 1 THROUGH 8, PREPARED BY CROSSMAN ENGINEERING, INC.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED OCT 27 2015
FILE 14-0166
NO CHANGES AVAILABLE/ELECTRIC CO.
APPROVED PLANS MUST BE AVAILABLE AT CONSTRUCTION

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CROSSMAN ENGINEERING

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
6/1/15

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

CONSERVATION EASEMENT PLAN

DATE:	*SCALE:*
AUGUST 2014	1"=100'

DWG. NAME: 2035-C5.1-EASEMENT-R6.dwg

REVISIONS

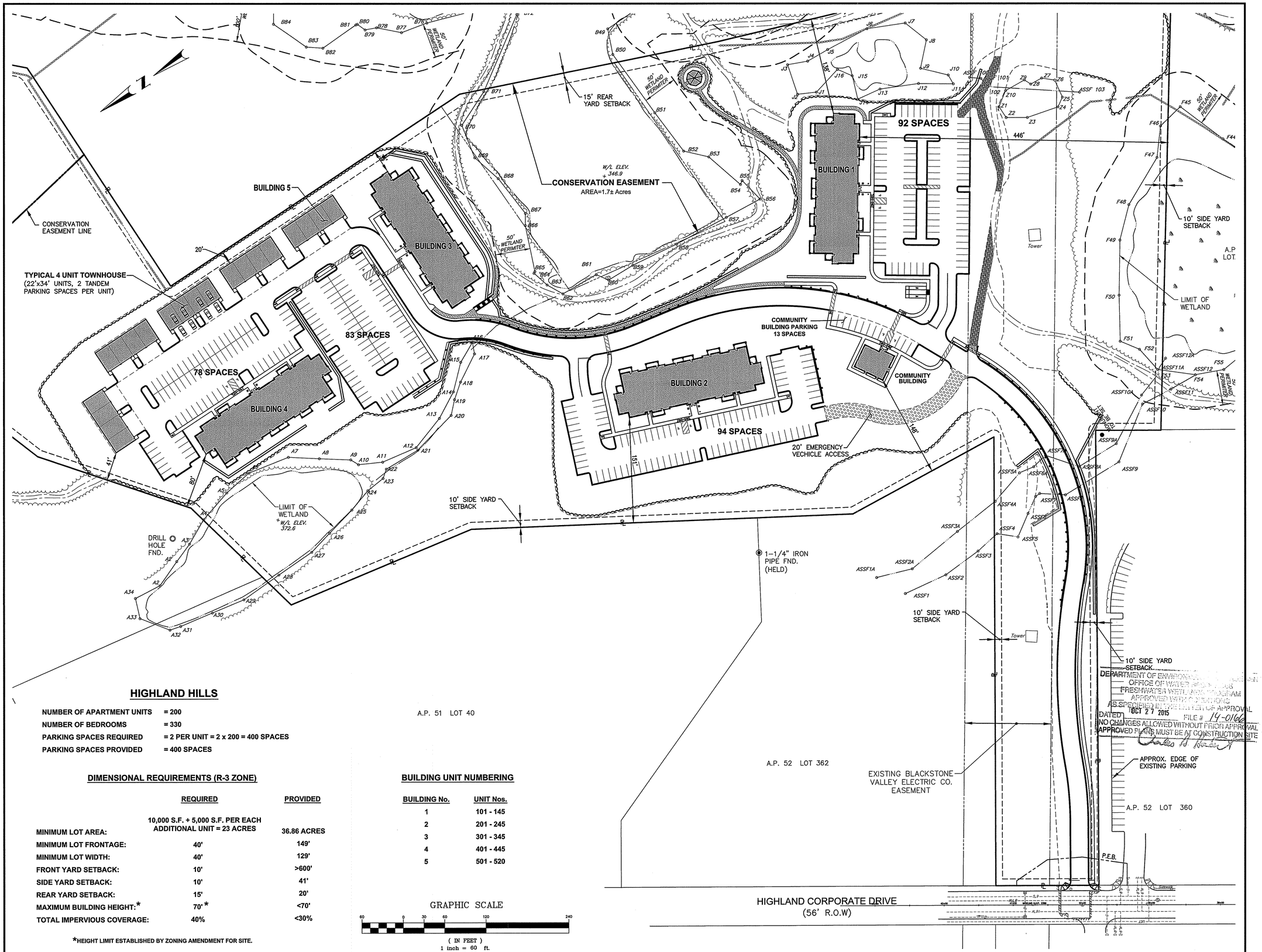
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1	R.I.D.E.M. SUBMITTAL	09/10/14
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3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15

SEP 16 2015

DRAWING NUMBER

C5.1

SHEET: 7 *OF:* 11



HIGHLAND HILLS

NUMBER OF APARTMENT UNITS	= 200
NUMBER OF BEDROOMS	= 330
PARKING SPACES REQUIRED	= 2 PER UNIT = 2 x 200 = 400 SPACES
PARKING SPACES PROVIDED	= 400 SPACES

DIMENSIONAL REQUIREMENTS (R-3 ZONE)

	REQUIRED	PROVIDED
MINIMUM LOT AREA:	10,000 S.F. + 5,000 S.F. PER EACH ADDITIONAL UNIT = 23 ACRES	36.86 ACRES
MINIMUM LOT FRONTAGE:	40'	149'
MINIMUM LOT WIDTH:	40'	129'
FRONT YARD SETBACK:	10'	>600'
SIDE YARD SETBACK:	10'	41'
REAR YARD SETBACK:	15'	20'
MAXIMUM BUILDING HEIGHT:*	70'*	<70'
TOTAL IMPERVIOUS COVERAGE:	40%	<30%

*HEIGHT LIMIT ESTABLISHED BY ZONING AMENDMENT FOR SITE.

BUILDING UNIT NUMBERING

BUILDING No.	UNIT Nos.
1	101 - 145
2	201 - 245
3	301 - 345
4	401 - 445
5	501 - 520

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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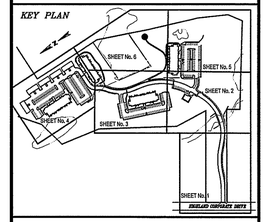
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

OVERALL SITE LAYOUT PLAN

DATE: AUGUST 2014
SCALE: 1"=60'

DWG. NAME: 2035-C06.0-OVERALL-R6.dwg

REVISIONS

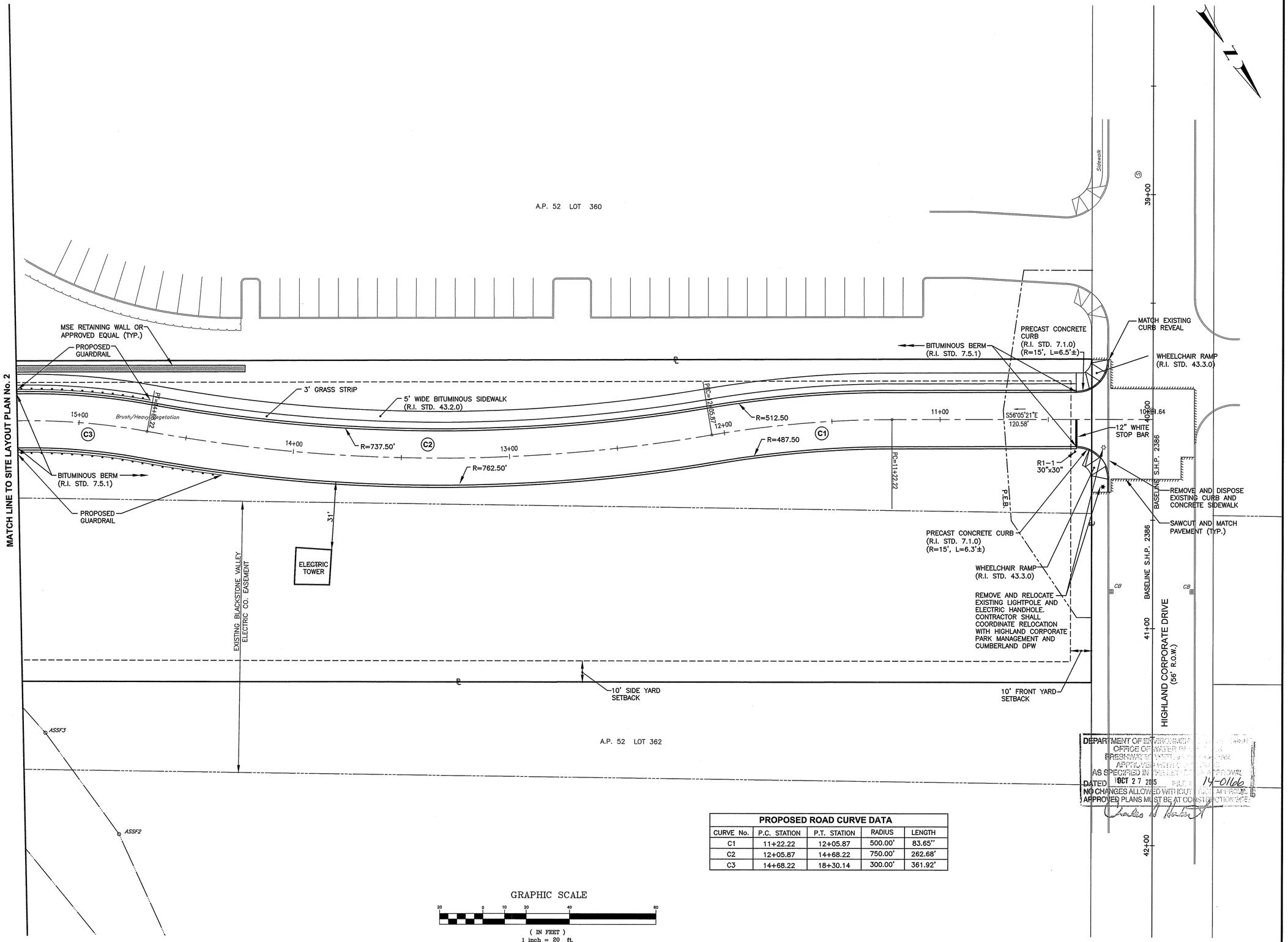
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6	R.I.D.E.M. SUBMITTAL	09/01/15

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN LETTER OF APPROVAL
DATED: OCT 27 2015 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

DRAWING NUMBER

C6.0

SHEET: 8 OF: 44



PROPOSED ROAD CURVE DATA				
CURVE No.	P.C. STATION	P.T. STATION	RADIUS	LENGTH
C1	11+22.22	12+05.87	500.00'	83.65"
C2	12+05.87	14+68.22	750.00'	262.68'
C3	14+68.22	18+30.14	300.00'	361.92'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
APPLICATION NUMBER 14-0166 APPROVED
AS SPECIFIED IN THE RULES AND REGULATIONS
DATED OCT 27 2015 FILE NO. 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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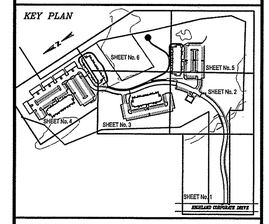
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9-11-15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R6.dwg

REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 15 2015

DRAWING NUMBER

C6.1

SHEET: 9 *OF:* 44

MATCH LINE TO SITE LAYOUT PLAN PLAN No. 5

MATCH LINE TO SITE LAYOUT PLAN No. 3

MATCH LINE TO SITE LAYOUT PLAN No. 1

BUILDING A (45 UNITS)

COMMUNITY BUILDING

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

PROPOSED GUARDRAIL

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

BITUMINOUS BERM (R.I. STD. 7.5.1)

5' GRASS STRIP

5' WIDE CEMENT CONCRETE SIDEWALK (R.I. STD. 43.1.0)

R=3' (TYP.)

4" WHITE PAVEMENT MARKING (TYP.)

R=10'

18' (TYP.)

25'

R=387.50'

R=412.50'

20+00

12" WHITE STOP BAR

R1-1 30"x30"

R=25'

R=50'

R=15'

4" DOUBLE YELLOW PAVEMENT MARKING

12' WIDE CRUSHED STONE-GRAVEL DRIVEWAY

4" LOAM AND SEED

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

12' PAVED APRON WITH REINFORCED CONCRETE SIDEWALK

PROVIDE 6" DIA. PRESSURE TREATED POST EACH SIDE OF DRIVEWAY WITH CHAIN AND LOCK

PROPOSED GUARDRAIL

ADA PARKING SIGN (TYP.)

WHEELCHAIR RAMP (R.I. STD. 43.3.0)

22'

9' (TYP.)

R=3'

19+00

N 16°43'E 48.17'

R=15'

18+30.14

18+00

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

3' GRASS STRIP

R=312.50'

EMERGENCY VEHICLES ONLY

12"x18"

PROPOSED GUARDRAIL

R=287.50'

BITUMINOUS BERM (R.I. STD. 7.5.1)

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

17+00

20' EMERGENCY VECHICLE ACCESS (TUFFTRACK GRASSROAD PAVER SYSTEM OR APPROVED EQUAL). REFER TO SHEET C12 FOR DETAIL

148'±

10' SIDE YARD SETBACK

LIMIT OF WETLAND

AREA SUBJECT TO STORM FLOWAGE

F50

F51

F52

F53

ASSF12A

ASSF11A

ASSF11

ASSF10A

ASSF10

ASSF9A

ASSF9

ASSF8A

ASSF8

ASSF7A

ASSF7

ASSF6A

ASSF6

ASSF5A

ASSF5

ASSF4A

ASSF4

ASSF3A

C3

C4

PROPOSED ROAD CURVE DATA				
CURVE No.	P.C. STATION	P.T. STATION	RADIUS	LENGTH
C3	14+68.22	18+30.14	300.00'	361.92'
C4	19+20.31	22+93.58	400.00'	373.27'

GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)

1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
APPROVED WITH CONDITIONS
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DATED OCT 27 2015 FILE # 14-0166
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SEP 15 2015

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CROSSMAN ENGINEERING

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/1/15

KEY PLAN

SHEET No. 6 SHEET No. 5 SHEET No. 4 SHEET No. 2 SHEET No. 3 SHEET No. 1

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 2

DATE: AUGUST 2014

SCALE: 1"=20'

DWG. NAME: 2035-C06-SITE-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C6.2

SHEET: 10 *OF:* 44

MATCH LINE TO SITE LAYOUT PLAN No. 6

MATCH LINE TO SITE LAYOUT PLAN No. 4

MATCH LINE TO SITE LAYOUT PLAN No. 2

BUILDING 3
(45 UNITS)

50' WETLAND PERIMITER

5' WIDE POROUS PAVEMENT SIDEWALK

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

PROPOSED GUARDRAIL

AREA SUBJECT TO STORM FLOWAGE

3' GRASS STRIP

BITUMINOUS BERM (R.I. STD. 7.5.1)

PROPOSED GUARDRAIL

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

BITUMINOUS BERM (R.I. STD. 7.5.1)

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

BITUMINOUS BERM (R.I. STD. 7.5.1)

BUILDING 2
(45 UNITS)

5' WIDE CEMENT CONCRETE SIDEWALK (R.I. STD. 43.1.0)

94 SPACES PROVIDED

R=3' (TYP.)

R=15' (TYP.)

4" WHITE PAVEMENT MARKING (TYP.)

ADA PARKING SIGN (TYP.)

WHEELCHAIR RAMP (R.I. STD. 43.3.0) (TYP.)

BITUMINOUS BERM (R.I. STD. 7.5.1)

10' SIDE YARD SETBACK

PROPOSED ROAD CURVE DATA				
CURVE No.	P.C. STATION	P.T. STATION	RADIUS	LENGTH
C4	19+20.31	22+93.58	400.00'	373.27'
C5	23+53.99	25+43.71	250.00'	189.72'
C6	25+73.71	26+15.25	150.00'	71.54'
C8	26+15.25	26+83.88	62.50'	68.62'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED OCT 27 2015 FILE NO. 14-0166
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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

SHEET No. 6 | SHEET No. 5 | SHEET No. 2 | SHEET No. 4 | SHEET No. 3 | SHEET No. 1

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 3

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R6.dwg

REVISIONS

△ NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 1 4 2015

DRAWING NUMBER

C6.3

SHEET: 11 OF: ~~49~~ 44

PROPOSED ROAD CURVE DATA				
CURVE No.	P.C. STATION	P.T. STATION	RADIUS	LENGTH
C7	26+15.25	26+83.88	62.50'	68.62'
C8	27+97.65	28+38.85	37.50'	43.20'

TYPICAL 4 UNIT TOWNHOUSE
(22'x34' UNITS, 2 TANDEM
PARKING SPACES PER UNIT)

SECOND STORY
OVERHANG (TYP.)

15' REAR YARD
SETBACK

TOWNHOUSE (4 UNITS)

BUILDING 4 (45 UNITS)

BUILDING 3 (45 UNITS)

BITUMINOUS BERM (R.I. STD. 7.5.1)

4" WHITE PAVEMENT MARKING (TYP.)

5'x5' CONCRETE PAD (TYP.)

78 SPACES PROVIDED

83 SPACES PROVIDED

WHEELCHAIR RAMP (R.I. STD. 43.3.0)

ADA PARKING SIGN (TYP.)

5' WIDE CEMENT CONCRETE SIDEWALK (R.I. STD. 43.1.0)

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

3' GRASS STRIP

5' WIDE POROUS PAVEMENT SIDEWALK

PROPOSED GUARDRAIL

C7 R=50' R=75'

C8 R=50' R=25' PC=27+97.65

PT=26+83.88

MATCH LINE TO SITE LAYOUT PLAN No. 3

MATCH LINE TO SITE LAYOUT PLAN No. 6

DRILL HOLE FND.

10' SIDE YARD SETBACK

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED OCT 27 2015 FILE # 14-0166
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

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• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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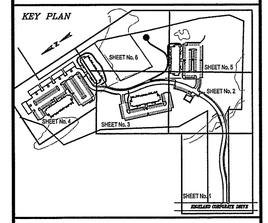
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
4-14-15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R6.dwg

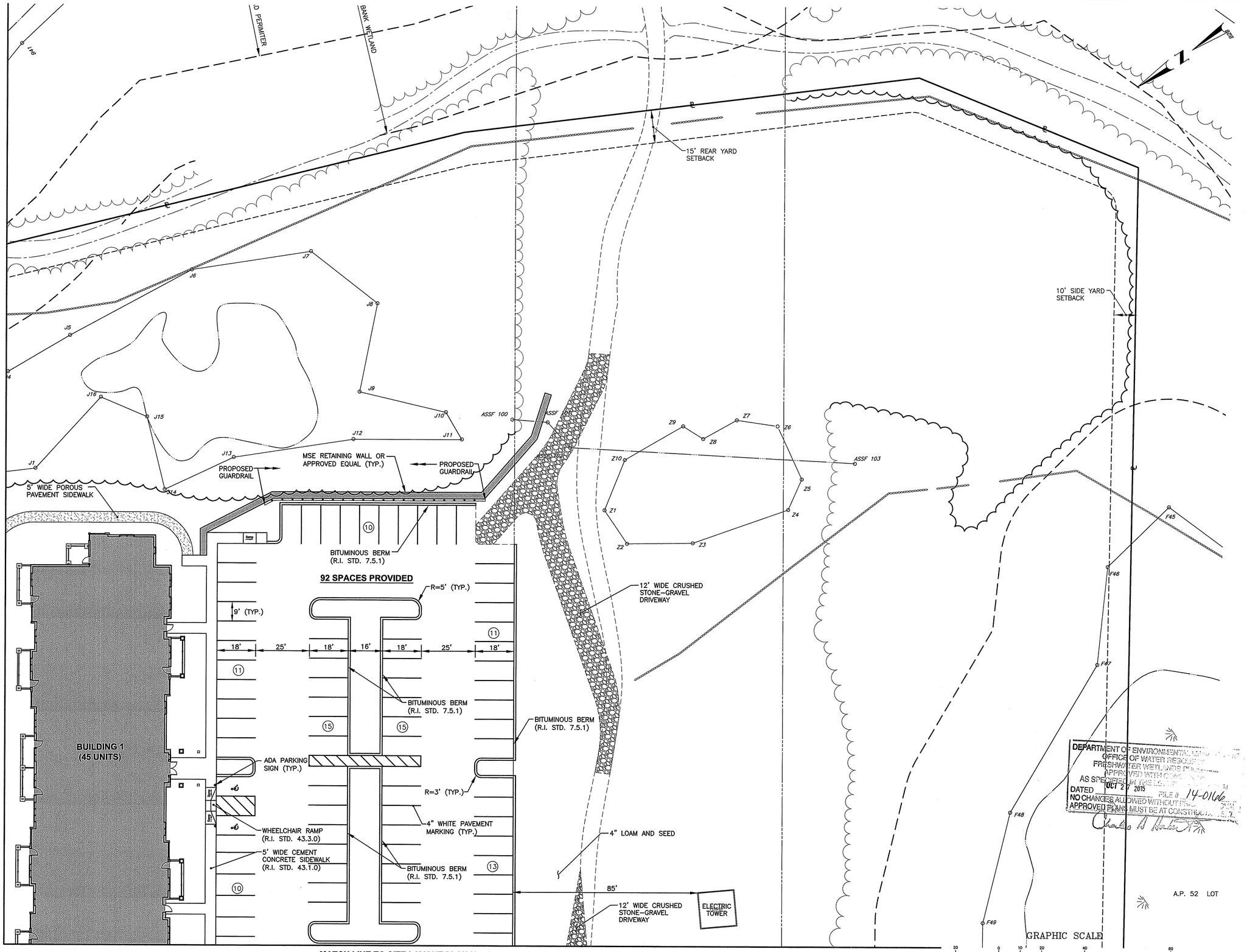
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C6.4

SHEET: 12 *OF:* 44



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER
DATED OCT 27 2015 FILE # 14-0116
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• Landscape Architecture

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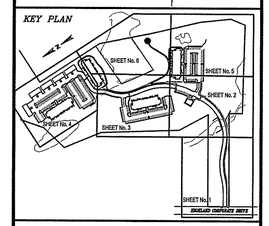
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
6/9/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 5

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035–C06–SITE–R6.dwg

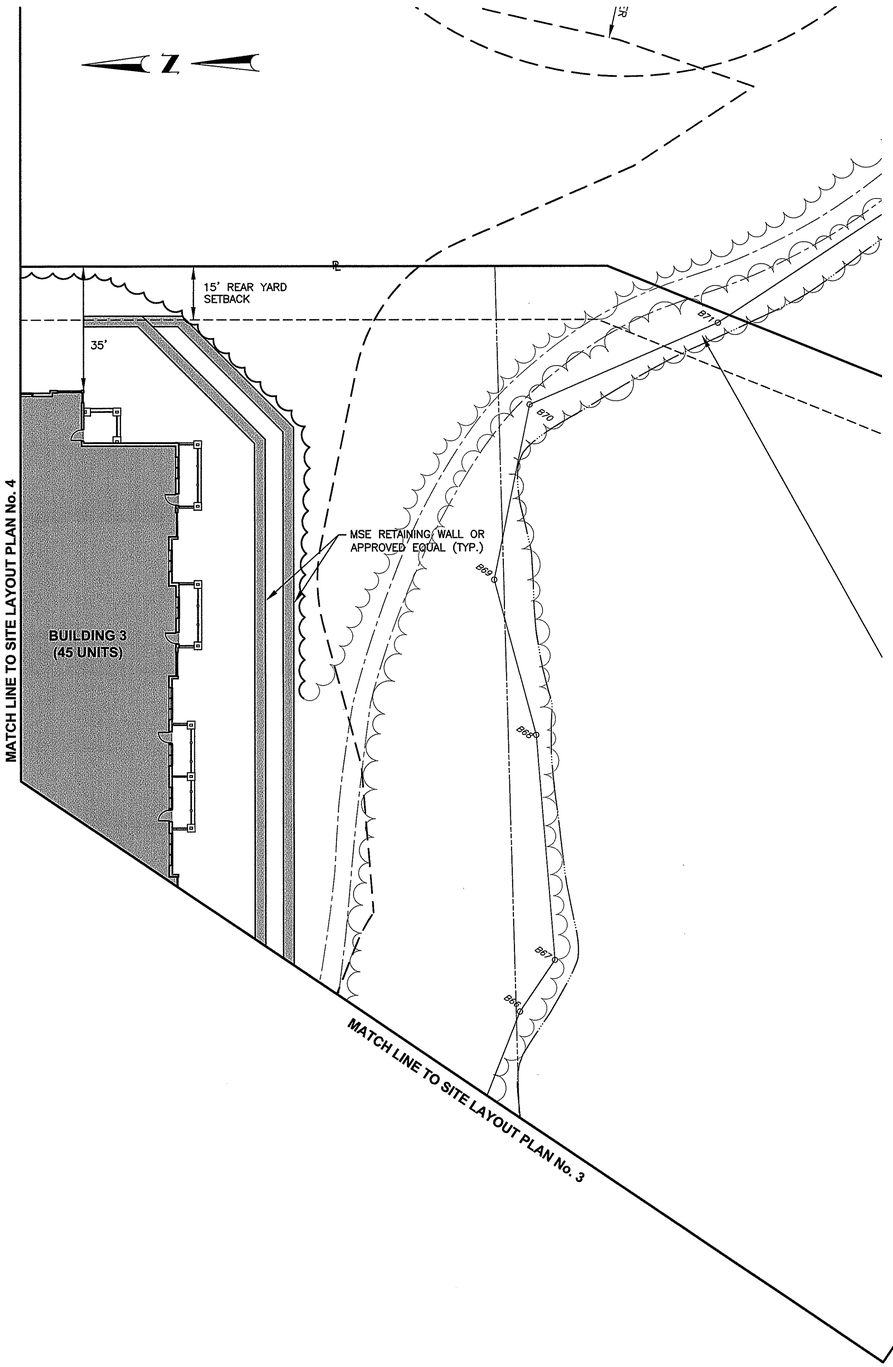
REVISIONS

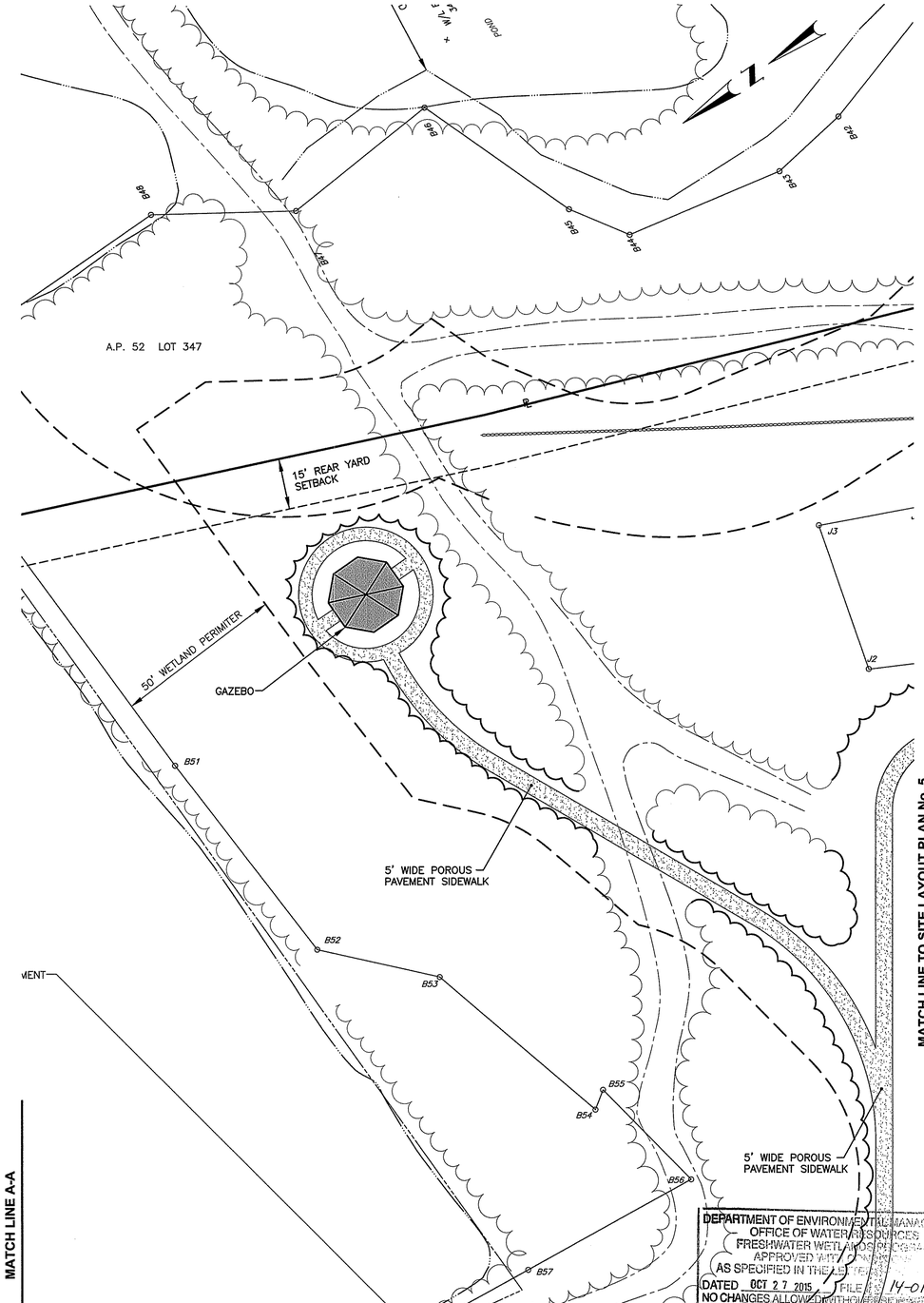
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C6.5

SHEET: 13 *OF:* 44





DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE ATTACHED LETTER
DATED OCT 27 2015 FILE 14-0166
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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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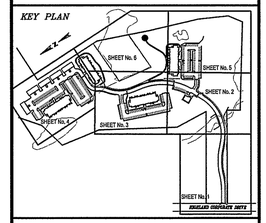
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9-11-15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 6

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C6.6

SHEET: 14 *OF:* 44

DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 1	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	381.00	--	377.50 (12")
CB 2	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	381.00	377.30 (12")	377.00 (12")
CB 3	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	368.20	--	365.00 (12")
CB 4	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	368.20	364.80 (12")(NE) 364.50 (12")(NW)	363.00 (18")(SE)
DMH 1	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	363.80	359.00 (18")	358.90 (18")

MATCH LINE TO GRADING and DRAINAGE PLAN No. 2

A.P. 52 LOT 360

A.P. 52 LOT 362

APPROX. EDGE OF CVS PARKING LOT

RETAINING WALL

LIMIT OF DISTURBANCE

LIMIT OF DISTURBANCE

EXISTING BLACKSTONE VALLEY ELECTRIC CO. EASEMENT

ELECTRIC TOWER

DMH1

CB4

CB3

CB2

CB1

Brush/Heavy Vegetation

Sidewalk

OHW

P.E.B.

BASELINE S.H.P. 2386

HIGHLAND CORPORATE DRIVE

ASSF3

ASSF2

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
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AS SPECIFIED IN THE
DATED OCT 27 2015 14-0166
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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/11/15

KEY PLAN

SHEET No. 6 SHEET No. 5 SHEET No. 2 SHEET No. 3 SHEET No. 4 SHEET No. 1

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 1

DATE: AUGUST 2014

SCALE: 1"=20'

DWG. NAME: 2035-C07-GRADE-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

C7.1

SHEET: 15 *OF:* 44

MATCH LINE TO GRADING and DRAINAGE PLAN No. 5

MATCH LINE TO GRADING and DRAINAGE PLAN No. 3

MATCH LINE TO GRADING and DRAINAGE PLAN No. 1

BUILDING 1
(45 UNITS)
F.F. ELEV.
=353.00

COMMUNITY
BUILDING
F.F. ELEV.=364.50

LIMIT OF DISTURBANCE

12' WIDE CRUSHED STONE-GRAVEL DRIVEWAY

4" LOAM AND SEED

12' PAVED APRON WITH REINFORCED CONCRETE SIDEWALK

PROVIDE 6" DIA. PRESSURE TREATED POST EACH SIDE OF DRIVEWAY WITH CHAIN AND LOCK

LIMIT OF WETLAND

PROPOSED TREELINE

12" FE SECTION WITH R-3 RIP-RAP INV.=358.50

12" FE SECTION WITH R-3 RIP-RAP INV.=358.00

HEADWALL EACH SIDE OF ROAD

CULVERT 1
4' WIDE x 3' HIGH CONCRETE CULVERT WITH OPEN BOTTOM (L=50')
INV.(IN)=334.75 (STA. 16+03 LT.)
INV.(OUT)=333.00 (STA. 16+08 RT.)
NOTE: CONTRACTOR SHALL INSTALL AT LOW POINT OF ASSF AREA

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 5	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE GRATE)	358.30	--	355.20 (12")
CB 6	PRECAST CONCRETE (6' DIA.)	R.I. STD. 6.3.0 (DOUBLE GRATE)	358.30	355.00 (12")(N) 354.00 (18")(W)	353.90 (24")(E)
CB 7	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	362.20	359.20 (6")	359.00 (12")
CB 8	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	362.30	357.50 (12")(W) 358.50 (12")(N)	357.00 (18")(E)
CB 9	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	361.70	--	358.00 (12")
CB 10	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	356.80	--	353.00 (12")
CB 11	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	355.90	352.90 (12")(W) 352.10 (18")(N)	352.00 (18")(E)
CB 16	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	366.50	363.20 (12")(NW) 363.00 (12")(N)	362.50 (18")(S)
CB 17	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	366.50	--	363.40 (12")
CB 29	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	375.80	372.00 (12")(NW) 372.00 (12")(N)	368.00 (18")(SE)
CB 30	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	376.00	--	373.00 (12")
DMH 2	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	360.10	356.00 (18")	355.90 (18")
DMH 3	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	360.00	352.00 (24")	351.90 (24")
DMH 4	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	355.70	350.00 (24")	349.90 (24")
DMH 12	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	356.00	352.00 (24")	351.30 (24")
DMH 13	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	366.50	362.00 (24")(NW) 362.00 (18")(N)	357.00 (24")(S)
DMH 14	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	366.00	362.70 (18")(N) 362.70 (18")(NW)	362.50 (24")(NW)

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
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DATED
NO CHANGES ALLOWED WITHOUT WRITTEN APPROVAL
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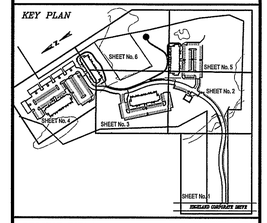
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 2

DATE: AUGUST 2014
SCALE: 1"=20'

DWG. NAME: 2035-C07-GRADE-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
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3	WATER SERVICE	03/05/15
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6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

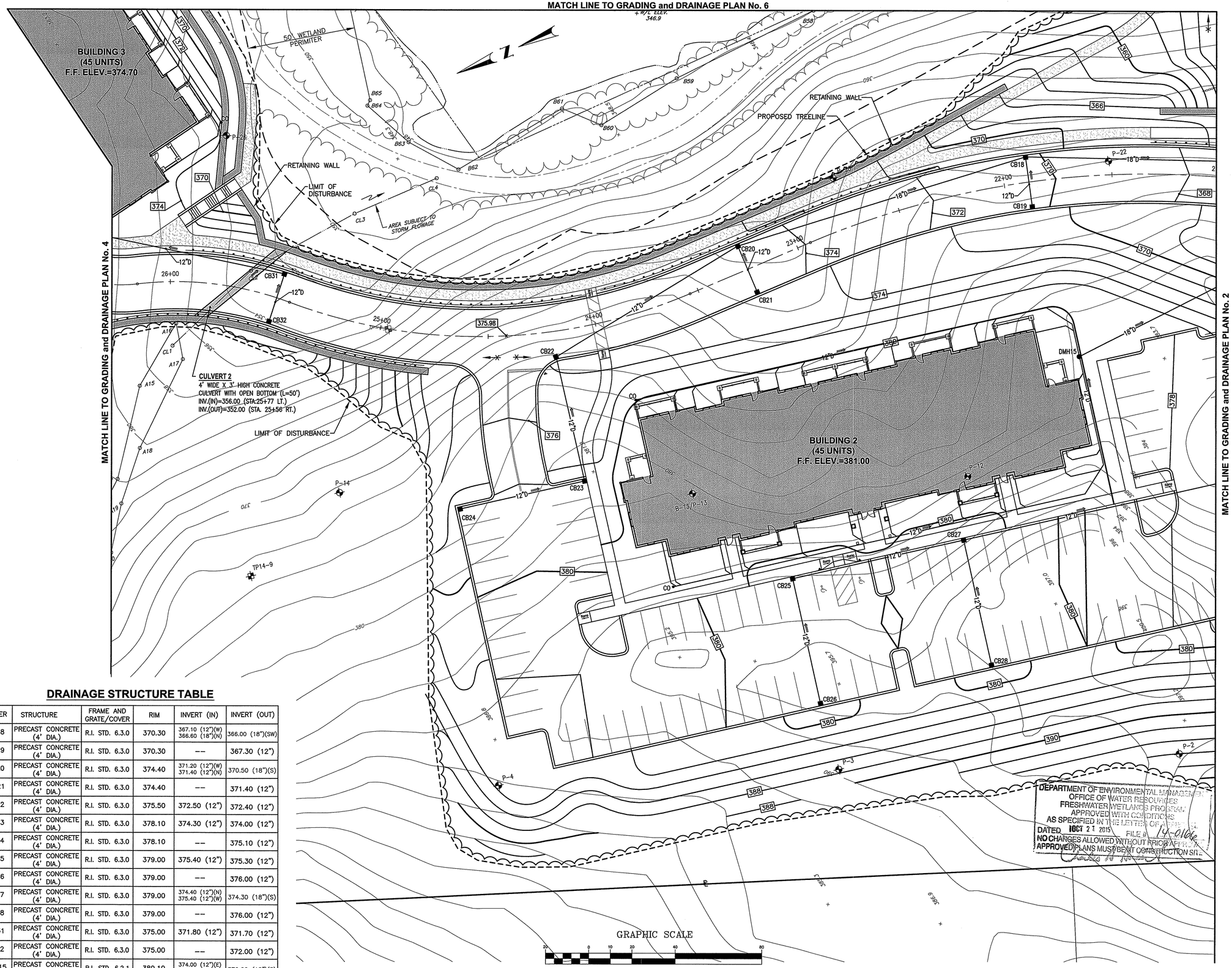
C7.2

SHEET: 16 *OF:* 44

MATCH LINE TO GRADING and DRAINAGE PLAN No. 6

MATCH LINE TO GRADING and DRAINAGE PLAN No. 4

MATCH LINE TO GRADING and DRAINAGE PLAN No. 2



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 18	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	370.30	367.10 (12")(W) 366.60 (18")(N)	366.00 (18")(SW)
CB 19	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	370.30	---	367.30 (12")
CB 20	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	374.40	371.20 (12")(W) 371.40 (12")(N)	370.50 (18")(S)
CB 21	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	374.40	---	371.40 (12")
CB 22	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	375.50	372.50 (12")	372.40 (12")
CB 23	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	378.10	374.30 (12")	374.00 (12")
CB 24	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	378.10	---	375.10 (12")
CB 25	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	379.00	375.40 (12")	375.30 (12")
CB 26	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	379.00	---	376.00 (12")
CB 27	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	379.00	374.40 (12")(N) 375.40 (12")(W)	374.30 (18")(S)
CB 28	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	379.00	---	376.00 (12")
CB 31	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	375.00	371.80 (12")	371.70 (12")
CB 32	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	375.00	---	372.00 (12")
DMH 15	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	380.10	374.00 (12")(E) 374.00 (12")(W)	370.00 (18")(S)

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Phone: (401) 738-5660

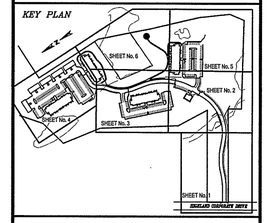
Massachusetts
103 Commonwealth Avenue
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Phone: (508) 695-1700

Email: cei@crossmaneng.com

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/11/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 3

DATE: AUGUST 2014

SCALE: 1"=20'

DWG. NAME: 2035-C07-GRADE-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15
		OCT 16 2015

DRAWING NUMBER

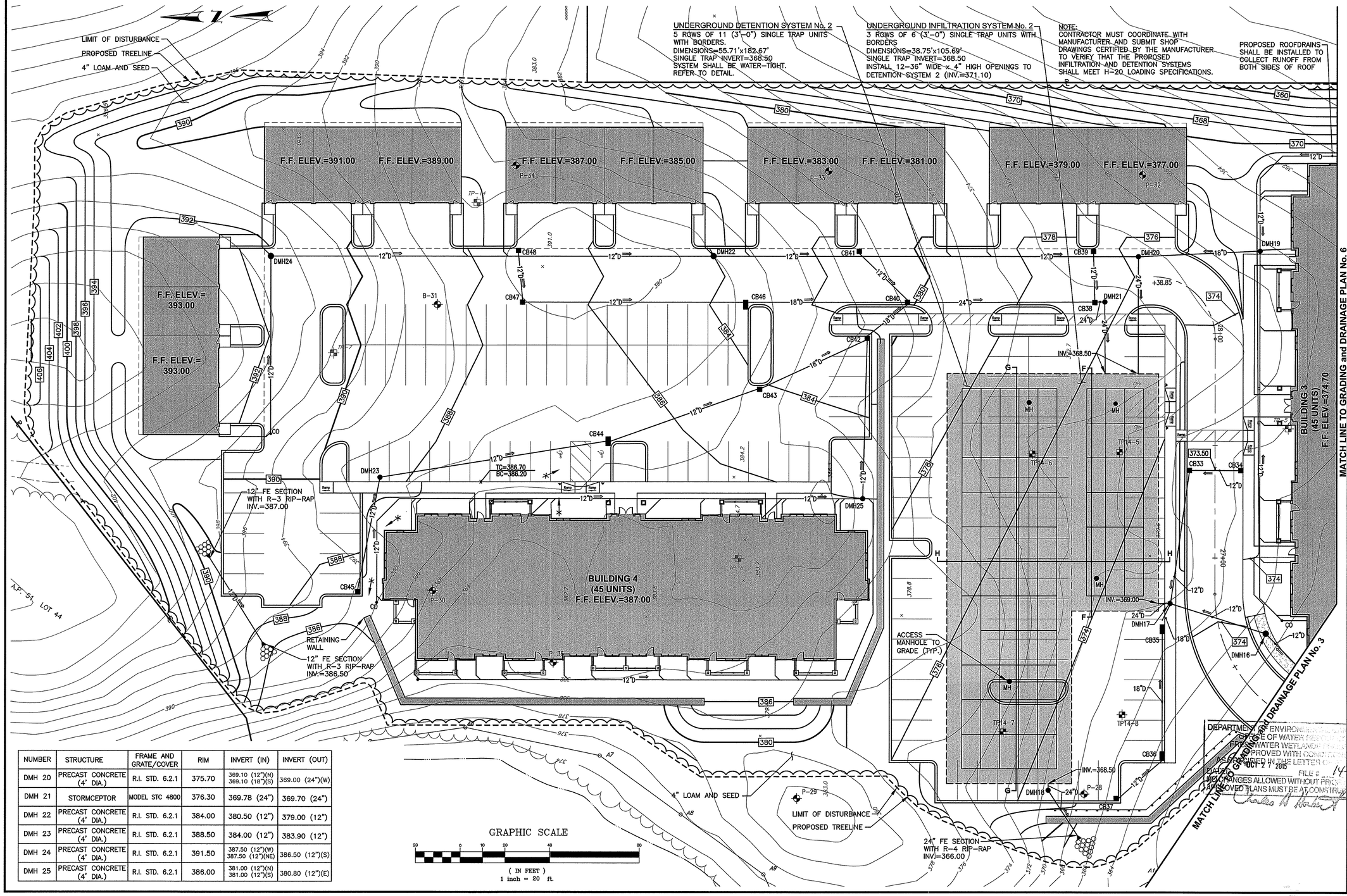
C7.3

SHEET: 17 *OF:* ~~19~~ 44

DRAINAGE STRUCTURE TABLE

* = STRUCTURE WITH A WEIR WALL. REFER TO DETAIL

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 33	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	373.30	370.10 (12")	370.00 (12")
CB 34	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	373.30	--	370.30 (12")
CB 35	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	373.70	369.60 (18")	369.55 (18")
CB 36	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	373.50	370.30 (12")	370.20 (18")
CB 37	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	373.60	--	370.60 (12")
CB 38	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	376.50	373.30 (12")(E) 371.80 (24")(N)	370.00 (24")(S)
CB 39	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	376.60	--	373.60 (12")
CB 40	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	380.10	377.10 (12")(NE) 376.70 (12")(N) 376.60 (18")(NW)	375.80 (24")(S)
CB 41	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	381.30	--	378.30 (12")
CB 42	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	383.20	378.50 (18")(NW) 378.00 (12")(W)	377.50 (18")(SE)
CB 43	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	384.10	381.00 (12")	380.50 (12")
CB 44	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	386.40	382.60 (12")	382.50 (12")
CB 45	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	387.70	--	384.50 (12")
CB 46	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	383.40	379.60 (12")	379.50 (18")
CB 47	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	387.00	383.00 (12")	382.90 (12")
CB 48	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	387.00	--	383.30 (12")
DMH 16	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	374.40	370.60 (12")	370.50 (12")
DMH 17	STORMCEPTOR	MODEL STC 2400	375.00	369.40 (12")(E) 370.00 (12")(S) 369.40 (18")(W)	369.32 (24")(N)
DMH 18*	PRECAST CONCRETE (6' DIA.)	R.I. STD. 6.2.1	375.90	368.50 (24")	368.50 (24")
DMH 19	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	374.00	369.50 (12")(E) 369.50 (12")(W)	369.40 (18")(N)
DMH 20	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	375.70	369.10 (12")(N) 369.10 (18")(S)	369.00 (24")(W)
DMH 21	STORMCEPTOR	MODEL STC 4800	376.30	369.78 (24")	369.70 (24")
DMH 22	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	384.00	380.50 (12")	379.00 (12")
DMH 23	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	388.50	384.00 (12")	383.90 (12")
DMH 24	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	391.50	387.50 (12")(W) 387.50 (12")(NE)	386.50 (12")(S)
DMH 25	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	386.00	381.00 (12")(N) 381.00 (12")(S)	380.80 (12")(E)



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS NOTED IN THE LETTER OF OCT 2 7 2015
DATE
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
FILE # 14-0166

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

Rhode Island
151 Centerville Road
Warwick, RI 02886
Phone: (401) 738-5660

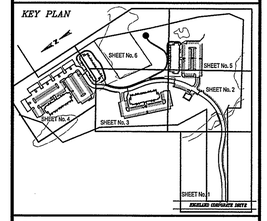
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9-1-15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R6.dwg

REVISIONS

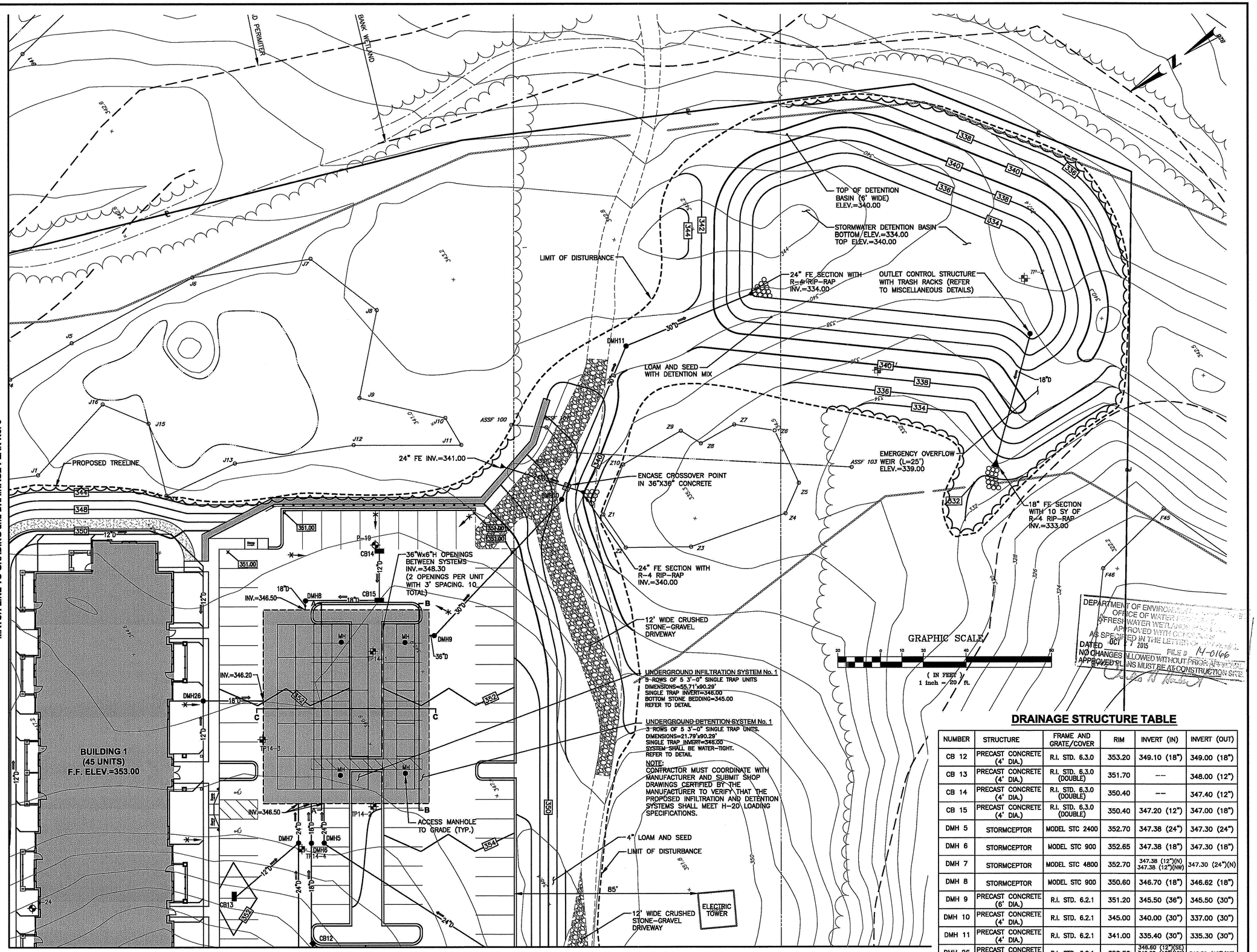
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

C7.4

SHEET: 18 *OF:* 44



DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 12	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	353.20	349.10 (18")	349.00 (18")
CB 13	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	351.70	--	348.00 (12")
CB 14	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	350.40	--	347.40 (12")
CB 15	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	350.40	347.20 (12")	347.00 (18")
DMH 5	STORMCEPTOR	MODEL STC 2400	352.70	347.38 (24")	347.30 (24")
DMH 6	STORMCEPTOR	MODEL STC 900	352.65	347.38 (18")	347.30 (18")
DMH 7	STORMCEPTOR	MODEL STC 4800	352.70	347.38 (12")(N) 347.38 (12")(NW)	347.30 (24")(N)
DMH 8	STORMCEPTOR	MODEL STC 900	350.60	346.70 (18")	346.62 (18")
DMH 9	PRECAST CONCRETE (6' DIA.)	R.I. STD. 6.2.1	351.20	345.50 (36")	345.50 (30")
DMH 10	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	345.00	340.00 (30")	337.00 (30")
DMH 11	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	341.00	335.40 (30")	335.30 (30")
DMH 26	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	352.50	346.60 (12")(SE) 346.60 (12")(NW) 347.00 (6")(NE)	346.50 (18")(SE)

* = STRUCTURE WITH A WEIR WALL. REFER TO DETAIL

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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Warwick, RI 02886
Phone: (401) 738-5660

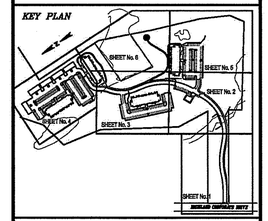
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
freshwater WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED
OCT 7 2015
FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 5

DATE: AUGUST 2014
SCALE: 1"=20'

DWG. NAME: 2035-C07-GRADE-R6.dwg

REVISIONS

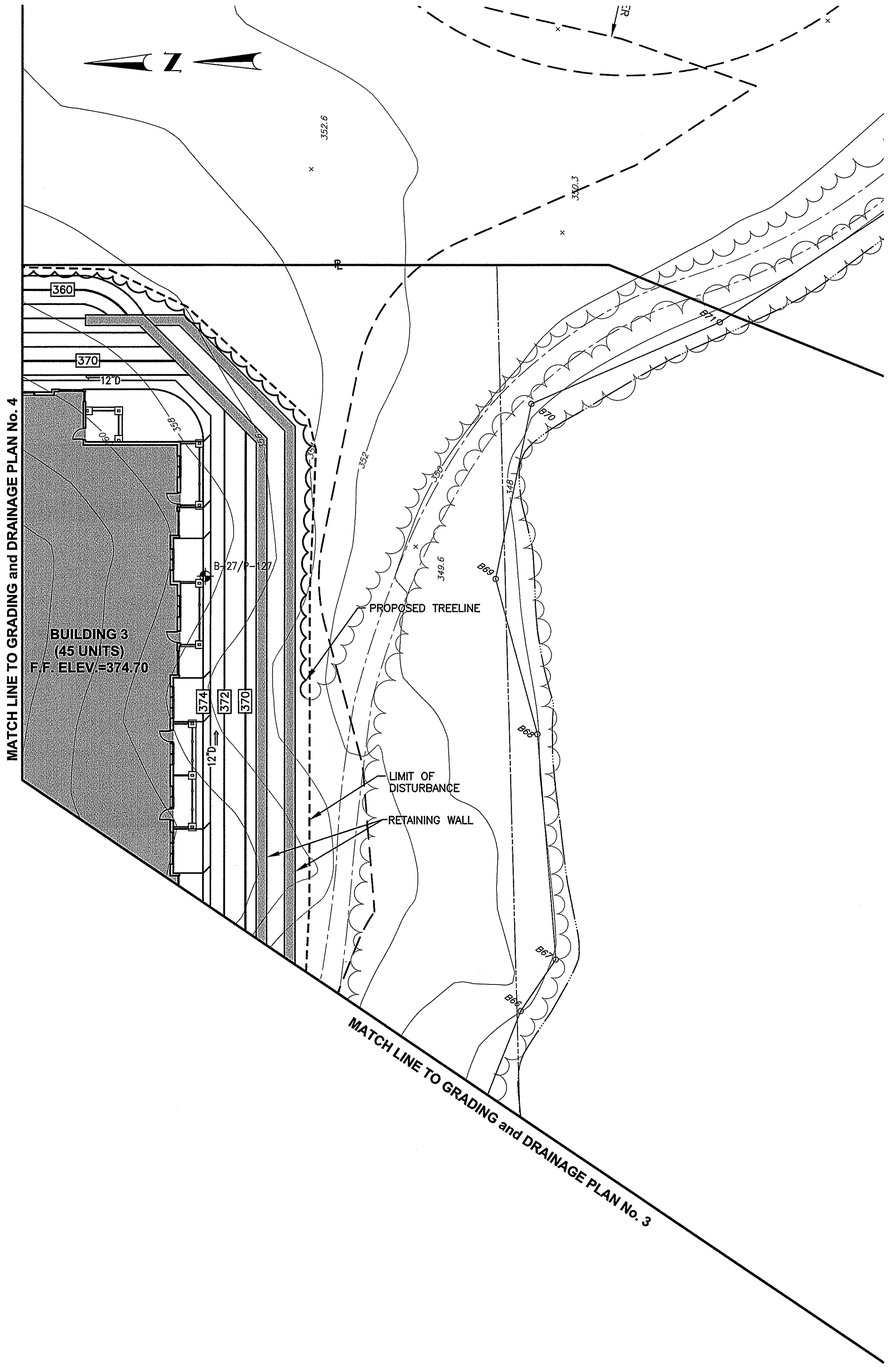
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

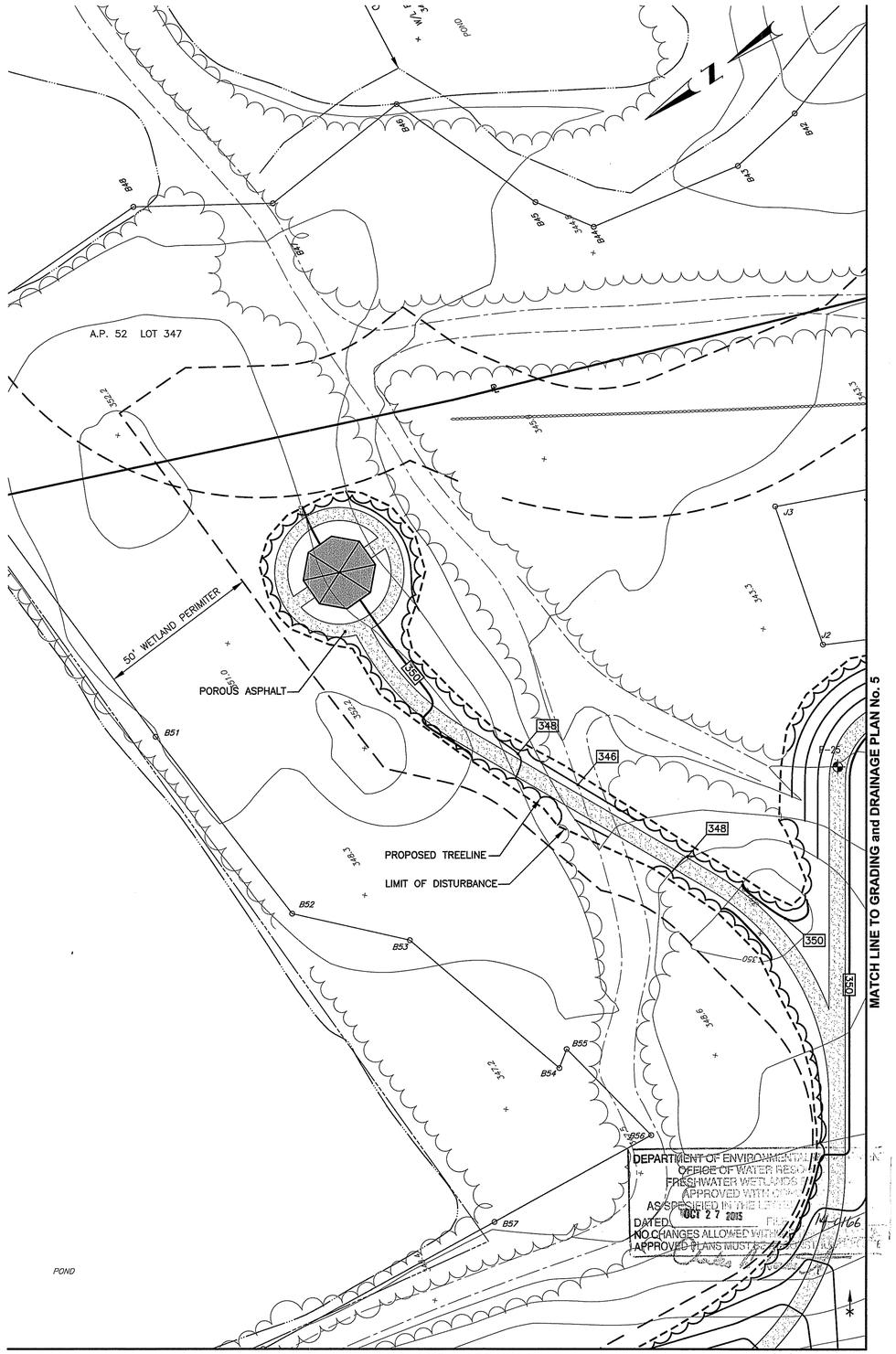
SEP 16 2015

DRAWING NUMBER

C7.5

SHEET: 19 OF: 49 44





GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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151 Centerville Road
Warwick, RI 02886
Phone: (401) 738-5660

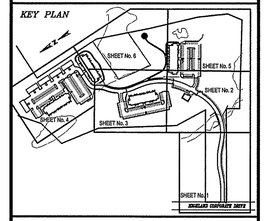
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 6

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R6.dwg

REVISIONS

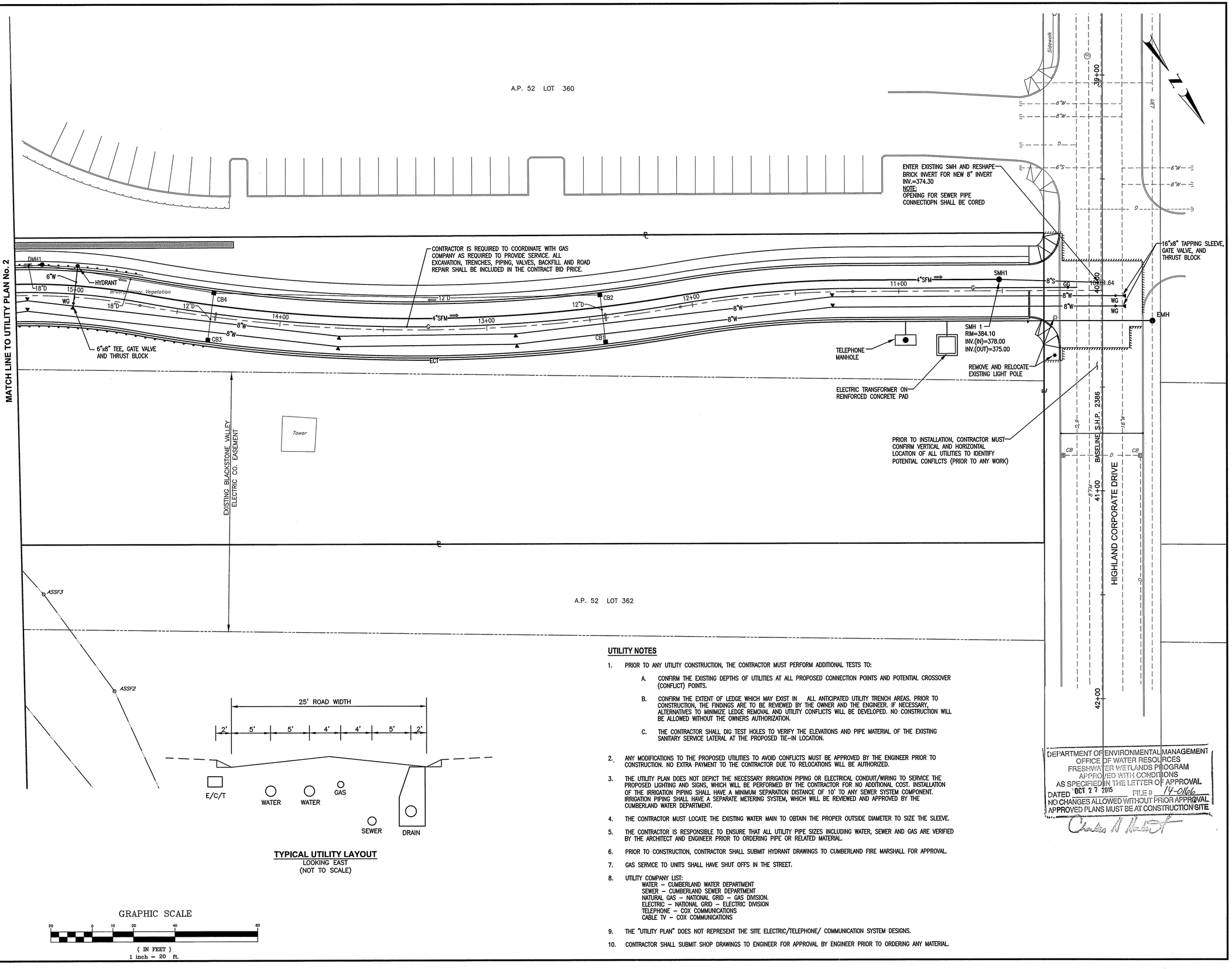
△ NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

REF. 1 of 7001

DRAWING NUMBER

C7.6

SHEET: 20 *OF:* 49 44



TYPICAL UTILITY LAYOUT
LOOKING EAST
(NOT TO SCALE)

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

UTILITY NOTES

1. PRIOR TO ANY UTILITY CONSTRUCTION, THE CONTRACTOR MUST PERFORM ADDITIONAL TESTS TO:
   - A. CONFIRM THE EXISTING DEPTHS OF UTILITIES AT ALL PROPOSED CONNECTION POINTS AND POTENTIAL CROSSOVER (CONFLICT) POINTS.
   - B. CONFIRM THE EXTENT OF LEDGE WHICH MAY EXIST IN ALL ANTICIPATED UTILITY TRENCH AREAS. PRIOR TO CONSTRUCTION, THE FINDINGS ARE TO BE REVIEWED BY THE OWNER AND THE ENGINEER. IF NECESSARY, ALTERNATIVES TO MINIMIZE LEDGE REMOVAL AND UTILITY CONFLICTS WILL BE DEVELOPED. NO CONSTRUCTION WILL BE ALLOWED WITHOUT THE OWNERS AUTHORIZATION.
   - C. THE CONTRACTOR SHALL DIG TEST HOLES TO VERIFY THE ELEVATIONS AND PIPE MATERIAL OF THE EXISTING SANITARY SERVICE LATERAL AT THE PROPOSED TIE-IN LOCATION.
2. ANY MODIFICATIONS TO THE PROPOSED UTILITIES TO AVOID CONFLICTS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. NO EXTRA PAYMENT TO THE CONTRACTOR DUE TO RELOCATIONS WILL BE AUTHORIZED.
3. THE UTILITY PLAN DOES NOT DEPICT THE NECESSARY IRRIGATION PIPING OR ELECTRICAL CONDUIT/WIRING TO SERVICE THE PROPOSED LIGHTING AND SIGNS, WHICH WILL BE PERFORMED BY THE CONTRACTOR FOR NO ADDITIONAL COST. INSTALLATION OF THE IRRIGATION PIPING SHALL HAVE A MINIMUM SEPARATION DISTANCE OF 10' TO ANY SEWER SYSTEM COMPONENT. IRRIGATION PIPING SHALL HAVE A SEPARATE METERING SYSTEM, WHICH WILL BE REVIEWED AND APPROVED BY THE CUMBERLAND WATER DEPARTMENT.
4. THE CONTRACTOR MUST LOCATE THE EXISTING WATER MAIN TO OBTAIN THE PROPER OUTSIDE DIAMETER TO SIZE THE SLEEVE.
5. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL UTILITY PIPE SIZES INCLUDING WATER, SEWER AND GAS ARE VERIFIED BY THE ARCHITECT AND ENGINEER PRIOR TO ORDERING PIPE OR RELATED MATERIAL.
6. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT HYDRANT DRAWINGS TO CUMBERLAND FIRE MARSHALL FOR APPROVAL.
7. GAS SERVICE TO UNITS SHALL HAVE SHUT OFFS IN THE STREET.
8. UTILITY COMPANY LIST:
   WATER – CUMBERLAND WATER DEPARTMENT
   SEWER – CUMBERLAND SEWER DEPARTMENT
   NATURAL GAS – NATIONAL GRID – GAS DIVISION.
   ELECTRIC – NATIONAL GRID – ELECTRIC DIVISION
   TELEPHONE – COX COMMUNICATIONS
   CABLE TV – COX COMMUNICATIONS
9. THE "UTILITY PLAN" DOES NOT REPRESENT THE SITE ELECTRIC/TELEPHONE/ COMMUNICATION SYSTEM DESIGNS.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL BY ENGINEER PRIOR TO ORDERING ANY MATERIAL.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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CROSSMAN ENGINEERING

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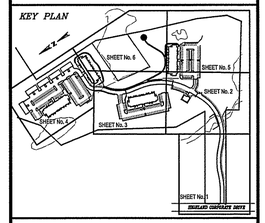
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

C8.1

SHEET: 21 *OF:* 44

MATCH LINE TO UTILITY PLAN PLAN No. 5

MATCH LINE TO UTILITY PLAN No. 3

MATCH LINE TO UTILITY PLAN No. 1

BUILDING 1
(45 UNITS)
F.F. ELEV.
=353.00

COMMUNITY
BUILDING
F.F. ELEV.=364.00
INV.=360.00

SMH 2
RIM=353.50
INV.=346.50

PUMP STATION
RIM=357.60
INV.(6"IN)=350.00
INV.(8"IN)=345.50
INV.(OUT)=351.60

12' WIDE CRUSHED
STONE–GRAVEL
DRIVEWAY

45° BEND AND
THRUST BLOCK

8"x4" TEE, GATE
VALVE AND
THRUST BLOCK

8"x8" TEE, GATE
VALVE AND
THRUST BLOCK

REMOTE FIRE
DEPARTMENT
CONNECTION

HYDRANT

6"x8" TEE, GATE VALVE
AND THRUST BLOCK

LIMIT OF
WETLAND

AREA SUBJECT TO
STORM FLOWAGE

DMH4, DMH12, DMH13, DMH14, DMH3, DMH2
CB11, CB10, CB14, CB17, CB8, CB9, CB7, CB6, CB5, CB29, CB30
EMH, HH, CO, FDC, GG, WG
ECT, C, 24"D, 18"D, 12"D, 12"D, 6"D, 8"S, 8"W, 6"W, 4"SDM
+00, 18+00, 19+00, 20+00
F50, F51, F52, F53, F
ASSF12A, ASSF11A, ASSF10A, ASSF11, ASSF10, ASSF9A, ASSF9, ASSF7A, ASSF8A, ASSF6A, ASSF5A, ASSF7, ASSF8, ASSF4A, ASSF6, ASSF3A, ASSF4, ASSF5
17"x10" E
N
S

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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STEVEN M. CABRAL
No. 4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN
SHEET No. 6
SHEET No. 5
SHEET No. 4
SHEET No. 3
SHEET No. 2
SHEET No. 1

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035–C08–UTILITY–R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

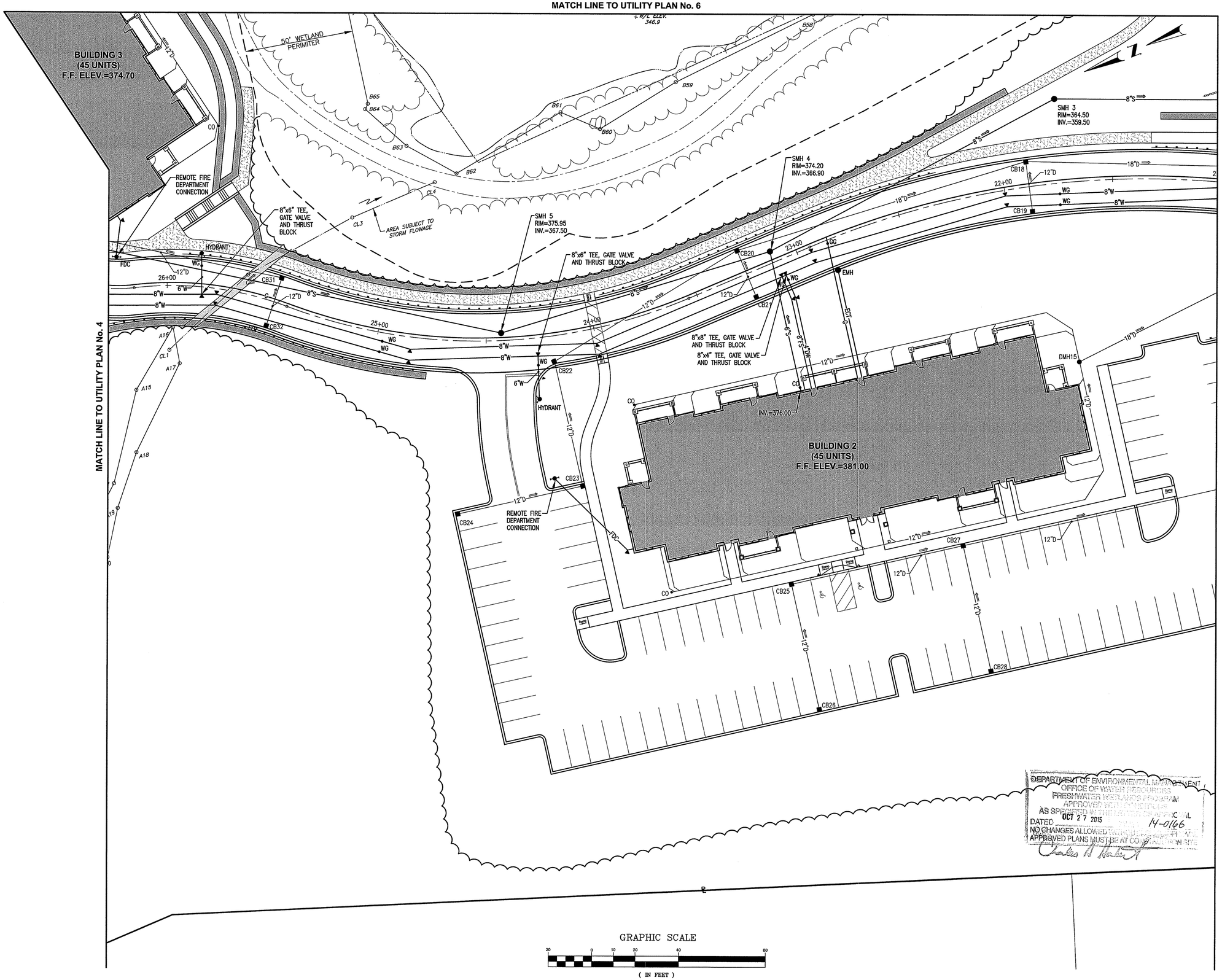
C8.2

SHEET: 22 *OF:* 44

MATCH LINE TO UTILITY PLAN No. 6

MATCH LINE TO UTILITY PLAN No. 4

MATCH LINE TO UTILITY PLAN No. 2



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE PERMIT
DATED OCT 27 2015
NO CHANGES ALLOWED
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

14-0166

Rec'd 11/2015

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

Rhode Island
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Warwick, RI 02886
Phone: (401) 738-5660

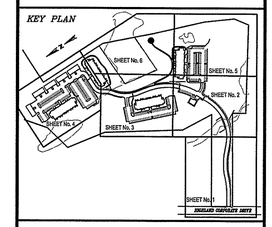
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 3

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R6.dwg

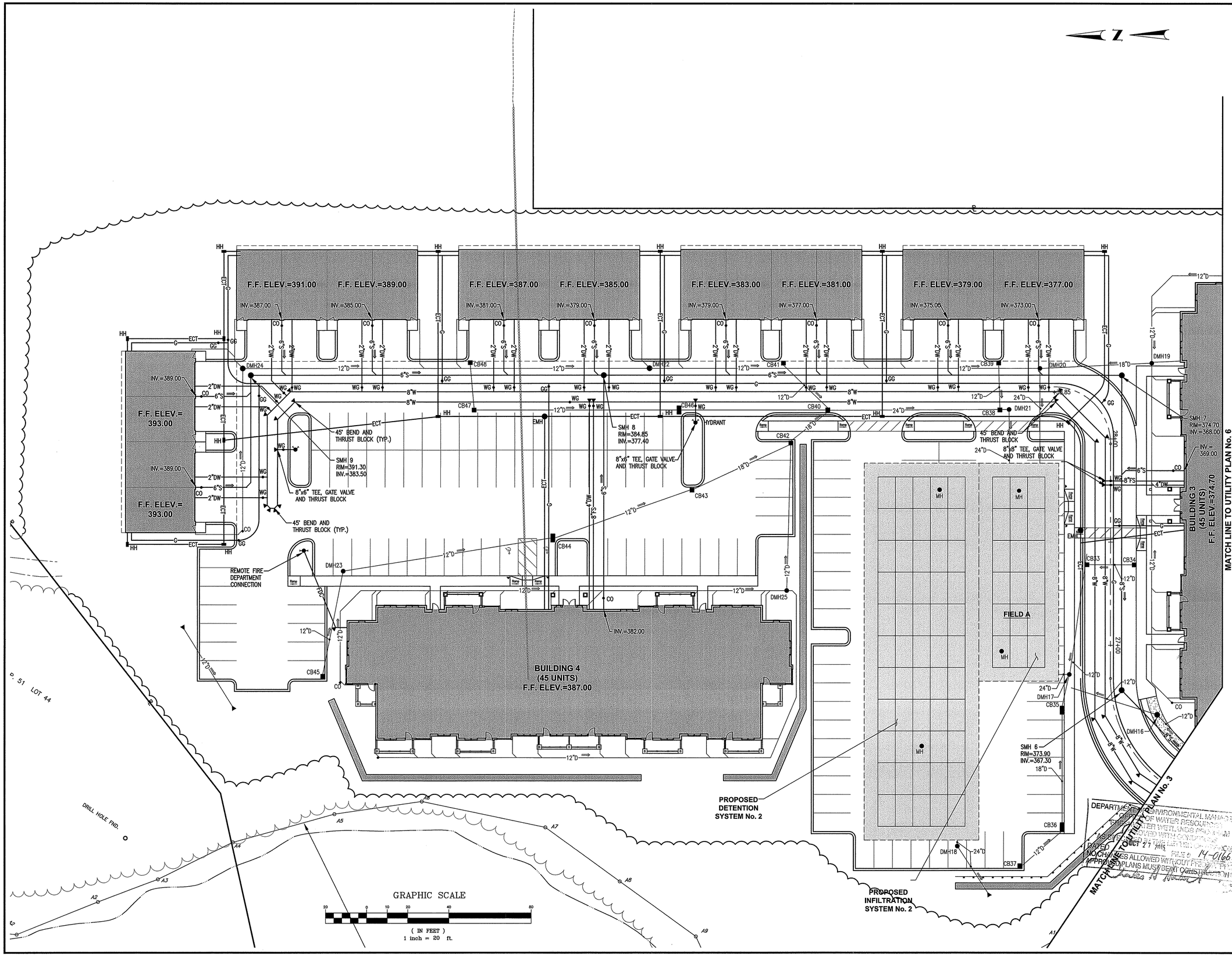
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
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6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C8.3

SHEET: 23 *OF:* 44



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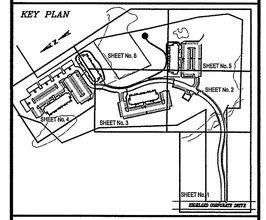
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/1/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R6.dwg

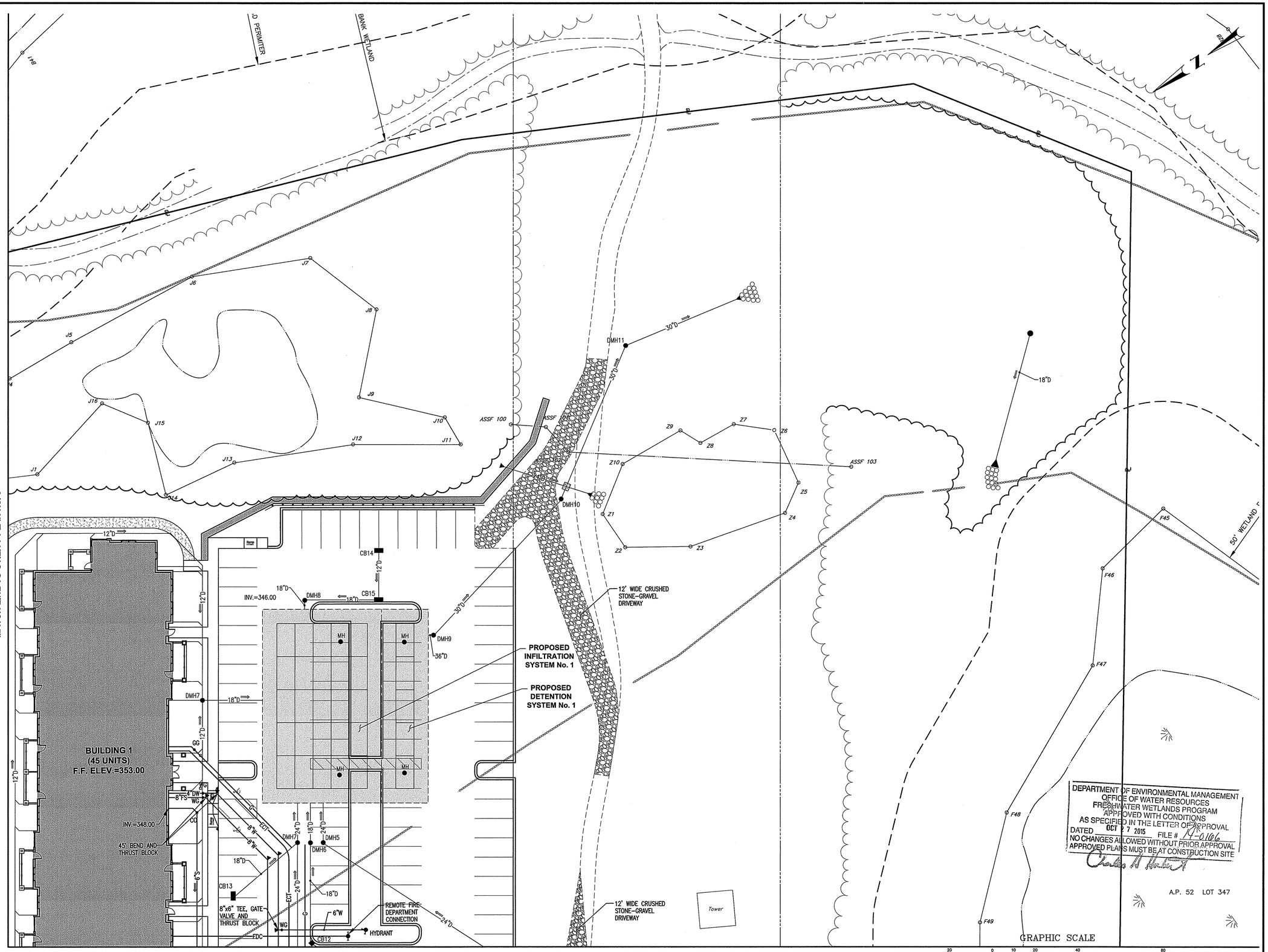
REVISIONS

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6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C8.4

SHEET: 24 *OF:* ~~49~~ 44



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 7 2015 FILE # 14-0106
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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• Permitting
• Landscape Architecture

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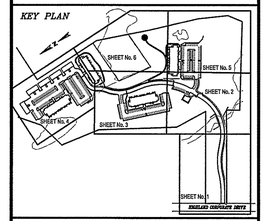
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 5

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R6.dwg

REVISIONS

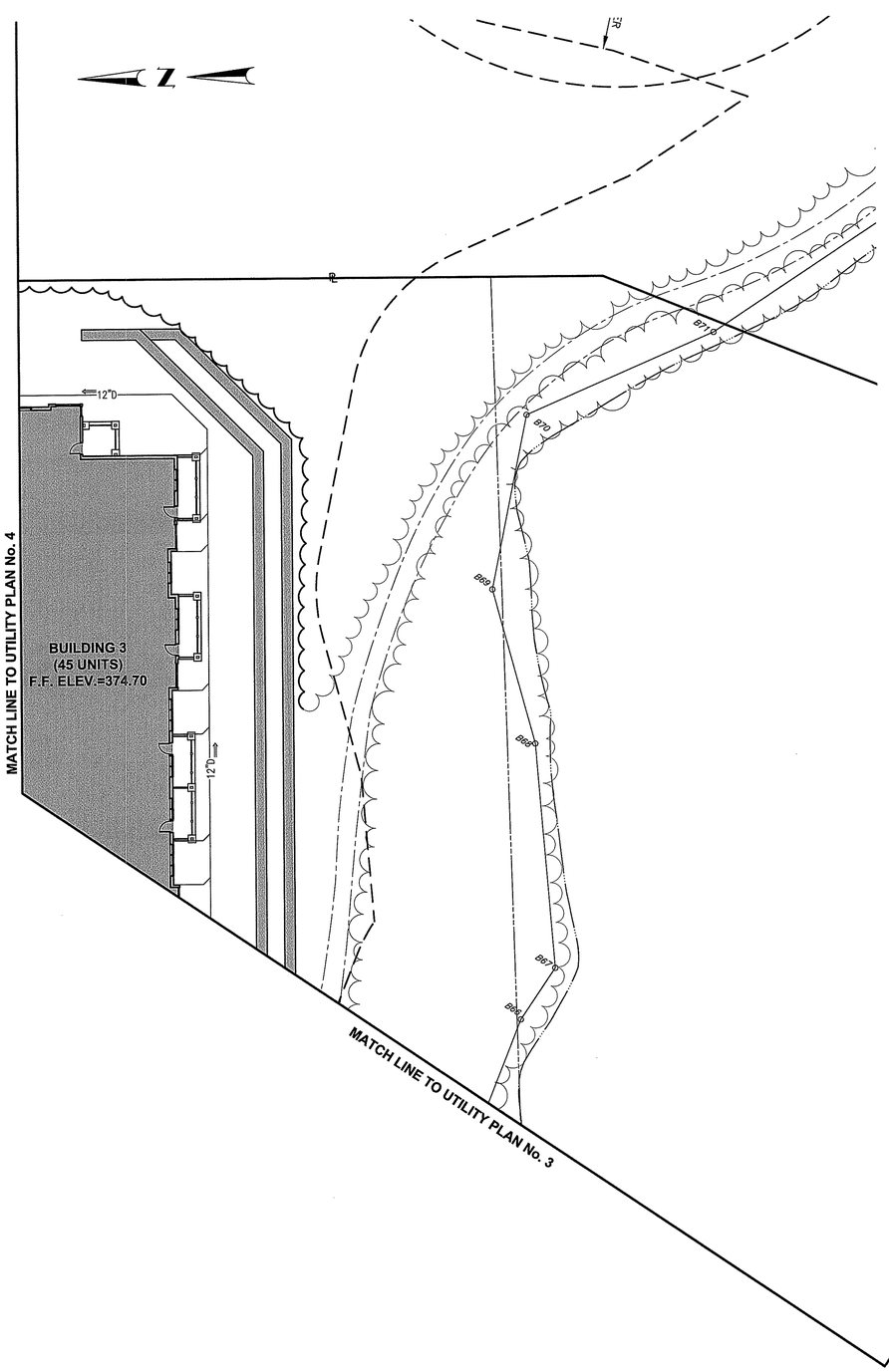
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
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3	WATER SERVICE	03/05/15
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5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

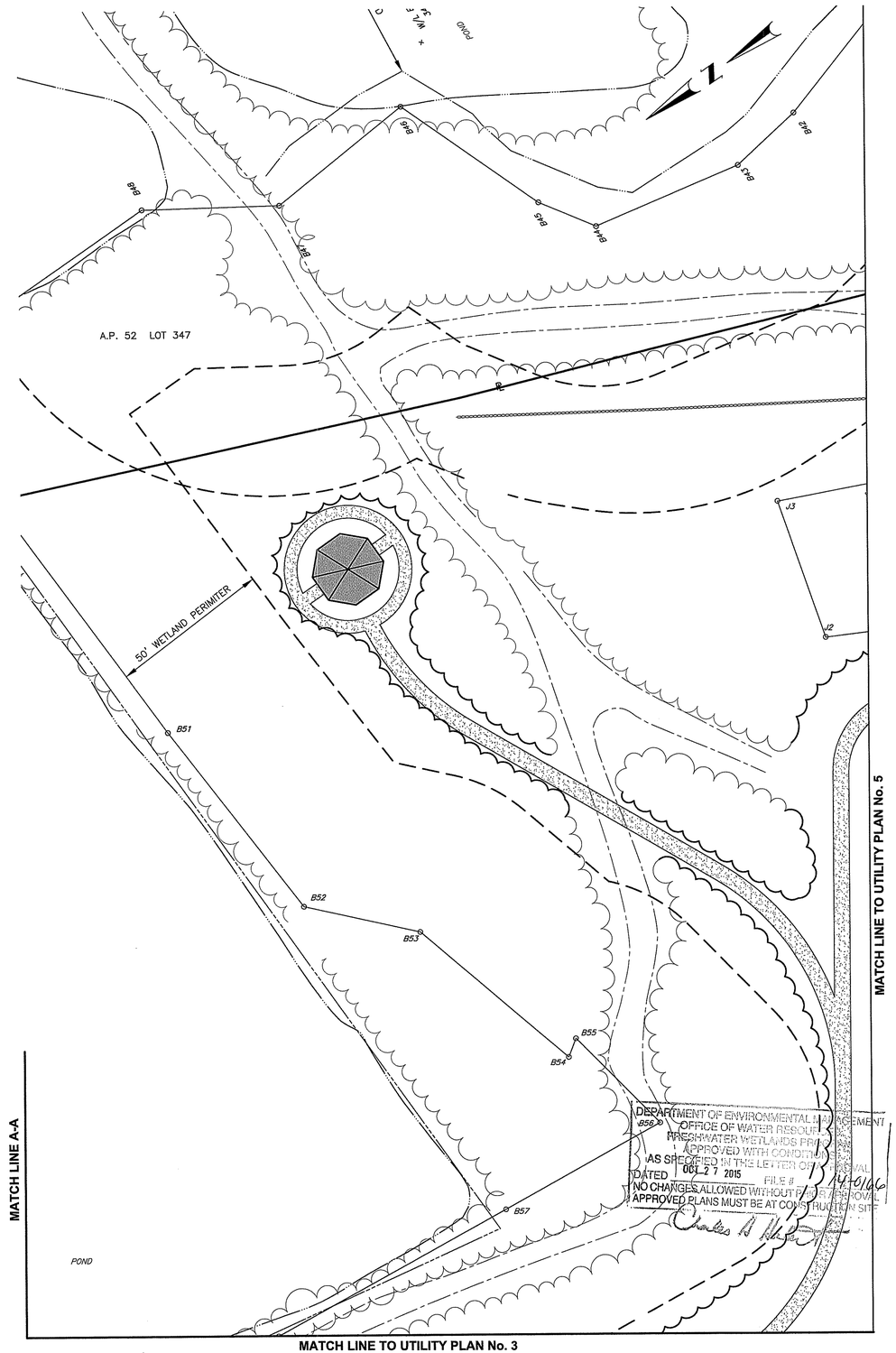
SEP 16 2015

DRAWING NUMBER

C8.5

SHEET: 25 OF: 49 44





GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 27 2015 FILE # 14-0166
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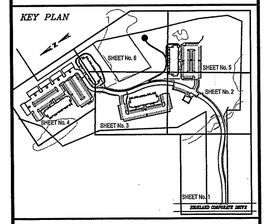
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
6/1/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 6

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R6.dwg

REVISIONS

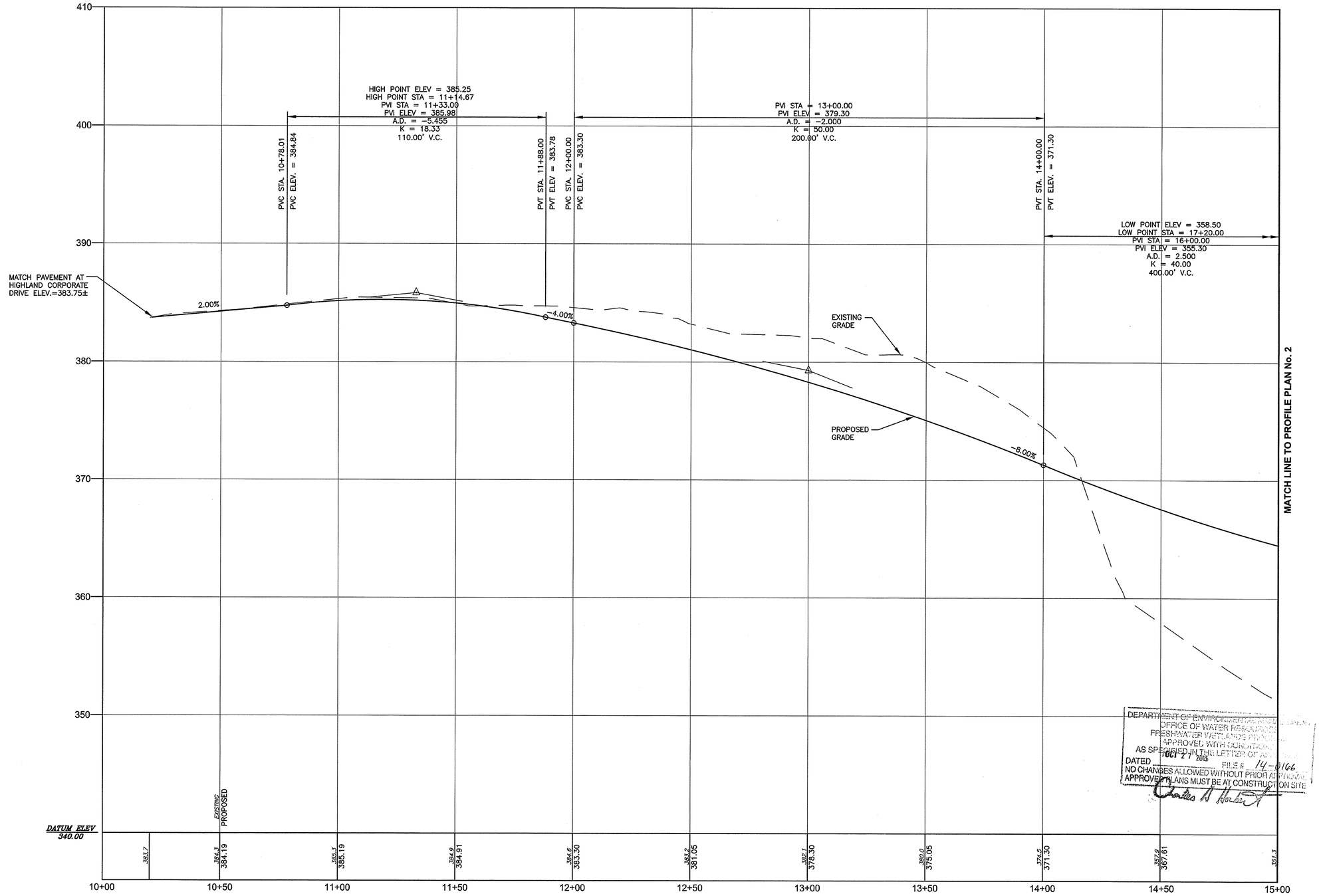
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

C8.6

SHEET: 26 *OF:* 44



ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
OCT 27 2015
DATED _____ FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

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• Environmental
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• Surveying
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/1/15

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C09-PROFILE-R6.dwg

REVISIONS

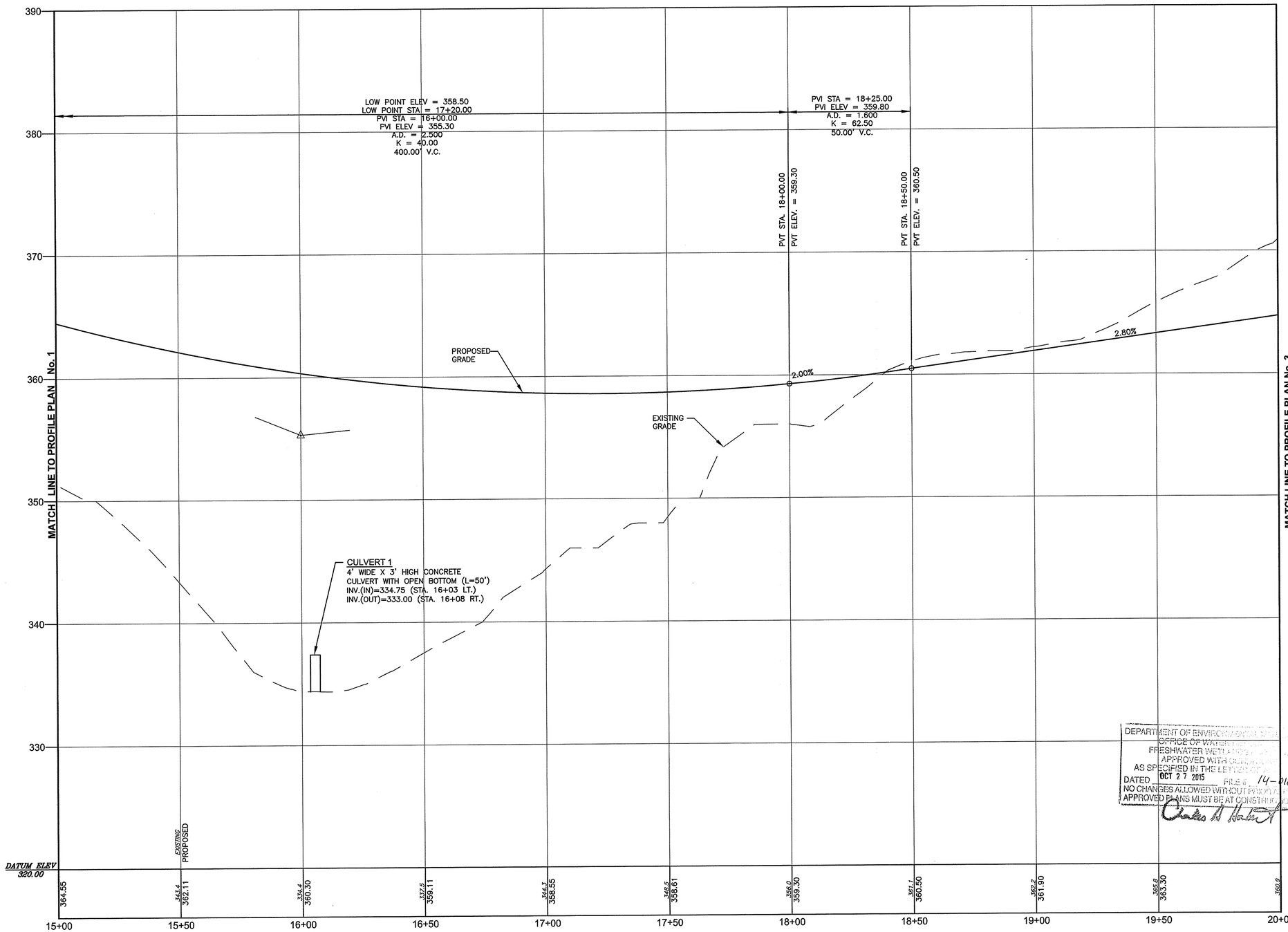
△ NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

OCT 16 2015

DRAWING NUMBER

C9.1

SHEET: 27 *OF:* 44



ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
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DATED OCT 27 2015 RIDEM # 14-0166
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
6-11-15

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C09-PROFILE-R6.dwg

REVISIONS

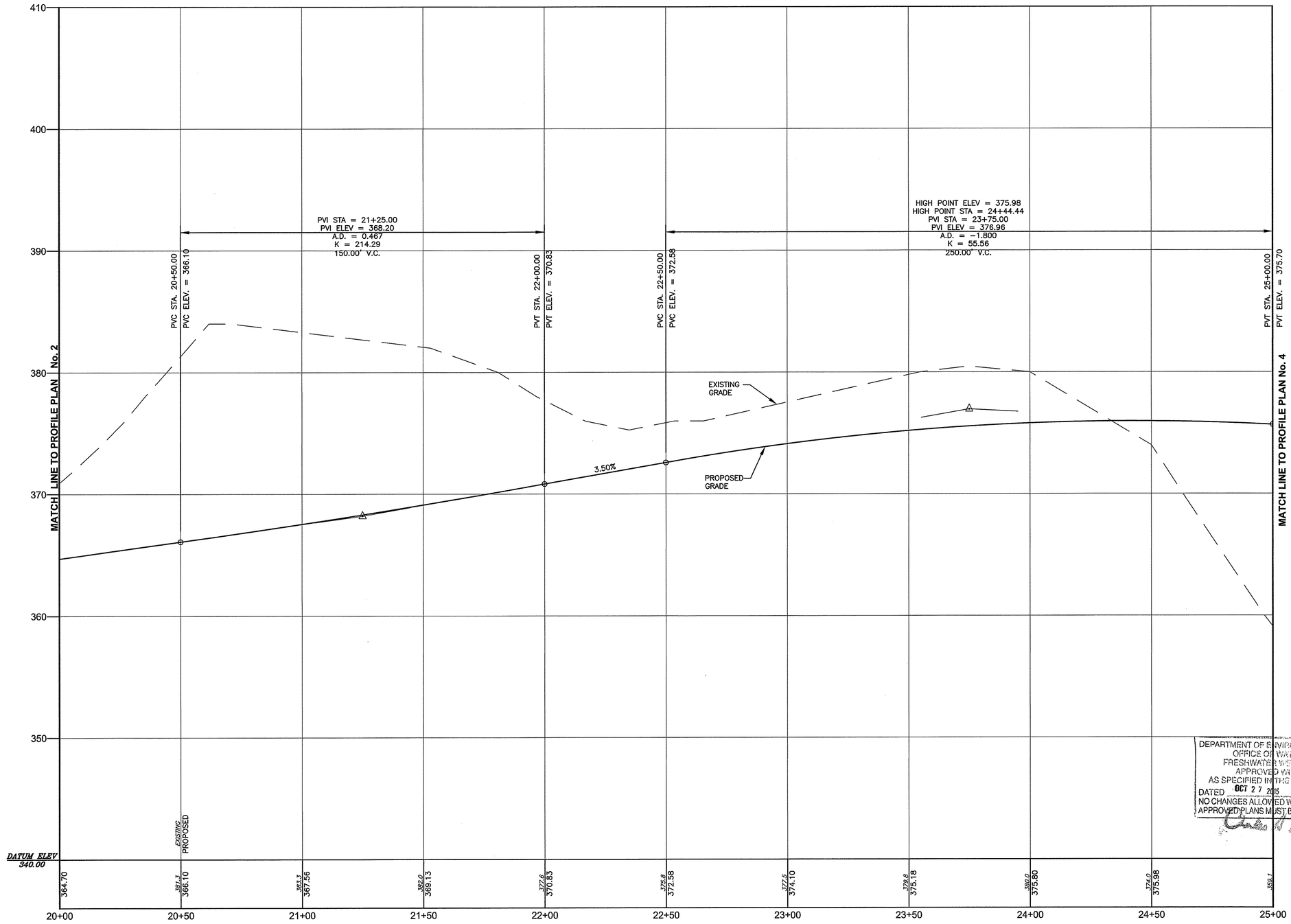
NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
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6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

C9.2

SHEET: 28 *OF:* 44



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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
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DATED OCT 27 2015 FILE 14-0166
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ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/14/15

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 3

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C09-PROFILE-R6.dwg

REVISIONS

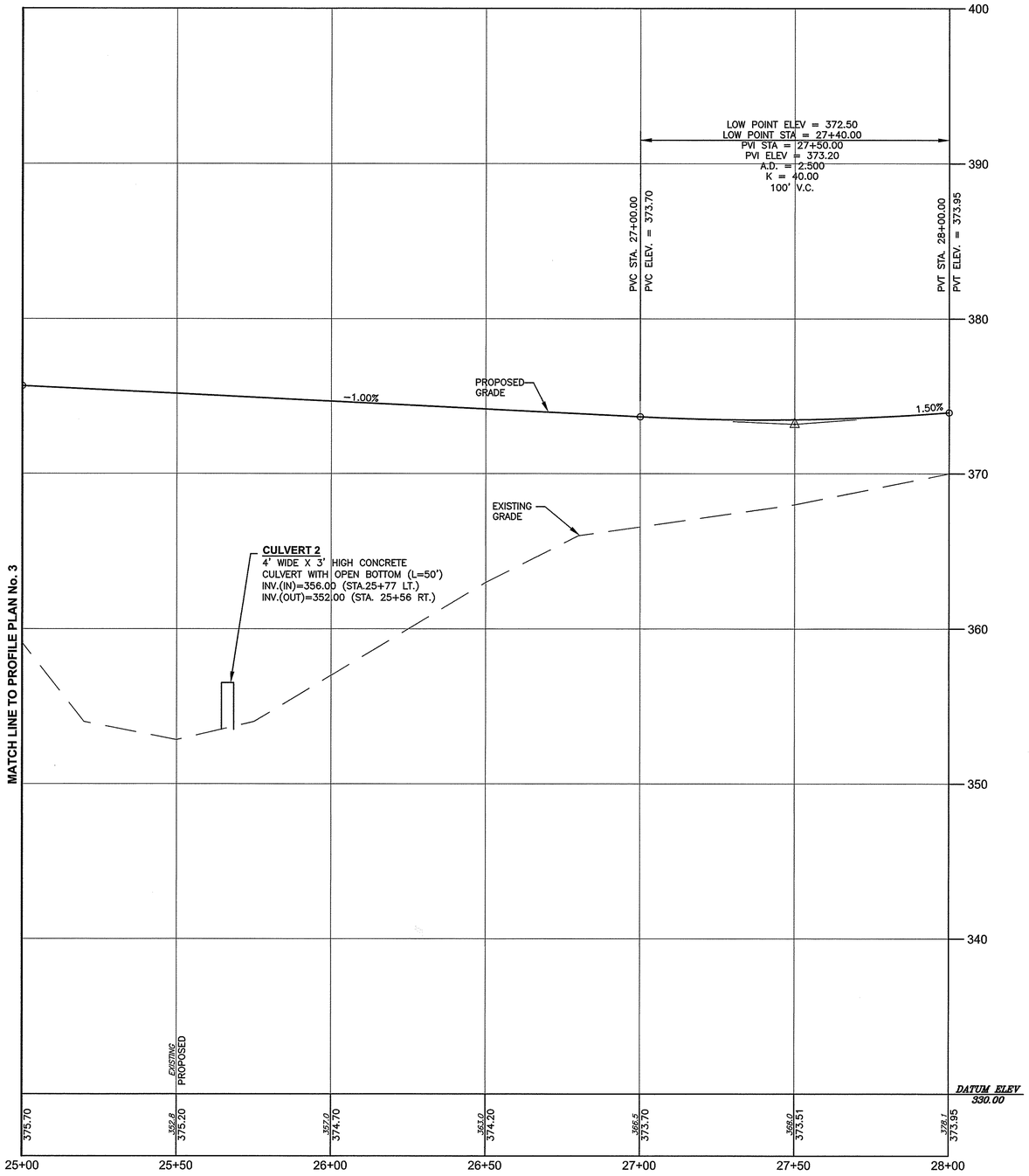
NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
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6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 15 2015

DRAWING NUMBER

C9.3

SHEET: 29 *OF:* 44



ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED OCT 27 2015
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FILE # 14-0166
Charles A. Horbert

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
6/11/15

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C09-PROFILE-R6.dwg

REVISIONS

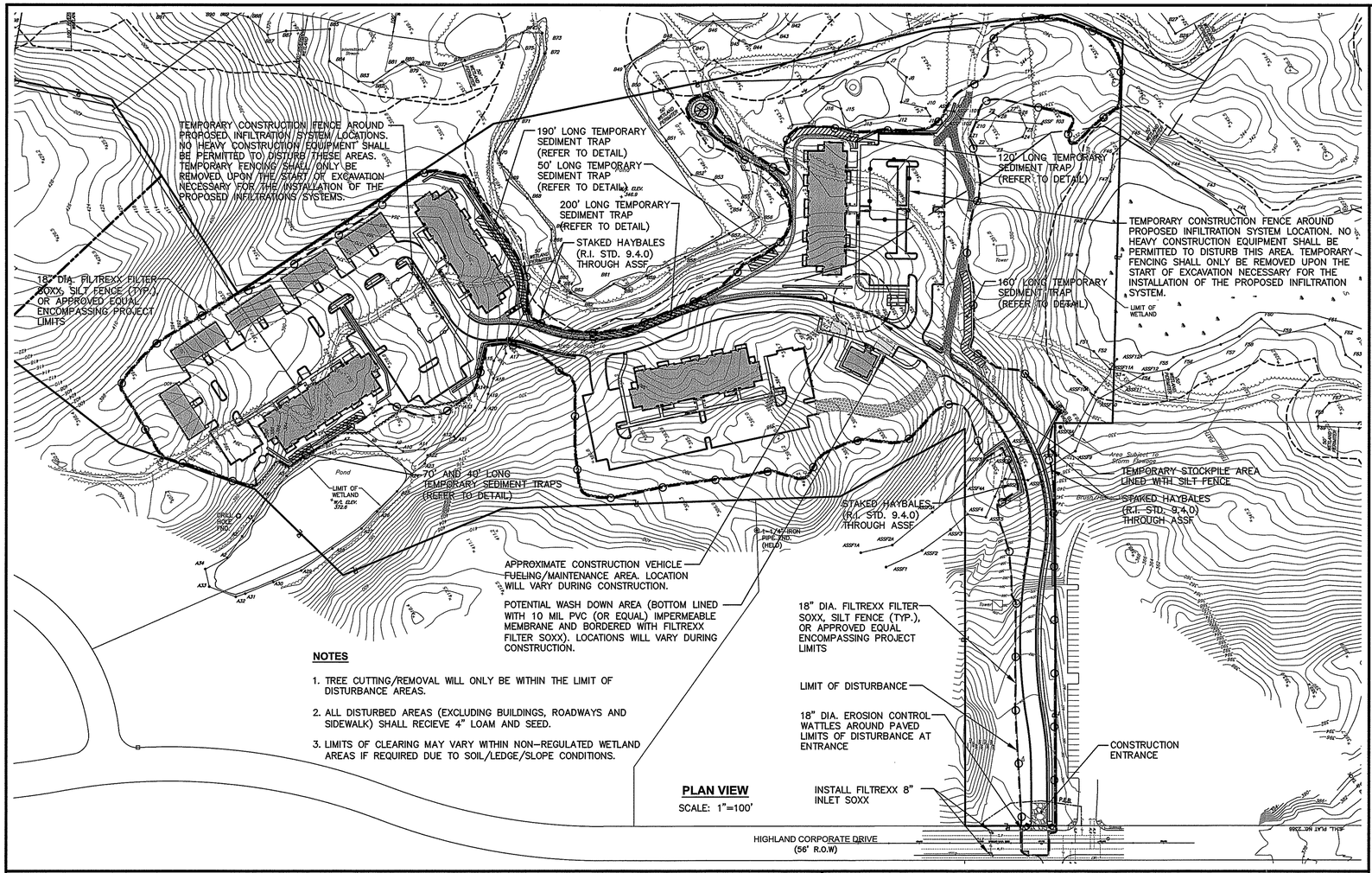
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6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 1 9 2015

DRAWING NUMBER

C9.4

SHEET: 30 *OF:* 49 74



NOTES

1. TREE CUTTING/REMOVAL WILL ONLY BE WITHIN THE LIMIT OF DISTURBANCE AREAS.
2. ALL DISTURBED AREAS (EXCLUDING BUILDINGS, ROADWAYS AND SIDEWALK) SHALL RECIEVE 4" LOAM AND SEED.
3. LIMITS OF CLEARING MAY VARY WITHIN NON-REGULATED WETLAND AREAS IF REQUIRED DUE TO SOIL/LEDGE/SLOPE CONDITIONS.

PLAN VIEW
SCALE: 1"=100'

DUST CONTROL NOTES

ON AN AS-NEEDED BASIS OR AS DIRECTED BY THE TOWN OR OWNER, THE CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS (AS RECOMMENDED BY THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK", ISSUED 1989, REVISED 2014) TO CONTROL DUST:

A. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.

B. CALCIUM CHLORIDE SHOULD BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.

THE METHODS SHOULD BE REPEATED AS NEEDED, AND SPECIAL ATTENTION MUST BE GIVEN TO THE ACCESS DRIVES.

INSPECTION/MAINTENANCE NOTES

1. PRIOR TO COMMENCING GRUBBING OPERATIONS AND EARTHWORK, FILTERSOXX SHALL BE PLACED INSIDE SAWCUT EDGE TO PREVENT SEDIMENT FROM ENTERING EXISTING ROADWAY DRAINAGE SYSTEM, WETLAND AREAS AND ABUTTING PROPERTIES.
2. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM.
3. ALL DISTURBED AREAS WHICH BECOME SUBJECT TO EROSIVE TENDENCIES WHETHER THEY BE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SLOPE PROTECTION – SUCH AS RIP-RAP.
4. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING PERIODS OF RAINFALL.
5. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT / REPLACE DAILY DURING CONSTRUCTION, FOLLOWING RAINFALL AND WEEKLY DURING NON CONSTRUCTION PERIODS.
6. ADDITIONAL FILTERSOXX OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
7. THE LATEST VERSION OF THE "R.I. SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK" PREPARED BY THE RI STATE CONSERVATION COMMITTEE (2014), MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND FOR THE ENTIRE PROJECT DURATION, INCLUDING TEMPORARY SHUT-DOWN PERIODS, MUST MONITOR AND REPAIR, AS NEEDED, ALL SLOPES TO ENSURE A STABLE PRODUCT.
9. AFTER CONSTRUCTION THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THE INSPECTION REPORTS THAT WERE TAKED DURING THE CONSTRUCTION ACTIVITIES. THE OWNER IS TO RETAIN THE INSPECTION REPORTS FOR 5 YEARS FROM THE DATE ON THE REPORT OR APPLICATION.

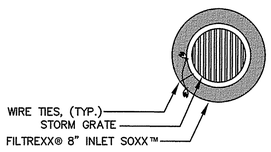
GENERAL PROJECT WIDE NOTES

1. FILTERSOXX SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, MAINTAINED ON A REGULAR BASIS, AND SHALL BE PLACED TO PREVENT SEDIMENTATION ONTO ADJACENT PROPERTY AND WETLANDS.
2. THE CONTRACTOR MUST REPLACE AND/OR RESEED ANY VEGETATION THAT DOES NOT DEVELOP/SURVIVE WITHIN THE PERIOD OF ONE YEAR AND HE SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. ALL FILTERSOXX OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND POTENTIAL SEDIMENTATION SOURCES ARE REMOVED.
4. TREES AND OTHER EXISTING VEGETATION SHALL BE RETAINED WHENEVER FEASIBLE; THE AREA BEYOND THE DROPLINE SHALL BE FENCED OR ROPED OFF TO PROTECT TREES FROM CONSTRUCTION EQUIPMENT.
5. AREAS DAMAGED DURING CONSTRUCTION SHALL BE RESODDED, RESEEDED, OR OTHERWISE RESTORED AT THE CONTRACTOR'S EXPENSE.
6. STOCKPILES SHALL HAVE NO SLOPE STEEPER THAN 2:1 AND SHALL BE SURROUNDED BY STAKED FILTERSOXX.
7. STOCKPILES EXPOSED FOR EXCESSIVE PERIODS SHALL RECEIVE TEMPORARY TREATMENT CONSISTING OF HAY, STRAW, FIBER MATTING OR APPROVED EQUAL.
8. SILT FENCE OR STAKED HAYBALES MAY BE USED IN LIEU OF THE FILTREXX FILTER SOXX.

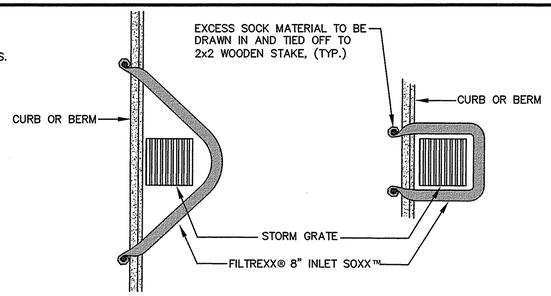
FILTREXX SOXX NOTE

CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE FILTREXX PRODUCTS AND COORDINATE INSTALLATION SCHEDULES AND METHODS WITH THE ENGINEER PRIOR TO PLACEMENT. SILT FENCE MAY BE UTILIZED IN LIEU OF FILTREXX SOXX.

NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. SILT SOXX FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

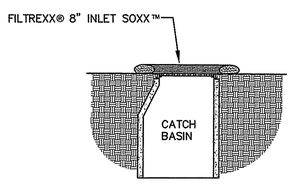


DRAIN INLET PLAN

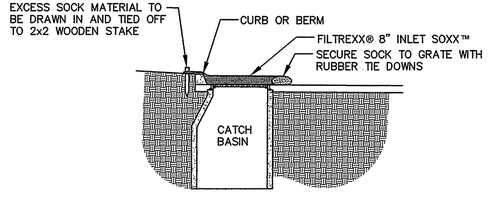


CURBSIDE OPTION "A" PLAN

CURBSIDE OPTION "B" PLAN

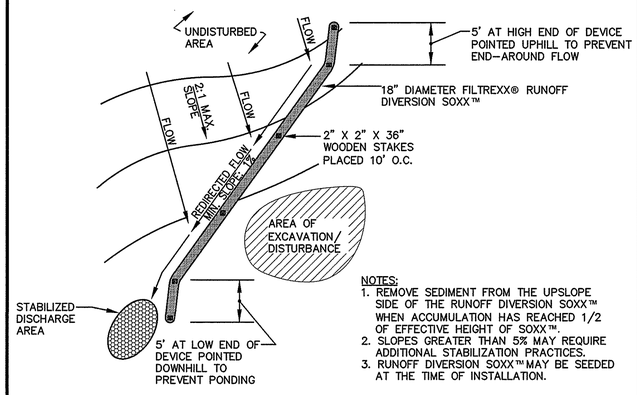


DRAIN INLET SECTION



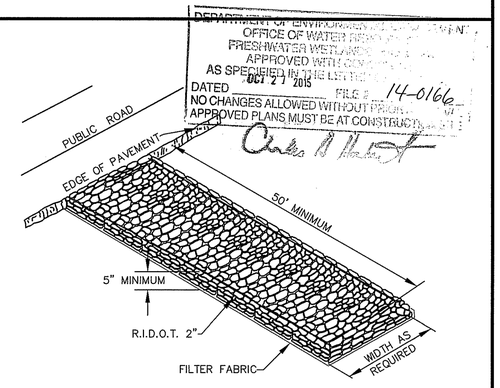
CURBSIDE SECTION

FILTREXX® INLET SOXX™ DETAILS
NOT TO SCALE



NOTES:
1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE RUNOFF DIVERSION SOXX™ WHEN ACCUMULATION HAS REACHED 1/2 OF EFFECTIVE HEIGHT OF SOXX™.
2. SLOPES GREATER THAN 5% MAY REQUIRE ADDITIONAL STABILIZATION PRACTICES.
3. RUNOFF DIVERSION SOXX™ MAY BE SEEDED AT THE TIME OF INSTALLATION.

FILTREXX® RUNOFF DIVERSION SOXX™ PLAN
NOT TO SCALE



CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/1/15

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SOIL EROSION and SEDIMENT CONTROL PLAN

DATE:	*SCALE:*
AUGUST 2014	AS NOTED

DWG. NAME: 2035-C10-SOIL-R6.dwg

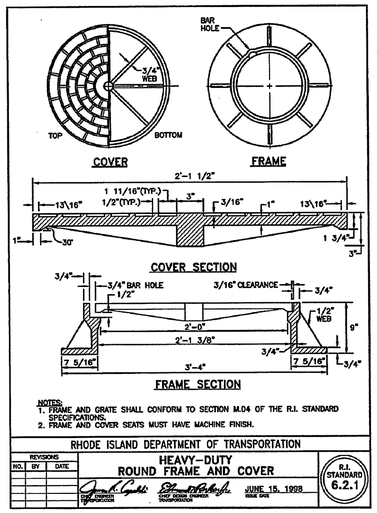
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C10

SHEET: 31 OF: 44



NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.

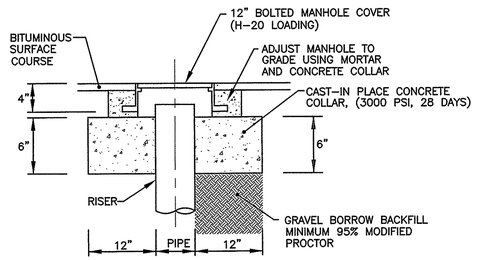
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

HEAVY-DUTY ROUND FRAME AND COVER

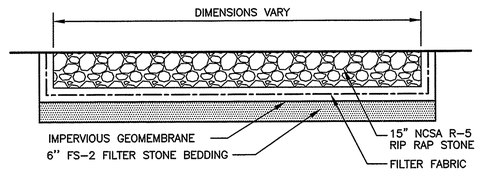
JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 6.2.1



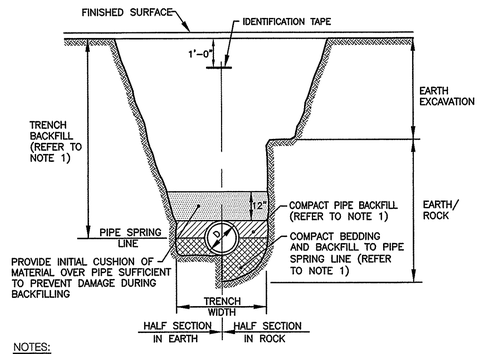
STORM DRAIN CLEAN-OUT DETAIL

NOT TO SCALE



TYPICAL SECTION RIP-RAP OUTLET PROTECTION

NOT TO SCALE

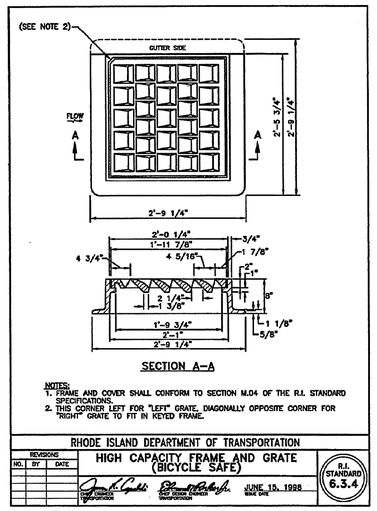


NOTES:

1. PIPE BEDDING AND BACKFILL TO SPRING LINE SHALL CONSIST OF CRUSHED STONE-3/4" MINUS. PIPE BACKFILL SHALL CONSIST OF CRUSHED STONE (WRAPPED IN FILTER FABRIC) OR GRAVEL (3" MINUS, WITH SIEVE ANALYSIS APPROVED BY ENGINEER), OR OTHER APPROVED MATERIAL. TRENCH BACKFILL SHALL CONSIST OF SUITABLE EXCAVATED MATERIAL OR OTHER APPROVED MATERIAL. ALL BEDDING/BACKFILL TO BE COMPACTED TO 95% DRY DENSITY, MODIFIED PROCTOR METHOD.
2. ALL TRENCH EXCAVATION AND ANY SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND OSHA REGULATIONS.
3. MINIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 12". MAXIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 24".

TRENCH DETAIL

NOT TO SCALE



NOTES:
1. FRAME AND COVER SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS CORNER LEFT FOR "LEFT" GRATE, DIAGONALLY OPPOSITE CORNER FOR "RIGHT" GRATE TO FIT IN KEYED FRAME.

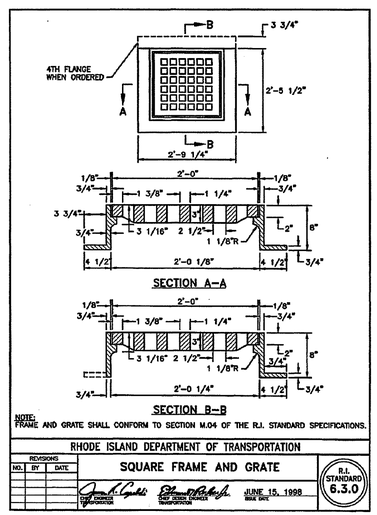
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)

JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 6.3.4



NOTE:
FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.

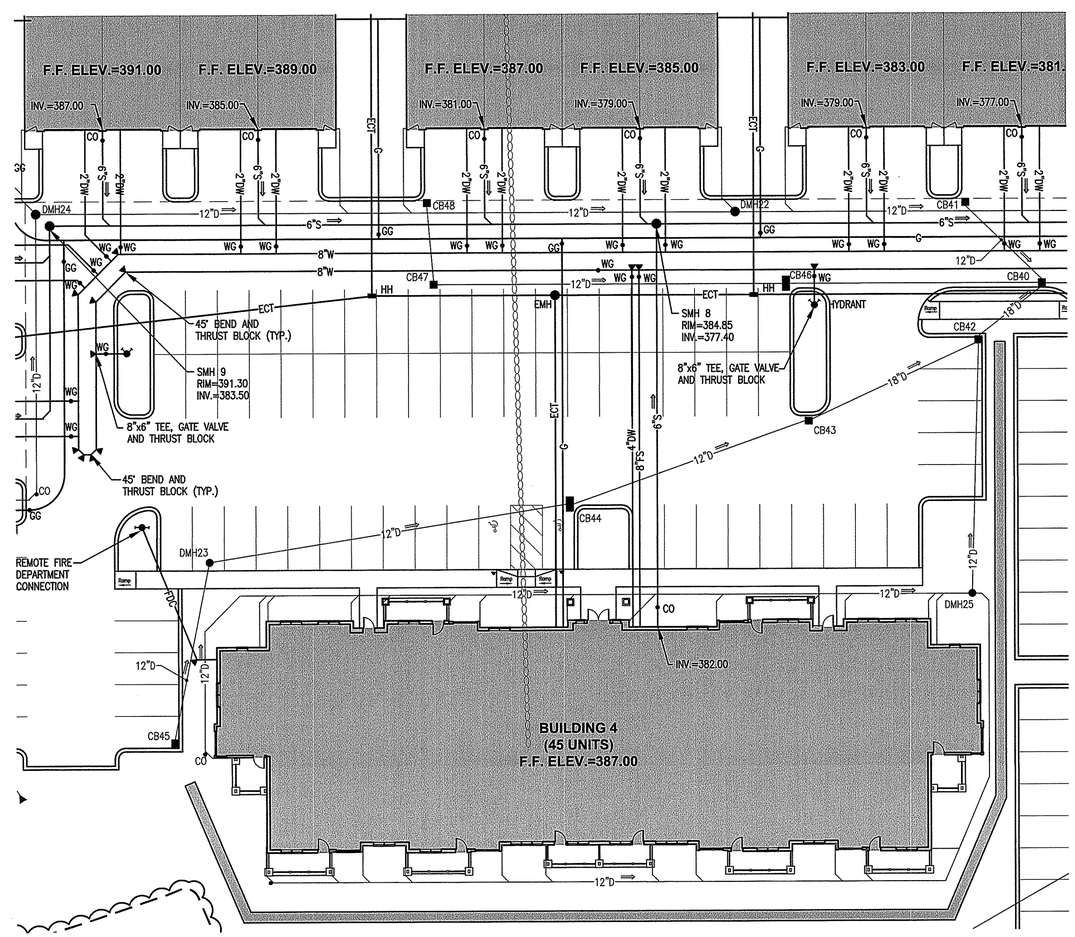
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

SQUARE FRAME AND GRATE

JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 6.3.0



TYPICAL UTILITY CONNECTION TO BUILDING UNITS

SCALE: 1" = 20'

NOTES:

1. FINAL LOCATIONS FOR UNDERGROUND ELECTRIC, TELEPHONE AND CABLE CONDUITS SHALL BE VERIFIED BY UTILITY COMPANIES.
2. ELECTRIC CONDUITS WITHIN PAVEMENT AREAS SHALL BE ENCASED IN CONCRETE, FULL LENGTH.
3. TELEPHONE AND CABLE CONDUITS TO BE ENCASED IN CONCRETE UNDER PAVEMENT.
4. PRIOR TO CONSTRUCTION, THE ARCHITECT SHALL VERIFY THE SIZE AND LOCATION OF ALL UTILITY SERVICES FOR EACH UNIT.

LEGEND

•GG	GAS GATE VALVE
•CO	CLEAN OUT
•WG	WATER GATE VALVE
——W——	WATER MAIN/WATER SERVICE
——S——	SEWER MAIN/SEWER SERVICE
——G——	GAS MAIN/GAS SERVICE
——D——	DRAINAGE LINE
——E/C/T——	UNDERGROUND ELECTRIC/CABLE/TELEPHONE CONDUITS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER
DATED OCT 27 2015 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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Phone: (401) 738-5660

Massachusetts
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/9/15

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C11-DETAIL1-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

C11

SHEET: 32 *OF:* 44

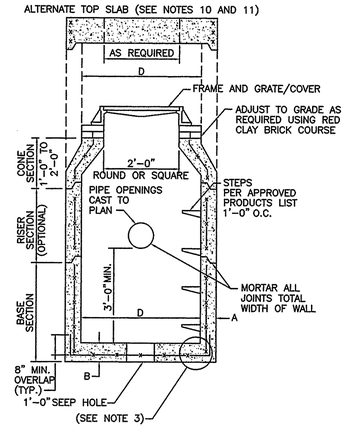
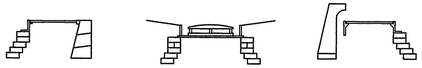


TABLE 1			
CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED *
4'-0"	5"	6"	0.12 SQ. IN./LIN. FT.
5'-0"	6"	7"	0.15 SQ. IN./LIN. FT.
6'-0"	7"	8"	0.18 SQ. IN./LIN. FT.

* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2

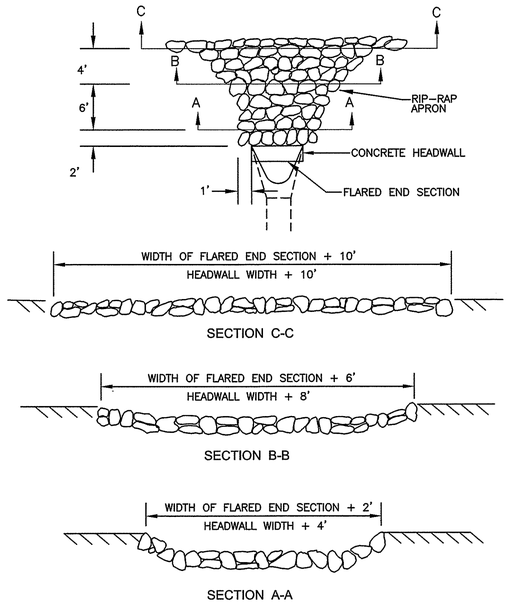


TYPE CATCH BASIN AS REQUIRED

NOTES

1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. SEE TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./FT. BOTH WAYS).
4. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
5. ONE POUR MONOLITHIC BASE SECTION.
6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW–CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
7. FOR CATCH BASIN TYPES "D" AND "F" STEPS MUST BE INSTALLED ON THE CURB SIDE OF THE STRUCTURE.
8. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'–0" FROM THE STEPS.
9. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H–25 LOADING (SEE STD. 4.7.2).
10. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
11. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

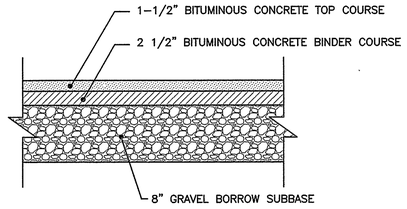
R.I. STANDARD 4.4.0
PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN
NOT TO SCALE



NOTES

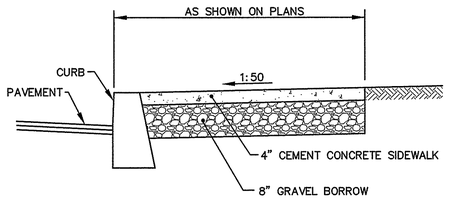
1. UNLESS OTHERWISE SPECIFIED, DUMPED RIP–RAP SHALL BE USED.
2. DIMENSIONS MAY BE MODIFIED BY ENGINEER TO MEET FIELD CONDITIONS.
3. SEE "TYPICAL SECTION RIP RAP OUTLET PROTECTION" DETAIL FOR CONSTRUCTION MATERIAL SPECIFICATIONS.

TYPICAL LAYOUT OF RIP-RAP OUTLET PROTECTION AT FLARED END SECTIONS and CONCRETE HEADWALLS
NOT TO SCALE

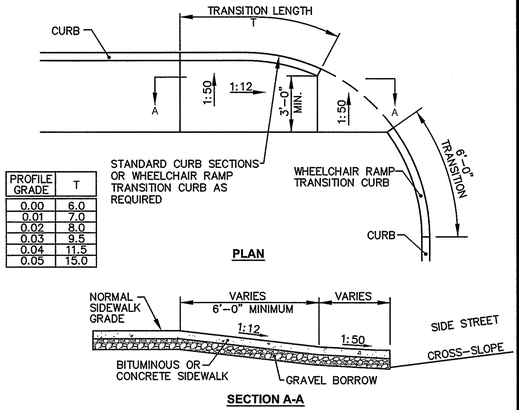


NOTE:
THE ABOVE PAVEMENT THICKNESS REPRESENTS THE MINIMUM THICKNESS FOR PASSENGER VEHICLE AREAS. PAVEMENT DEPTH TO BE BASED UPON SITE SPECIFIC SOIL CONDITIONS.

TYPICAL PAVEMENT STRUCTURE DETAIL
NOT TO SCALE

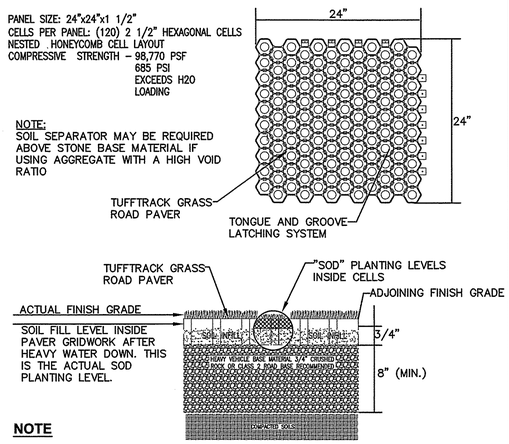


R.I. STD. 43.1.0
CEMENT CONCRETE SIDEWALK DETAIL
NOT TO SCALE



PROFILE GRADE	T
0.00	6.0
0.01	7.0
0.02	8.0
0.03	9.5
0.04	11.5
0.05	15.0

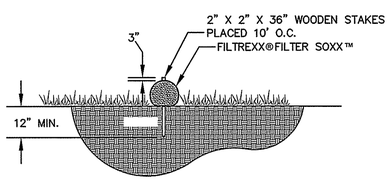
WHEELCHAIR RAMP AT ROADWAY DETAIL
NOT TO SCALE



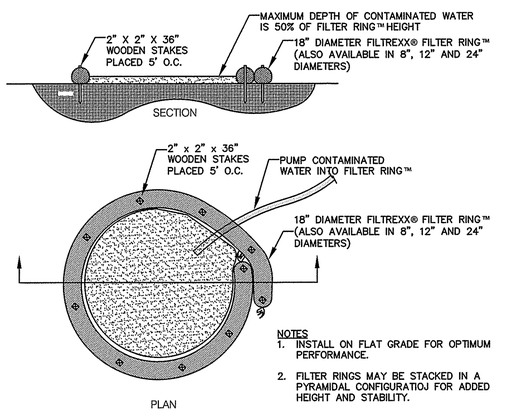
NOTE

EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.

TYPICAL TUFFTRACK PAVER DETAIL
(HEAVY VEHICLE OR FIRE ACCESS ROAD
NOT TO SCALE

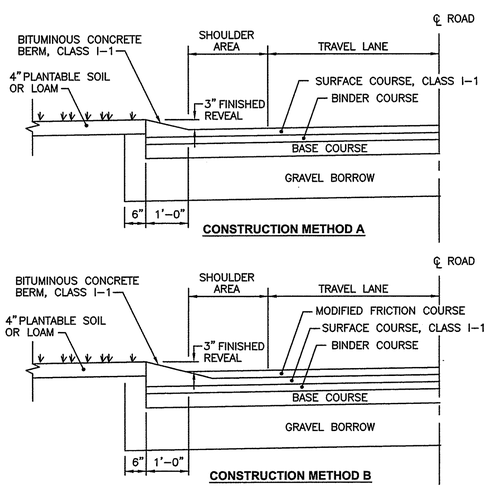


FILTREXX® FILTER SOXX™ SECTION
NOT TO SCALE

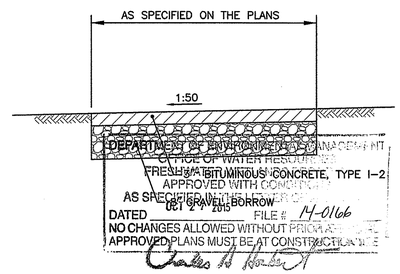


NOTES
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. FILTER RINGS MAY BE STACKED IN A PYRAMIDAL CONFIGURATIOJ FOR ADDED HEIGHT AND STABILITY.
3. FILTER RINGS MAY BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
4. THIS TYPICAL INSTALLATION SHALL BE USED FOR DEWATERING OPERATIONS.

FILTREXX® FILTER RING™
NOT TO SCALE



R.I. STANDARD 7.5.1 BITUMINOUS BERM
NOT TO SCALE



R.I. STD. 43.2.0
BITUMINOUS CONCRETE SIDEWALK DETAIL
NOT TO SCALE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/11/15

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS
PLAN No. 2

DATE:	SCALE:
AUGUST 2014	AS SHOWN

DWG. NAME: 2035–C12–DETAIL2–R6.dwg

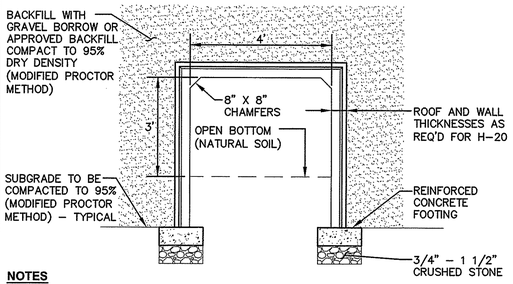
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C12

SHEET: 33 *OF:* 44



NOTES

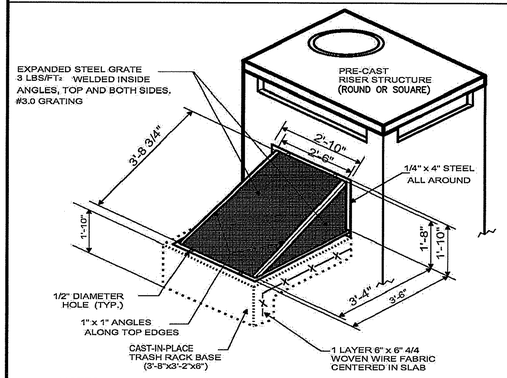
1. CULVERT SHALL BE CAPABLE TO WITHSTAND H-20 LOADING.
2. INSTALL CULVERT FOOTING ON 12" DEEP CRUSHED STONE BED (3/4"-1 1/2" CRUSHED STONE)
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS STAMPED BY A R.I. STRUCTURAL P.E. TO DESIGN CULVERT FOR PROPOSED LOADS DUE TO DEPTH OF COVER.
4. CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ENGINEER TO SURVEY STAKE THE LOCATION AND ELEVATIONS PRIOR TO CONSTRUCTION.
5. CONCRETE: 5,000 P.S.I MINIMUM STRENGTH @ 28 DAYS, STRENGTH TO BE VERIFIED BY A R.I. STRUCTURAL P.E.
6. STEEL REINFORCING – ASTM A-615, GRADE 60.
7. COVER TO STEEL – 1" MINIMUM.
8. CULVERT SHALL BE DESIGNED TO MEET ASTM C858 AND ACI 318 WITH AASHTO HS-20 LOADING.
9. CONSTRUCTION JOINT-SEALED WITH 1" DIA. BUTYL RUBBER OR EQUIVALENT, HYDRAULIC CEMENT SHALL BE USED AT CULVERT SECTION CONNECTIONS.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS STAMPED BY A R.I. STRUCTURAL P.E. TO DESIGN CULVERT HEADWALL/WINGWALL.

CULVERT 1 and 2 TYPICAL DETAIL (4' WIDE x 3' HIGH)

NOT TO SCALE

CULVERT INSTALLATION SEQUENCE OF CONSTRUCTION

1. CONSTRUCTION TO BE CONDUCTED DURING LOW FLOW PERIODS, TYPICALLY JULY THRU SEPTEMBER.
2. SOIL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED WITHIN THE WORK AREA AS SHOWN ON THE PLAN.
3. STOCKPILE ALL MATERIAL REQUIRED FOR INSTALLATION ADJACENT TO PROPOSED CULVERT LOCATION PRIOR TO START OF CONSTRUCTION. MATERIAL STOCKPILED SHALL INCLUDE BOX CULVERT, CRUSHED STONE (3/4"-1 1/2"), GRAVEL BORROW AND HYDRAULIC CEMENT. STOCKPILE LOCATION SHALL BE WITHIN THE LIMIT OF DISTURBANCE AREAS BUT NOT WITHIN ASSF LIMITS.
4. THE PROPOSED CULVERT LOCATIONS AND GRADES SHALL BE STAKED IN FIELD.
5. WEATHER PERMITTING, (DRY WEATHER FORECAST) THE CONTRACTOR SHALL COMMENCE TREE REMOVAL WITHIN THE PROPOSED CULVERT AREA. THE DURATION FOR EXCAVATING, CULVERT INSTALLATION AND BACKFILL SHALL CONTINUE UNTIL COMPLETION AND SHALL TAKE NO LONGER THAN 3 DAYS.
6. EXCAVATION SHALL INCLUDE REMOVAL OF ORGANIC MATERIAL UNDER THE NEW CULVERT FOOTINGS. CONTRACTOR IS REQUIRED TO CONTACT THE ENGINEER FOR INSPECTION DURING THIS OPERATION.
7. REPLACE REMOVED ORGANIC MATERIAL WITH GRAVEL BORROW COMPACTED TO 95% DRY DENSITY (MODIFIED PROCTOR METHOD) AND CRUSHED STONE (12" DEPTH BELOW CULVERT FOOTINGS).
8. INSTALL CULVERT ON FOOTINGS AND MORTAR JOINTS WITH HYDRAULIC CEMENT.
9. CONTRACTOR SHALL USE SANDBAGS AS REQUIRED TO DIRECT STORMWATER INTO NEW CULVERT DURING HEADWALL CONSTRUCTION. NOTE: ALL WORK AND SANDBAGS SHALL BE INSTALLED WITHIN THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS.
10. CONSTRUCT HEADWALLS AND BACKFILL AS REQUIRED.



NOTES:
1. BRACING TO BE ADJUSTED TO CREATE FLUSH SEAL AGAINST CIRCULAR RISER STRUCTURES.
2. DIMENSIONS SHALL BE ADJUSTED TO FIT ORIFICE CONFIGURATIONS.

TYPICAL TRASH RACK DETAIL

NOT TO SCALE

SOIL EVALUATION DATA

SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING INC. ON 9/24/08. (TP 1-10) and 12/1/08 (TP 11-15)

TP1 (EL=335.0)

3"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
12"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
32"	LIGHT YELLOWISH BROWN VERY FINE SANDY LOAM/SILT LOAM	C1 (FRIABLE)
45"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C2 (FRIABLE)
134"		

NO REFUSAL
115" WATER SEEPAGE
86" DESIGN GWT
32"-45" REDOX FEATURES (HANGING IN HORIZON)
RIDEM SOIL CATEGORY = 7m

TP2 (EL=338.0)

3"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
8"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
18"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
28"	LIGHT YELLOWISH BROWN GRAVELLY LOAMY SAND	C1 (FRIABLE)
134"		

NO REFUSAL
NO WATER SEEPAGE
86" DESIGN GWT
32" ISOLATED REDOX FEATURES (AROUND STONES)
RIDEM SOIL CATEGORY = 7m

TP3 (EL=359.0)

3"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
13"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
30"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
122"		

122" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP4 (EL=357.0)

3"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
15"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
30"	LIGHT OLIVE BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
96"		

96" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
96" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP5 (EL=365.5)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
5"	DARK YELLOWISH BROWN VERY FINE SANDY LOAM	Bw1 (VERY FRIABLE)
17"	YELLOWISH BROWN SANDY LOAM/COARSE SANDY LOAM	Bw2 (VERY FRIABLE)
24"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
56"	LIGHT YELLOWISH BROWN VERY STONY GRAVELLY LOAMY SAND	C2 (FRIABLE)
82"		

82" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
82" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP6 (EL=384.5)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
14"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
26"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
86"		

86" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
86" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP7 (EL=396.0)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
2"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
12"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
28"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
110"		

110" LARGE BOULDERS
NO WATER SEEPAGE
110" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP8 (EL=329.0)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
17"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
40"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
120"		

NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP9 (EL=409.5)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
16"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
42"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
120"		

NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP10 (EL=408.5)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
3"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
18"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
38"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
90"		

90" LARGE BOULDERS
NO WATER SEEPAGE
90" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP11 (EL=359.0)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
2"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
24"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
38"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
120"		

120" NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

TP12 (EL=366.0)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
3"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
18"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
36"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
120"		

120" NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

TP13 (EL=367.0)

3"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
20"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
48"	LIGHT YELLOWISH BROWN VERY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
120"		

120" NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

TP14 (EL=388.0)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
15"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
30"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
110"		

110" LEDGE
NO WATER SEEPAGE
110" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 10MPI (FIELD MEARURED)

TP15 (EL=425.0)

2"	ORGANIC LITTER	OI
0"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
3"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
14"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
32"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
120"		

NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 27 2015 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
10/27/15

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS
PLAN No. 3

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C13-DETAIL3-R6.dwg

REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

RECEIVED OCT 16 2015

DRAWING NUMBER

C13

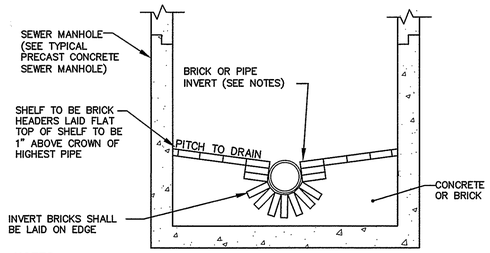
SHEET: 34 *OF:* 48 44

GENERAL SEWER NOTES

1. INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF CUMBERLAND SPECIFICATIONS AND REQUIREMENTS.
2. PRIOR TO RECEIVING AUTHORIZATION TO CONSTRUCT, ALL MATERIALS SHALL MEET THE STANDARDS AND RECEIVE THE WRITTEN APPROVAL, BASED ON MANUFACTURER'S DRAWINGS AND OTHER DATA, OF THE TOWN OF CUMBERLAND.
3. ALL SEWERAGE FACILITIES SHALL MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE.
4. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE AS-BUILT LOCATIONS PRIOR TO PIPE BACKFILL. AS-BUILT DRAWINGS SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES. PLANS SHALL INCLUDE LOCATION OF WYES.
5. NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
6. AFTER THE CONTRACTOR HAS "STAKED OUT" THE FACILITIES TO BE CONSTRUCTED AND HAS THE APPROVED MATERIALS ON THE JOB, THE TOWN OF CUMBERLAND SHALL BE NOTIFIED IN ADVANCE OF CONSTRUCTION IN ORDER FOR THEM TO ARRANGE FOR THEIR INSPECTOR. THE NOTIFICATION MUST MEET THE TOWN OF CUMBERLAND SEWER COMMISSION REQUIREMENTS.
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND MATERIALS, STANDARDS AND SPECIAL DETAILS, AND STANDARD SPECIFICATIONS, ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE IMMEDIATELY REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES FOR CONSTRUCTION WITHIN THE LIMITS OF WORK AS SHOWN ON THE DRAWINGS.
9. ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE LOAMED AND SEEDED.
10. LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY AUTHORITIES INCLUDING "DIG-SAFE" PRIOR TO STARTING WORK. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COST OF REPAIRS SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. RELATION TO WATER LINES:
    - A. HORIZONTAL SEPARATION: WHENEVER POSSIBLE, SEWERS SHOULD BE LAID AT A MINIMUM OF 10 FEET (3.0 m), HORIZONTALLY, FROM ANY EXISTING OR PROPOSED WATER LINE. SHOULD LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET, A SEWER MAY BE LAID CLOSER THAN 10 FEET TO A WATER LINE IF:
        1. IT IS LAID IN A SEPARATE TRENCH, OR IF
        2. IT IS LAID IN THE SAME TRENCH WITH THE WATER LINE LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND IF
        3. IN EITHER CASE THE ELEVATION OF THE TOP (CROWN) OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM (INVERT) OF THE WATER LINE.
    - B. VERTICAL SEPARATION: WHENEVER A SEWER MUST CROSS UNDER WATER LINES, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM OF THE WATER LINE. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER LINE SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR RECONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10 FEET (3.0 m) ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER LINE SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.
    - C. WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL AND/OR VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER LINE AND SEWER SHALL BE CONSTRUCTED OF MECHANICAL-JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT BASED ON WATER TIGHTNESS AND STRUCTURAL SOUNDNESS. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING REQUIRED IN THE SEWER INSTALLATION.
13. THE PROPOSED GRAVITY SANITARY SEWER PIPE SHALL BE PVC ASTM 3034 SDR 35, UNLESS OTHERWISE SHOWN ON PLANS. PIPE SIZE TO MATCH UTILITY PLAN.
14. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE ELEVATION OF EXISTING SEWER LINE PRIOR TO INSTALLATION.

SEWER TRENCH NOTES

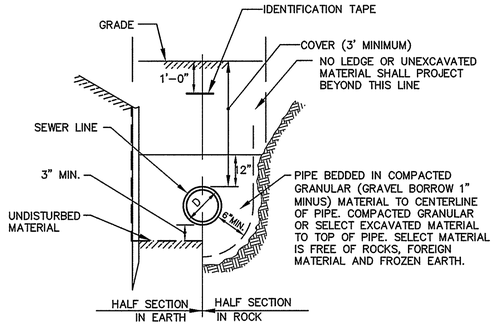
1. MINIMUM WIDTH (W) OF TRENCH IS EQUAL TO THE INSIDE DIAMETER OF THE PIPE PLUS 12" EACH SIDE.
2. SOIL UNDER CRUSHED STONE FOUNDATION SHALL BE UNDISTURBED AND COMPACTED MATERIAL WITH SEVERAL PASSES OF A VIBRATORY PLATE COMPACTOR TO ATTAIN 95% MAX. DENSITY (MOD. METHOD).
3. CRUSHED STONE FOUNDATION 3/4" MAXIMUM SIZE, SHALL BE PLACED 6" UNDER THE PIPE AND UP TO THE PIPE LAID THEREON, CRUSHED STONE PULLED AGAINST THE PIPE SIDES TO FIRMLY HOLD THE PIPE IN PLACE.
4. CRUSHED STONE HAUNCHING 3/4" MAXIMUM SIZE SHALL BE BROUGHT LEVEL TO THE TOP OF THE PIPE AND OUT TO THE TRENCH WALL AT THIS ELEVATION FOR ALL PIPE.



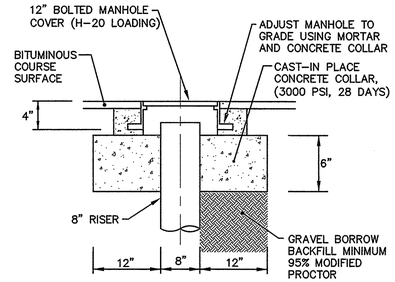
NOTES:

1. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF CEMENT CONCRETE OR BRICK IN MORTAR.
2. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST
3. NO SKIM COAT SHALL BE PLACED ON BRICK INVERTS
4. SEWER PIPE MAY BE RUN THROUGH MANHOLE AND USED AS INVERT. TOP HALF OF PIPE TO BE CUT AWAY AT THE TOWNS DISCRETION.
5. INVERTS TO BE CONSTRUCTED WITH S&H RED SEWER BRICK
6. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE REQUIREMENTS OF THE TOWN OF CUMBERLAND.

TYPICAL BRICK INVERT SECTION FOR SANITARY MANHOLES
NOT TO SCALE

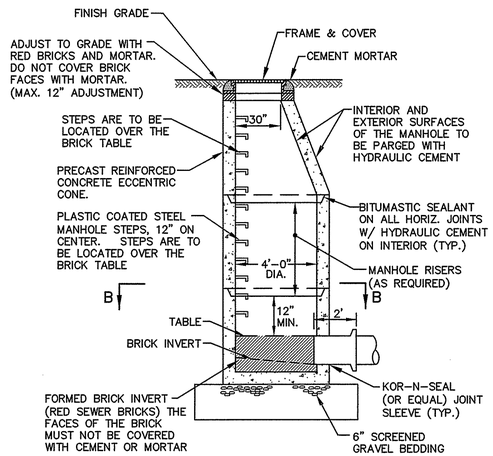


TYPICAL SEWER LINE TRENCH DETAIL
NOT TO SCALE



NOTE:
CONCRETE COLLAR IS NOT REQUIRED IN LANDSCAPE AREAS.

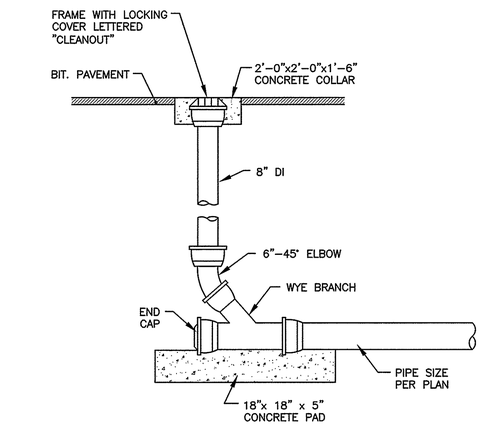
ROOF DRAIN CLEAN-OUT DETAIL IN PAVEMENT
NOT TO SCALE



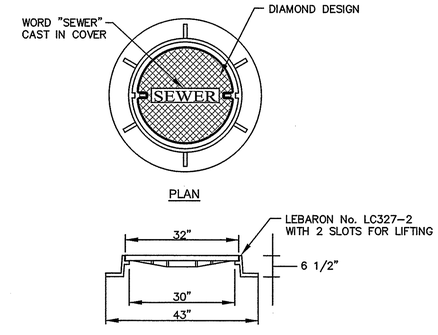
NOTES:

1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.12 SQ. IN. / LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN/LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE SECTION.
5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
6. STEPS SHALL CONFORM TO R.I.D.O.T. STD. 5.3.0 (OR AS SPECIFIED IN THE CONTRACT) AND SHALL BE INSTALLED AT THE CASTING PLANT.
7. ALTERNATE FLAT TOP SLAB CAN BE USED WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
8. ALTERNATE FLAT TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE R.I.D.O.T. STD. 4.7.2).
9. ALL JOINTS AND PINHOLES TO BE PLUGGED INSIDE AND OUTSIDE WITH HYDRAULIC CEMENT.

SANITARY MANHOLE DETAIL - TYPICAL
NOT TO SCALE



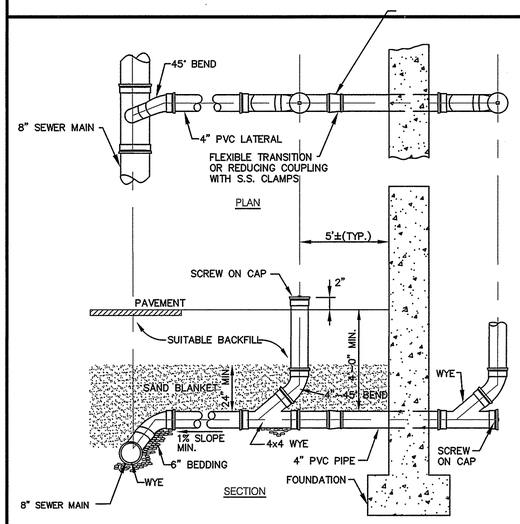
CLEANOUT DETAIL IN PAVEMENT
NOT TO SCALE



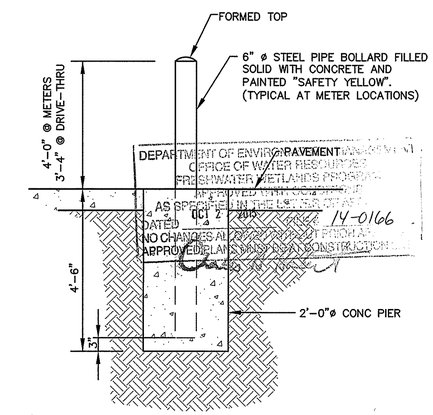
NOTES

1. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.
2. THE WORD "SEWER" SHALL BE CAST IN THE COVER.
3. VENTILATION HOLES OF ANY SIZE ARE NOT ALLOWED.

SANITARY MANHOLE FRAME AND COVER DETAIL
NOT TO SCALE



STANDARD BUILDING CONNECTION DETAIL IN LAWN
NOT TO SCALE



TYPICAL BOLLARD DETAIL
NOT TO SCALE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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STEVEN M. CABRAL — No. 4847 — REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C14-DETAIL4-R6.dwg

REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT — OFFICE OF WATER RESOURCES — FRESHWATER WETLANDS PROGRAM — APPROVED WITH CONDITIONS — AS SPECIFIED IN THIS LETTER DATED OCT 2 2015 — 14-0166 — NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL — APPROVED PLANS SHALL BE USED FOR CONSTRUCTION

Environmental Management — SEP 16 2015 — Office of Water Resources

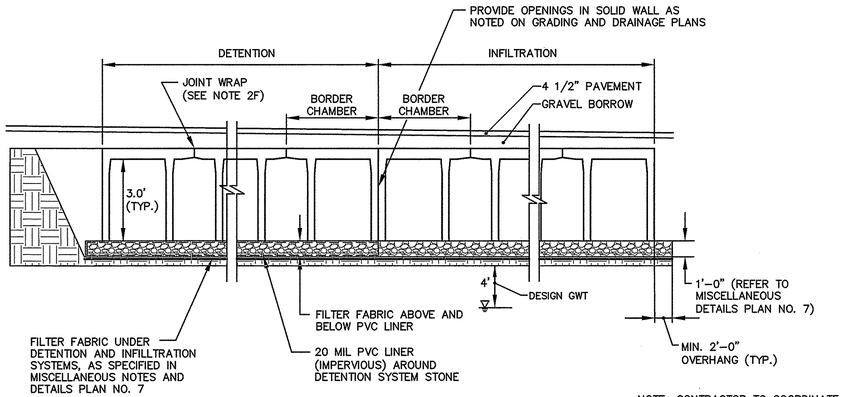
DRAWING NUMBER

C14

SHEET: 35 *OF:* 49

INFILTRATION SYSTEM CONSTRUCTION NOTE

1. WITHIN THE INFILTRATION SYSTEM, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SUBSOIL AREAS (A AND B HORIZONS) AND ANY EXISTING SOILS THAT YIELD A PERMEABILITY RATE <2.41 INCHES/HOUR. CONTRACTOR SHALL COORDINATE A BOTTOM BED INSPECTION WITH OWNER AND ENGINEER. IF NECESSARY THE AREA SHALL BE PREPARED WITH SAND FILL SOIL MEETING THE MEDIA REQUIREMENTS OF SAND FILTERS, AS DESCRIBED IN THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, DECEMBER 2010, SECTION 5.5 (ASTM C-33 SAND). THE DEPTH OF EXISTING SOIL REMOVAL SHALL BE VERIFIED BY THE ENGINEER. PLACEMENT OF THE SAND FILL (ASTM C-33 SAND), SHALL BE USED TO BRING THE BOTTOM OF BASIN TO THE DESIGN ELEVATIONS.
2. INFILTRATION SYSTEM CONSTRUCTION AND MATERIALS SHALL CONFORM TO RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL. DECEMBER 2010, APPENDIX F.3 CONSTRUCTION STANDARDS/SPECIFICATIONS FOR INFILTRATION BMP'S. AFTER CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE FINAL INSPECTIONS WITH THE OWNER IN ACCORDANCE WITH TABLE F-5 IN APPENDIX F.3.
3. THE CONTRACTOR IS REQUIRED TO SUBMIT A LIST OF MATERIALS, GRADATIONS AND THE NAME AND ADDRESS OF THE SUPPLIERS TO THE ENGINEER FOR APPROVAL PRIOR TO BRINGING MATERIAL ON SITE. MATERIAL CERTIFICATIONS SHALL ALSO BE REQUIRED FOR REVIEW AND APPROVAL.
4. THE CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE ABOVE REFERENCED MANUAL. THE MANUAL CAN BE FOUND AT: http://www.dem.ri.gov/pubs/regs/water/swmanual.pdf.
5. GREAT CARE MUST BE TAKEN TO PREVENT THE INFILTRATION AREA FROM COMPACTION; BY MARKING OFF THE INFILTRATION BASIN AND UNDERGROUND INFILTRATION LOCATION BEFORE THE START OF CONSTRUCTION, AND BY CONNECTING UPSTREAM DRAINAGE AREAS ONLY AFTER CONSTRUCTION IS COMPLETE AND THE CONTRIBUTING AREA IS STABILIZED.
6. IF LARGE ROCKS OR BOULDERS ARE FOUND WITHIN 36" BELOW THE INFILTRATION SYSTEMS, OR WITHIN A 10' PERIMETER AROUND SYSTEM, THE CONTRACTOR SHALL REMOVE THE ROCKS/BOULDERS AND REPLACE WILL GRAVEL BORROW. CONTRACTOR SHALL COORDINATE WITH ENGINEER.

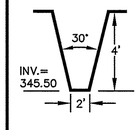


NOTE: CONTRACTOR TO COORDINATE INSTALLATION WITH MANUFACTURER AND ENGINEER.

REFER TO MISCELLAENOUS DETAILS PLAN NO. 7 FOR SPECIFIC STORMTRAP INSTALLATION NOTES AND DETAILS

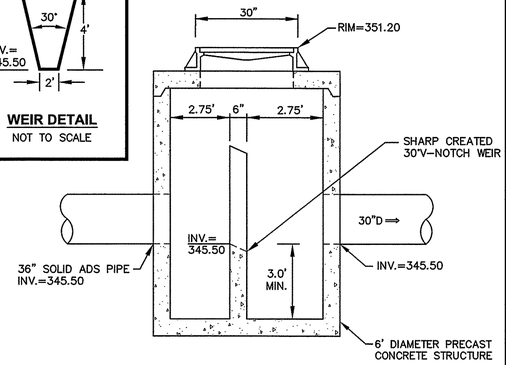
TYPICAL DETAIL REFERENCING UNDERGROUND INFILTRATION AND DETENTION SYSTEM STORMTRAP 3-0 INSTALLATION DETAIL

NOT TO SCALE



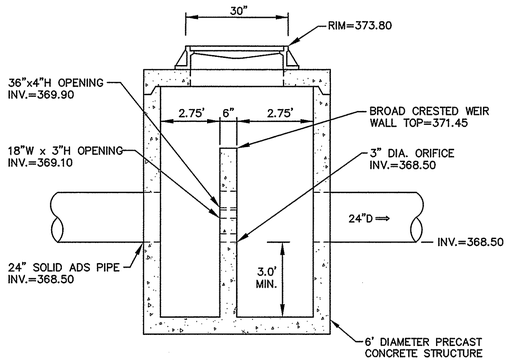
WEIR DETAIL

NOT TO SCALE



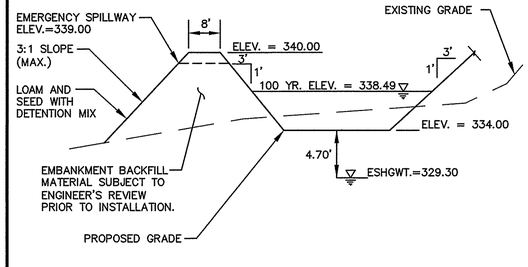
UNDERGROUND DETENTION SYSTEM No. 1 OUTLET CONTROL STRUCTURE DETAIL (DMH 9)

NOT TO SCALE



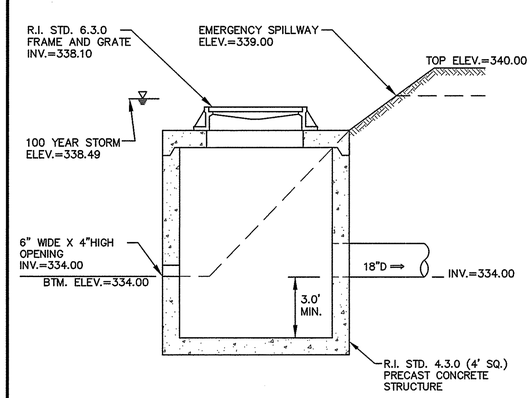
UNDERGROUND DETENTION SYSTEM No. 2 OUTLET CONTROL STRUCTURE DETAIL (DMH 18)

NOT TO SCALE



DETENION BASIN DETAIL

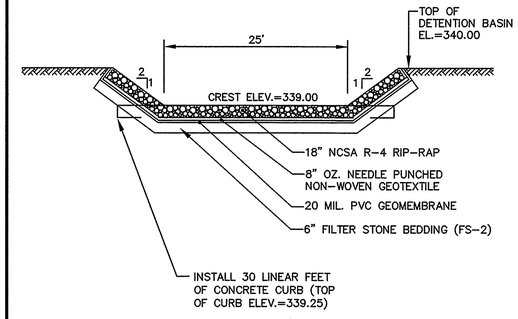
NOT TO SCALE



* USE TRASH RACK ENCLOSURE (SEE MISCELLANEOUS DETAILS PLAN NO. 8)

DETENTION BASIN OUTLET CONTROL STRUCTURE DETAIL

NOT TO SCALE



EMERGENCY OVERFLOW WEIR DETAIL

NOT TO SCALE

EMBANKMENT NOTES

1. THE DETENTION BASIN EMBANKMENT IS TO BE CONSTRUCTED WITH APPROVED COMMON BORROW. NO SOIL/ROCK GRATER THAN 2" SHALL BE UTILIZED. COMMON BORROW SHALL MEET OR EXCEED AN IN-PLACE DENSITY OF 100 lb./cf. ALL MATERIAL SHALL BE PLACED IN 8 TO 12 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY. FILL MATERIAL WILL NOT CONTAIN FROZEN MATERIALS OR BE PLACED ON FROZEN SURFACES. COMMON BORROW SHALL MEET SPECIFICATION SECTION 202.20 IN THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 OR LATEST EDITION.
2. UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, THE EMBANKMENT AREAS ARE TO BE EXCAVATED. IF ANY ORGANIC OR UNSUITABLE MATERIAL IS ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR REVIEW OF EXCAVATION AREA. THE DEPTH OF EXCAVATION WILL BE DETERMINED BY THE ENGINEER BASED UPON THE LOCAL CONDITIONS. NO FILL MATERIAL SHALL BE PLACED UNTIL THE FOUNDATION PREPARATION HAS BEEN COMPLETED. ALL WATER SHALL BE REMOVED FROM THE FOUNDATION PRIOR TO PLACING THE EMBANKMENT.
3. THE FILL MATERIAL MUST BE SPREAD IN UNIFORM LAYERS AND FALL WITHIN THE SPECIFIED OPTIMUM WATER CONTENT RANGE IN ORDER TO ACHIEVE THE REQUIRED COMPACTION. EACH LAYER IS TO BE COMPACTED PRIOR TO LAYING AN ADDITIONAL LAYER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER HIS SELECTED METHOD OF COMPACTION, COMPACTION EQUIPMENT AND THE SEQUENCE OF OPERATIONS NECESSARY TO OBTAIN THE REQUIRED DENSITY. THE WATER CONTENT AT COMPACTION SHOULD BE IN THE RANGE BETWEEN ONE PERCENTAGE POINT BELOW AND TWO PERCENTAGE POINTS ABOVE STANDARD AASHTO OPTIMUM WATER CONTENT. THE MATERIAL SHALL BE PROCESSED TO A UNIFORM WATER CONTENT BY ADDING WATER TO THE MATERIAL IN ADVANCE OF THE FILL PLACEMENT.
4. BACKFILL MATERIAL AROUND STRUCTURES AND PIPE IS TO BE PLACED TO PREVENT THE MOVEMENT OF WATER. THE OPTIMUM WATER CONTENT MUST BE MAINTAINED IN THE SAME RANGE AS IN THE EMBANKMENT. THE BACKFILL MUST BE PLACED IN LAYERS LESS THAN 4 INCHES IN THICKNESS AND DISTRIBUTED UNIFORMLY AROUND THE STRUCTURE/PIPE. ALL COMPACTION WILL BE TO 95% MAXIMUM DENSITY AND MAY REQUIRE HAND TAMPERS OR SMALL POWER EQUIPMENT.
5. EMBANKMENT DAMAGE COMMONLY RESULTS FROM IMPROPER CONSTRUCTION OF CONDUIT AND STRUCTURAL BACKFILL WITHIN THE EMBANKMENT BECAUSE SEEPAGE WILL OCCUR WITH IMPROPER BACKFILL AND COMPACTION. THEREFORE, STRUCTURES AND PIPES ARE TO BE CONSTRUCTED AS THE EMBANKMENT CONSTRUCTION RISES TO THE RESPECTIVE PIPE OR STRUCTURE. THIS WILL PREVENT THE DISTURBANCE OF CONSTRUCTED EMBANKMENT MATERIAL. PIPES FROM THE OUTLET STRUCTURE TO THE OUTFALL SHALL HAVE AN ANTI-SEEP COLLAR.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF
DATED OCT 27 2015 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT
APPROVED PLANS MUST BE AT CONSTRUCTION

Charles A. Horbert

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 5

DATE: AUGUST 2014
SCALE: AS SHOWN

DWG. NAME: 2035-C15-DETAIL5-R6.dwg

REVISIONS

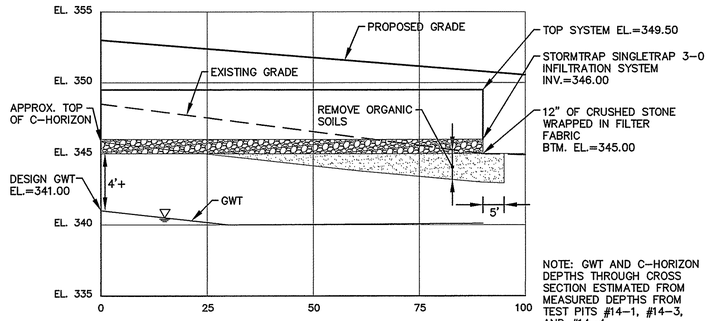
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

OCT 16 2015

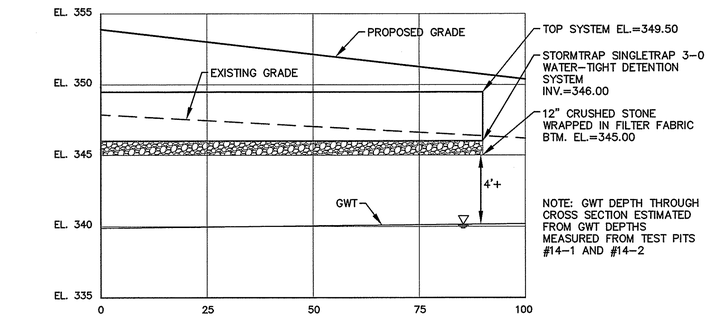
DRAWING NUMBER

C15

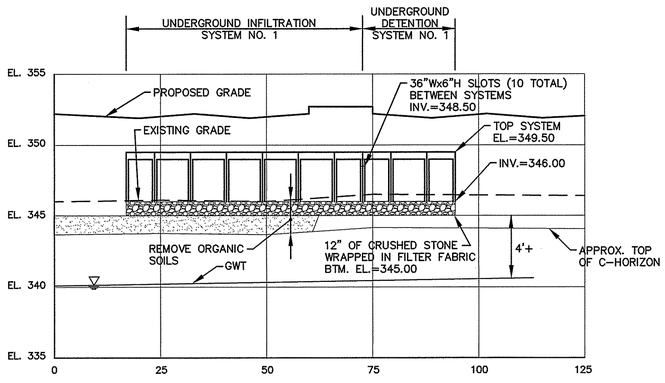
SHEET: 36 *OF:* ~~48~~ 44



UNDERGOUND INFILTRATION SYSTEM No. 1
CROSS-SECTION A-A (LOOKING NORTH EAST)
NOT TO SCALE



UNDERGOUND DETENTION SYSTEM No. 1
CROSS-SECTION B-B (LOOKING NORTH EAST)
NOT TO SCALE

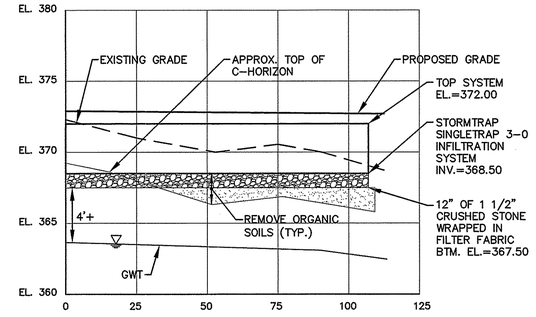


UNDERGOUND INFILTRATION SYSTEM No.1
and UNDERGROUND DETENTION SYSTEM No. 1
CROSS-SECTION C-C (LOOKING EAST)
NOT TO SCALE

NOTE: GWT AND C–HORIZON DEPTHS THROUGH CROSS SECTION ESTIMATED FROM MEASURED DEPTHS FROM TEST PITS #14–1, #14–2, AND #14–3

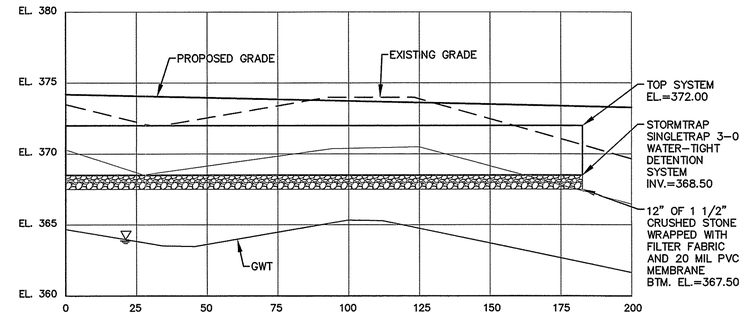
TEST PIT DATA

TEST PIT #	SURFACE EL.	ESHWT DEPTH	ESHWT EL.	C–HORIZON DEPTH	C–HORIZON EL.
14–1	346.20	72"	340.20	24"	344.20
14–2	348.30	96"	340.30	32"	345.63
14–3	347.00	84"	340.00	32"	344.33
14–4	350.00	90"	342.50	31"	347.42



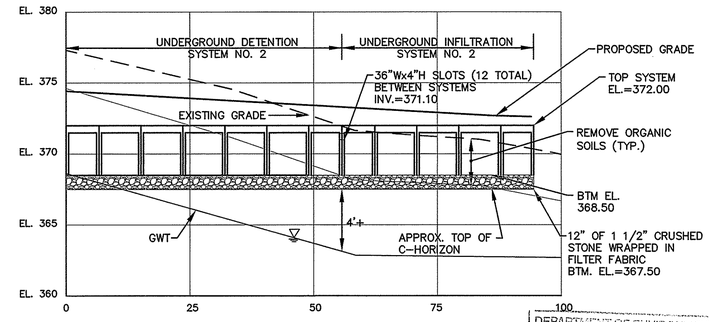
NOTE: GWT AND C–HORIZON DEPTHS THROUGH CROSS SECTION ESTIMATED FROM MEASURED DEPTHS FROM TEST PITS #14–5 AND #14–8

UNDERGOUND INFILTRATION SYSTEM No. 2
CROSS-SECTION F-F (LOOKING SOUTH)
NOT TO SCALE



NOTE: GWT AND C–HORIZON DEPTHS THROUGH CROSS SECTION ESTIMATED FROM MEASURED DEPTHS FROM TEST PITS #14–6 AND #14–7

UNDERGOUND DETENTION SYSTEM No. 2
CROSS-SECTION G-G (LOOKING SOUTH)
NOT TO SCALE



UNDERGOUND INFILTRATION SYSTEM No. 2
and UNDERGROUND DETENTION SYSTEM No. 2
CROSS-SECTION H-H (LOOKING EAST)
NOT TO SCALE

TEST PIT DATA

TEST PIT #	SURFACE EL.	ESHWT DEPTH	ESHWT EL.	C–HORIZON DEPTH	C–HORIZON EL.
14–5	370.00	80"	363.33	26"	367.83
14–6	372.00	102"	363.50	43"	368.43
14–7	373.40	101"	365.00	36"	370.40
14–8	366.50	117"	356.75	40"	363.17

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER
DATED OCT 27 2015 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and
PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS
PLAN No. 6

DATE: AUGUST 2014
SCALE: AS SHOWN
DWG. NAME: 2035–C16–DETAIL6–R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEPT 16 2015

DRAWING NUMBER

C16

SHEET: 37 *OF:* 44

STORMTRAP INSTALLATION SPECIFICATION

1. STORMTRAP MODULES SHALL BE MANUFACTURED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE OPENINGS.

2. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891-09, STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRE-CAST CONCRETE UTILITY STRUCTURES. THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

   A. SPECIFICATIONS ON THE ENGINEER'S DRAWINGS SHALL TAKE PRECEDENCE.

   B. THE STONE FOUNDATION HAS BEEN DESIGNED BASED ON THE FOLLOWING ASSUMPTIONS. THESE ASSUMPTIONS WILL NEED TO BE VERIFIED BY A GEOTECHNICAL ENGINEER WHICH WILL NEED TO BE EMPLOYED BY THE OWNER.

      1. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS AT THE ELEVATION THE STONE FOUNDATION IS TO BE PLACED. IF A STONE FOUNDATION IS TO BE USED FOR THIS CONDITION, THE BEARING PRESSURE OF THE SOILS AT THIS LEVEL WILL NEED TO MEET OR EXCEED 3500 PSF ALLOWABLE CAPACITY. IF THIS IS NOT POSSIBLE, THE GEOTECHNICAL ENGINEER MUST MAKE REMEDIAL RECOMMENDATIONS IN ORDER TO REACH THIS CAPACITY. IF THIS IS NOT POSSIBLE, THE STONE FOUNDATION MAY NOT BE AN OPTION FOR THIS LOCATION.

      2. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO EVALUATE A SOURCE OF STONE AGGREGATES THAT WILL BE PLACED ON THE PROPERLY COMPACTED 3500 PSF ALLOWABLE CAPACITY SOILS. THE STONE BASE COURSE FOR WHICH THE STORMTRAP SYSTEM WILL BEAR DIRECTLY ON WILL NEED TO ATTAIN A MINIMUM 20,000 PSF ALLOWABLE BEARING CAPACITY. STORMTRAP HAS RECOMMENDED A MINIMUM BED OF 3/4" DIAMETER ANGULAR STONE WELL COMPACTED AND SEATED, WITH NO FINES AT A 3 INCH THICKNESS AND AN ADDITIONAL 3 INCH DIAMETER CRUSHED ANGULAR STONE, WELL COMPACTED AND SEATED, WITH NO FINES AT A 15 INCH THICKNESS. PLEASE NOTE THAT THESE ARE ONLY MINIMUM RECOMMENDATIONS AND A QUALIFIED GEOTECHNICAL ENGINEER SHALL BE USED TO DETERMINE THE EXACT REQUIREMENTS FOR THE LOCATIONS THAT THE STORMTRAP SYSTEM IS TO BE LOCATED.

      3. THE CONTRACTOR SHALL REMOVE ANY AND ALL EXPANDABLE OR COLLAPSIBLE SOILS AT THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER.

      4. THE STONE SHALL BE INSTALLED A MINIMUM OF 2'-0" BEYOND THE LIMITS OF THE STORMTRAP MODULES PERIMETER.

      5. USE CRUSHED ANGULAR STONE AND COMPACT THE STONE USING A VIBRATING ROLLER WITH IT'S FULL DYNAMIC FORCE APPLIED TO ACHIEVE A FLAT SURFACE.

      6. DISK, DRY, AND COMPACT THE TOP 8" OF THE SUBGRADE SOILS TO 95% OF THE STANDARD DRY DENSITY AND 110% OPTIMUM MOISTURE CONTENT.

   C. AGGREGATE SHALL BE GRADED TO WITHIN +/- 1/4" OF THE GRADE SHOWN ON THE PLANS

   D. MINIMUM 3500 PSF SOIL BEARING CAPACITY. SOIL STRENGTHS TO BE VERIFIED IN FIELD BY OTHERS.

   E. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 3/4". IF THE SPACE EXCEEDS 3/4", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

   F. ALL EXTERIOR JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN BONDED TO A WOVEN HIGHLY PUNCTURE RESISTANT POLYMER WRAP CONFORMING TO ASTM C891-09 AND SHALL BE 0'-8" WIDE WITH INTEGRATED PRIMER SEALANT AS APPROVED BY STORMTRAP. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

      1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE THE JOINT WRAP IS TO BE APPLIED.

      2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

   G. THE FILL PLACED AROUND THE STORMTRAP UNITS MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY OR OTHERWISE SPECIFIED BY ENGINEER. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES BOUNDING OR WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGE ACTION. (REFERENCE ARTICLE 502.10 I.D.O.T. S.S.R.B.C.) CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MATERIAL SHALL BE CLEAN, CRUSHED, ANGULAR No.5 (AASHTO M43) AGGREGATE.

   H. DISTRIBUTE THE FILL OVER THE SYSTEM WITH A TRACKED CONSTRUCTION VEHICLE, DO NOT EXCEED THE MAXIMUM ALLOWABLE GROUND PRESSURE SHOWN IN TABLE 1.

TABLE 1.

FILL DEPTH	TRACK WIDTH	MAX GROUND PRESSURE
12"	12"	1690 psf
	18"	1219 psf
	24"	1111 psf
	30"	1000 psf
	36"	924 psf

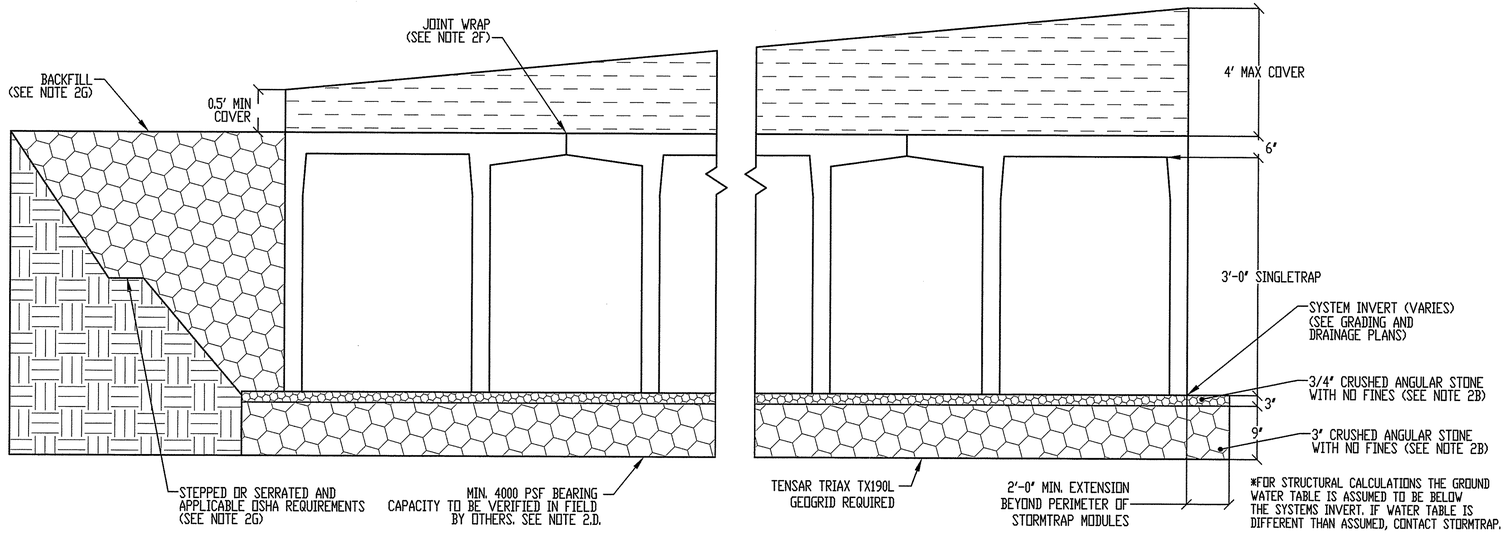
MAXIMUM ALLOWABLE GROUND PRESSURE IS THE VEHICLE OPERATING WEIGHT DIVIDED BY THE TOTAL VEHICLE TRACK-GROUND CONTACT AREA, FOR BOTH TRACKS.

USE A WALK-BEHIND OR VIBRATORY ROLLER, NOT TO EXCEED A MAXIMUM GROSS VEHICLE WEIGHT OF 12,000# AND A MAXIMUM DYNAMIC FORCE OF 20,000#, WITH A MINIMUM OF 12" OF COMPACTED FILL OVER THE SYSTEM.

FULL DUMP TRUCKS MUST NOT BE DRIVEN OR DUMP STONE OVER THE SYSTEM. RAISING THE BODY TO DUMP STONE SIGNIFICANTLY INCREASES THE REAR WHEEL LOADS.

STORMTRAP SPECIFICATION

1. TOTAL COVER: MIN. 0.5' MAX. 4' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
2. CONCRETE CHAMBER DESIGNED FOR AASHTO HS-20 HIGHWAY LOADING. MIN. SOIL PRESSURE 3500 PSF.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW THE SYSTEMS INVERT. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. FOR STRUCTURAL CALCULATIONS THE SOIL DENSITY IS ASSUMED TO BE 120 PCF.



RECOMMENDED ACCESS OPENING SPECIFICATION

1. TYPICAL ACCESS OPENINGS FOR THE STORMTRAP SYSTEM ARE 2'-0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 2'-0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'-0" OF CLEARANCE IN ALL DIRECTIONS FROM THE EDGE OF THE STORMTRAP UNITS.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3-PFC (SEE DETAIL TO THE RIGHT) ARE PROVIDED INSIDE ANY UNIT WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE UNIT IS TO BE PLACED A DISTANCE OF 1'-0" FROM THE INSIDE EDGE OF THE STORMTRAP UNITS. ALL ENSUING STEPS SHALL BE PLACED WITH A MAXIMUM DISTANCE OF 1'-4" BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE UNIT.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO COINCIDE WITH THE ACCESS OPENING OR THE CENTER OF GRAVITY OF THE UNIT AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST ONE ACCESS OPENING PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (BY OTHERS)

RECOMMENDED PIPE OPENING SPECIFICATION

1. PIPE OPENINGS SHALL MAINTAIN A MINIMUM 1'-0" OF CLEARANCE FROM A VERTICAL EDGE OF THE STORMTRAP UNIT.
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY UNIT HEIGHT. PREFERRED OPENING SIZE ø 36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'-0" CONCRETE COLLAR, AND A AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH, AS SHOWN. A STRUCTURAL GRADE CONCRETE OR GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH NON-SHRINK GROUT.

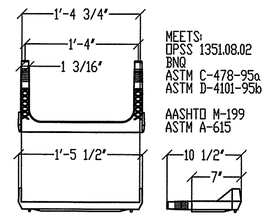
RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

1. CLEAN AND LIGHTLY LUBRICATE ALL OF PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

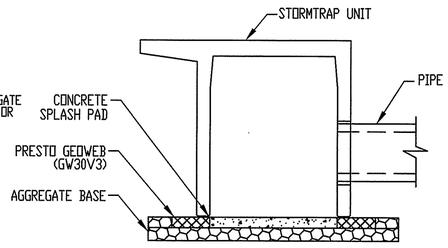
SPLASH PAD & GEOWEB SPECIFICATION

1. THE APPROVED GEOWEB SHALL BE PRESTO GEOWEB (GW30V3). THE GEOWEB NOMINAL DIMENSIONS SHALL BE 9-FT x 25-FT.
2. SPLASH PAD AND GEOWEB SHALL BE INSTALLED PRIOR TO INSTALLATION OF THE STORMTRAP UNITS
3. THE GEOWEB INFILL MATERIAL SHALL BE AASHTO M43 #5 AGGREGATE(SEE DETAIL A).
4. THE CONCRETE SPLASH PAD SHALL BE INSTALLED WITHIN THE GEOWEB AND IS REQUIRED AT ALL PIPE ENTRY LOCATIONS. SEE DETAIL B & C.
5. THE GEOWEB EDGE SHALL BE INSTALLED 1-FT BEYOND THE OUTER PERIMETER OF THE STORMTRAP SYSTEM.
6. THE GEOWEB LONGITUDAL DIMENSION (25-FT) SHALL BE INSTALLED PARALLEL TO THE STORMTRAP LEGS.
7. THE CONCRETE SPLASH PAD AND GEOWEB SHALL BE CENTERED AT THE PIPE PENETRATION.
8. SPLASH PAD DIMENSIONS COULD VARY IN UNITS THAT ARE LESS THAN 15'-4" IN LENGTH.

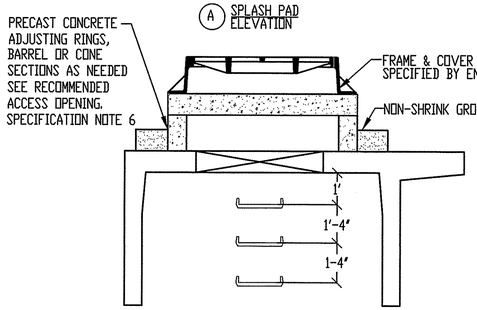
3'-0" SINGLETRAP



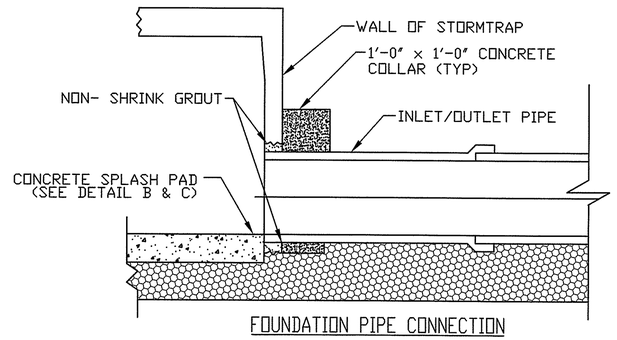
STEP DETAIL



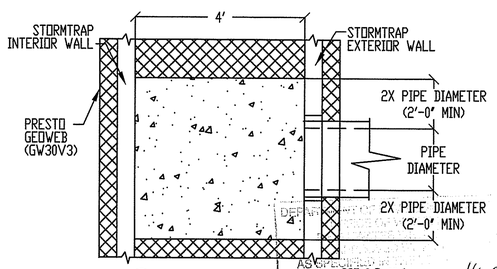
(A) SPLASH PAD ELEVATION



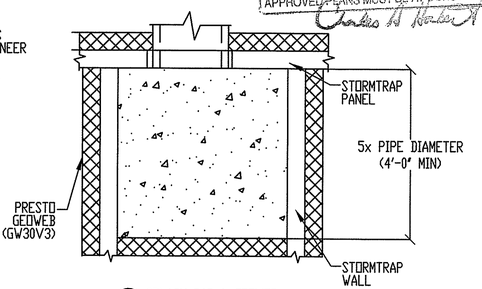
RISER / STAIR DETAIL



FOUNDATION PIPE CONNECTION



(B) SPLASH PAD & GEOWEB PLAN VIEW - SIDE PANEL



(C) SPLASH PAD & GEOWEB PLAN VIEW - END PANEL

AS NOTED
OCT 27 2015
14-0166
THESE PLANS ARE NOT TO BE ALTERED. ANY CHANGES ALLOWED WITHOUT PRIOR APPROVAL. ALL APPROVED PLANS MUST BE AT CONSTRUCTION SITE.
SEP 16 2015

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 7

DATE:	*SCALE:*
AUGUST 2014	NOT TO SCALE

DWG. NAME: 2035-C17-DETAIL7-R6.dwg

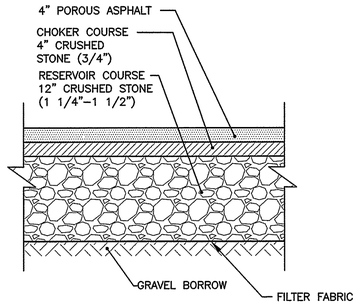
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

C17

SHEET: 38 *OF:* ~~49~~ 44



NOTES:
1. POROUS PAVEMENT MATERIALS AND INSTALLATION SHALL BE IN CONFORMANCE WITH SECTION 5.4 OF THE RI STORMWATER DESIGN AND INSTALLATION STANDARADS MANUAL, 2010.
2. POROUS PAVEMENT SHALL HAVE AT LEAST 15% OPEN SURFACE AREA. PAVEMENT MIX SHALL BE SUBMITTED TO ENGINEER PRIOR TO PAVING.

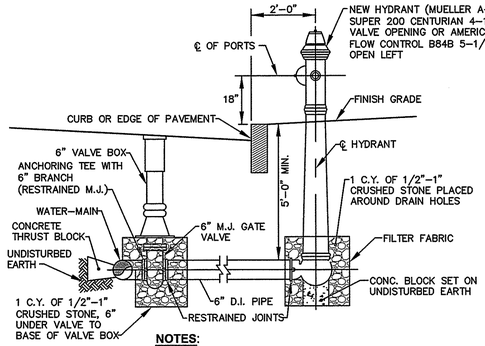
TYPICAL POROUS PAVEMENT STRUCTURE DETAIL

NOT TO SCALE

GRADATIONS AND COMPACTION OF CHOKER AND RESERVOIR COURSE MATERIAL

US STANDARD SIEVE SIZE (INCHES)	PERCENT PASSING: CHOKER COURSE (AASHTO No. 57)	PERCENT PASSING: RESERVOIR COURSE (AASHTO No. 3)
6	–	–
2 1/2	–	100
2	–	90–100
1 1/2	100	35–70
1	95–100	0–15
3/4	–	–
1/2	25–60	0–5
3/8	–	–
#4	0–10	–
#8	0–5	–
#200	–	–
% COMPACTION ASTM D698 / AASHTO T99	95	95

SOURCE:
RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, DECEMBER 2010



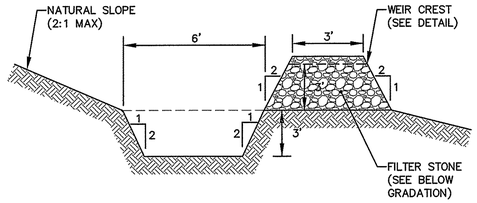
NOTES:
1. INSTALLATION SHALL NOT OBSTRUCT SIDEWALK TO PEDESTRIAN OR PHYSICALLY IMPAIRED.
2. MECHANICAL JOINT PIPE W/ RESTRAINED JOINTS FOR BRANCHES OVER ONE LENGTH OF PIPE.
3. PRIOR TO ORDERING, HYDRANT MUST BE APPROVED BY TOWN WATER DEPT. AND FIRE DISTRICT.

TYPICAL HYDRANT INSTALLATION

NOT TO SCALE

WATER NOTES

1. ALL INSTALLATION, JOINTS, CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO THE CUMBERLAND WATER DEPARTMENT REQUIREMENTS, AWWA STANDARDS AND GOVERNMENTAL REQUIREMENTS.
2. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CLASS 350 CEMENT MORTAR LINED COMPACT STYLE (BY AMERICAN MANUFACTURER ONLY). FITTINGS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C153/A21.53. MECHANICAL JOINTS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C111/A21.11.
3. WATER PIPE SHALL BE DOUBLE CEMENT MORTAR LINED DUCTILE IRON PIPE CL52 AND SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51.
4. CONSTRUCTION SHALL INCLUDE ALL PIPE, JOINTS, BENDS, TEES, FITTINGS, "MEGA–LUG" RESTRAINED MECHANICAL JOINTS, SERVICE CONNECTIONS AND ALL MISCELLANEOUS ITEMS REQUIRED TO CONSTRUCT THE PROPOSED SYSTEM.
5. "MEGA–LUG" RESTRAINED MECHANICAL JOINTS SHALL BE INSTALLED IN LOCATIONS INDICATED AND AT ALL BENDS, FITTINGS, PLUGS, ETC.
6. PRESSURE AND LEAKAGE TESTS AND DISINFECTING PIPES SHALL BE PERFORMED BY THE CONTRACTOR IN CONFORMANCE TO AMERICAN WATER WORKS ASSOCIATION (AWWA) RECOMMENDATIONS, CUMBERLAND WATER DEPARTMENT REQUIREMENTS, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.
7. ALL FITTINGS, PIPE, JOINTS, ETC. SHALL BE DESIGNED FOR 1.5 TIMES WORKING PRESSURE BUT NOT LESS THAN 150 PSI.
8. WATER PIPE SHALL TYPICALLY BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM SEWER PIPE, AND AT A MINIMUM DEPTH OF COVER EQUAL TO 5'. WHERE A NEW WATER MAIN IS LESS THAN 18 INCHES CLEAR DISTANCE ABOVE A SEWER OR WHERE A WATER MAIN PASSES BENEATH A SEWER OR STORM DRAIN, ENCASE THE SEWER OR WATER IN 6" OF CONCRETE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING WATER MAIN. THE USE OF DUCTILE IRON TIGHT JOINT SEWER PIPE IN LIEU OF CONCRETE ENCASEMENT WILL BE CONSIDERED UPON CONTRACTORS SUBMITTAL OF SPECIFICATIONS TO ENGINEERS FOR APPROVAL.
9. ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS, SUCH AS PIPE, RESTRAINED MECHANICAL JOINTS, FITTINGS, CASTINGS, ETC. SHALL BE SUBMITTED FOR THE CUMBERLAND WATER DEPARTMENT AND ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS SUBMISSION SHALL INCLUDE MANUFACTURER'S LITERATURE, SHOP DRAWINGS, PROPOSED CONSTRUCTION METHODS, ETC.
10. WATER LINE TRENCH TO BE AWWA TYPE 5. A METALIZED DETECTABLE IDENTIFICATION TAPE 2" IN WIDTH, BLUE IN COLOR AND PRINTED WITH "CAUTION WATERLINE BURIED BELOW" SHALL BE UTILIZED OVER ALL MAINS. TAPE SHALL BE SET AT APPROXIMATELY 1'–0" BELOW FINISHED GRADE.
11. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL COMPLETE AND SUBMIT THE "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE" FOR UNDERGROUND PIPING TO THE CUMBERLAND WATER DEPARTMENT AND ENGINEER. IN ADDITION, THE CONTRACTOR IS REQUIRED TO SUBMIT THE FOLLOWING ITEMS TO THE ENGINEER FOR THEIR REVIEW AND APPROVAL:
    - TYPE AND MANUFACTURER OF SERVICE BOXES
    - TYPE AND MANUFACTURER OF CORPORATIONS AND CURB STOPS
    - TYPE AND MANUFACTURER OF VALVE BOXES (OPEN LEFT)
    - TYPE AND MANUFACTURER OF D.I. MECHANICAL JOINTS AND FITTINGS
    - TYPE AND MANUFACTURER OF TAPPING SLEEVES
    - TYPE AND MANUFACTURER OF DI PIPING
    - TYPE AND MANUFACTURER OF RESILIENT SEALED GATE VALVES (OPEN LEFT)
    - TYPE AND MANUFACTURER OF COPPER SERVICE LINE
12. WHEN THIS PROJECT IS COMPLETE, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE WATER DEPARTMENT AND ENGINEER TWO SETS OF AS BUILT PLANS (ONE BLUE LINE, ONE REPRODUCIBLE COPY–MYLAR OR SEPIA) WHICH INDICATES:
    a. ALL CURB STOPS WITH APPROPRIATE LOCATING MEASUREMENTS – MAIN–TO–CURB AND MEASUREMENTS FROM PERMANENT STRUCTURES.
    b. A SCHEDULE OF MATERIALS WHICH INDICATES: AND MEASUREMENTS FROM PERMANENT STRUCTURES.
        1. ITEM QUANTITY
        2. MANUFACTURER
        3. DESCRIPTION
            a. INCLUDE SERIAL #'S AS APPLICABLE
            b. MATERIAL
            c. OPERATION CHARACTERISTICS
13. THE CONTRACTOR SHALL VERIFY THE FIRE SERVICE PIPE SIZE REQUIREMENT WITH THE BUILDING ARCHITECT AND PLUMBING/FIRE SPRINKLER CONTRACTOR PRIOR TO ORDERING PIPE, METERS AND BACKFLOW PREVENTORS. COORDINATION WITH THE CUMBERLAND FIRE CHIEF AND CUMBERLAND WATER DEPARTMENT IS REQUIRED TO DETERMINE THE EXISTING WATER PRESSURE AVAILABLE.
14. ALL VALVES TO BE RESILIENT WEDGE GATE VALVES (OPEN LEFT).
15. ALL FITTINGS TO BE RESTRAINED WITH MECHANICAL JOINTS. RESTRAINTS TO BE MEGA–LUG OR EQUAL. ALL DESIGN AND/OR PLACEMENT SHALL BE REVIEWED AND APPROVED BY THE CUMBERLAND WATER DEPARTMENT.
16. RESTRAIN ALL PUSH–ON BELL JOINTS WITHIN 20 FEET OF MECHANICAL JOINTS. RESTRAINTS TO BE SERIES 800 COVER–ALL BY EBAA IRON OR EQUAL.
17. DOMESTIC WATER SERVICE LINES DHALL BE DUCTILE IRON OR COPPER.
18. ALL HYDRANTS SHALL OPEN LEFT.



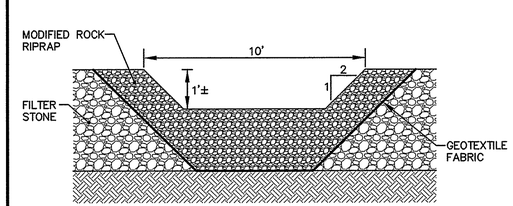
TEMPORARY SEDIMENT TRAP DETAIL

NOT TO SCALE

NOTES:
1. FILTER STONE SHALL MEET THE REQUIREMENTS OF R.I.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.01.09 TABLE 1, COLUMN V FILTER STONE.

US STANDARD SIEVE SIZE (INCHES)	FILTER STONE
1	100
3/4	70–85
1/2	10–40
3/8	0–20
#4	0–5

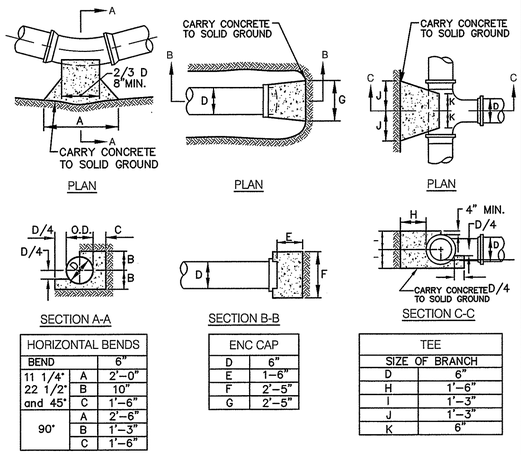
GRADATION OF FILTER STONE MATERIAL



TEMPORARY SEDIMENT TRAP OUTLET DETAIL

NOT TO SCALE

NOTES:
1. THE TEMPORARY SEDIMENT TRAPS MUST OUTLET ONTO UNDISTURBED, STABILIZED GROUND.
2. CONTRACTOR SHALL INSTALL 1 OUTLET PER 100' LENGTH OF TEMPORARY SEDIMENT TRAP (1 OUTLET MIN. PER TEMPORARY SEDIMENT TRAP).
3. THE MODIFIED ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF THE R.I.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.10.0.3.2.
4. CONTRACTOR MUST REFER TO THE INSTALLATION, INSPECTION, MAINTENANCE, AND REMOVAL REQUIREMENTS PROVIDED IN THE R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, AS AMENDED.



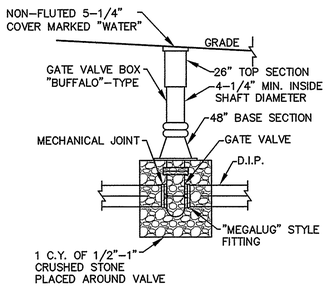
HORIZONTAL BENDS		
BEND		6"
11 1/4°	A	2'–0"
22 1/2° and 45°	B	10"
	C	1'–6"
90°	A	2'–6"
	B	1'–3"
	C	1'–6"

ENC CAP	
D	6"
E	1–6"
F	2'–5"
G	2'–5"

TEE	
SIZE OF BRANCH	
D	6"
H	1'–6"
I	1'–3"
J	1'–3"
K	6"

CONCRETE THRUST BLOCKS FOR CAPS, TEES AND HORIZONTAL BENDS

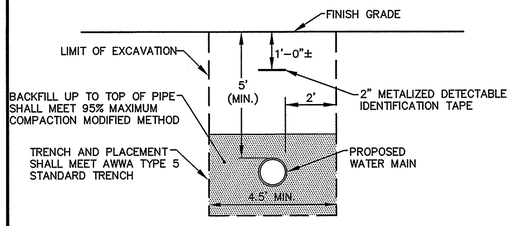
NOT TO SCALE



NOTE:
WRAP CRUSHED STONE WITH 4 oz. NON–WOVEN GEOTEXTILE FABRIC BEFORE FILLING EXCAVATION.

TYPICAL WATER GATE BOX INSTALLATION

NOT TO SCALE



TYPICAL WATER LINE TRENCH DETAIL

NOT TO SCALE

THRUST BLOCK NOTES

1. ALL CONCRETE TO BE CLASS B.
2. BUTTRESS DIMENSIONS SHOWN ARE MINIMUM. DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 1500 P.S.F. LATERAL AND STATIC WATER PRESSURE OF 150 P.S.I. WHERE PRESSURE EXCEEDS 150 P.S.I. OR WHERE SOIL BEARING PRESSURE IS LESS THAN 1500 P.S.F. LATERAL; OR SOIL CONDITIONS OR EXCAVATION LIMITS ENCOUNTERED DURING CONSTRUCTION MAKE IT UNFEASIBLE TO PLACE THRUST BLOCKS AGAINST UNDISTURBED EARTH OF THE PROPER BEARING CAPACITY, THE CONTRACTOR SHALL DESIGN, GET APPROVAL OF, AND PLACE SPECIAL REACTION BLOCKS OF SUFFICIENT WEIGHT TO RESIST THE FULL THRUST OF THE LINE UNDER TEST AND OPERATING PRESSURES. THE DESIGN OF SUCH BLOCKS SHALL BE SUBJECT TO THE APPROVAL OF THE CUMBERLAND WATER DEPARTMENT AND THE ENGINEERS AND SHALL BE SUBMITTED TO THE WATER DEPARTMENT BEFORE ACTUAL INSTALLATION TAKES PLACE.
3. ALL THRUST BLOCKS SHALL BE CONCRETE 3,000 P.S.I. @ 28 DAYS AND BEARING AGAINST UNDISTURBED EARTH.

AS SUBMITTED
DATED OCT 27 2015 FILE # 14-0166
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Charles M. Newell
SEP 14 2015

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/1/15

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 8

DATE:	SCALE:
AUGUST 2014	AS SHOWN

DWG. NAME: 2035–C18–DETAIL8–R6.dwg

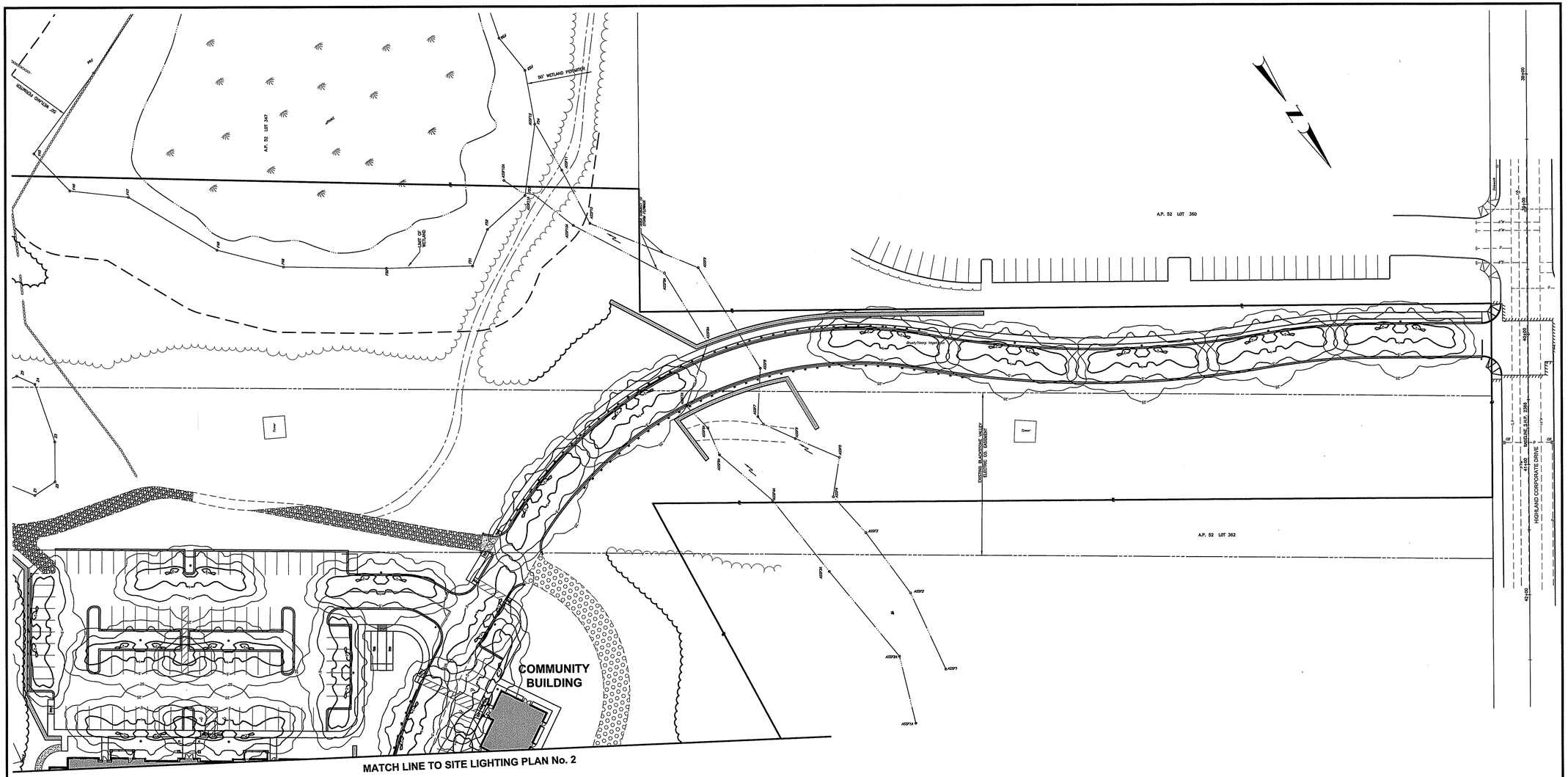
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

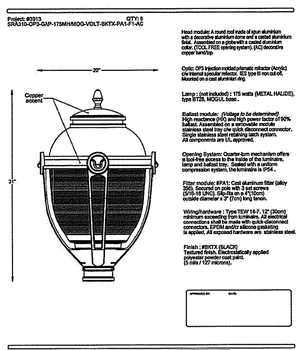
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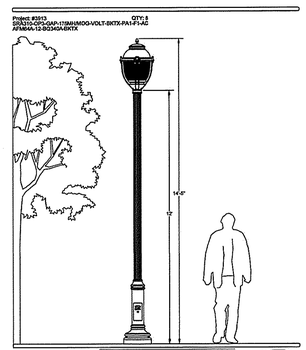
C18

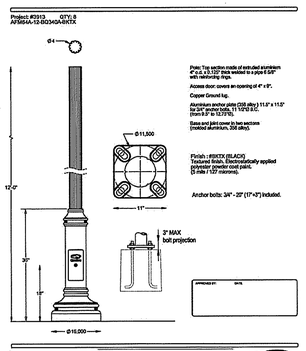
SHEET: 39 OF: 44



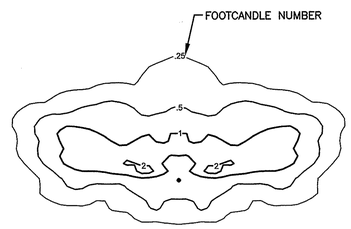
NOTE:
LIGHTING FIXTURE STYLE AND MANUFACTURER MAY VARY.







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FOOTCANDLE DETAIL
NOT TO SCALE

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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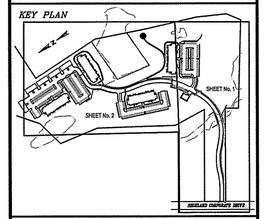
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LIGHTING PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	1"=40'

DWG. NAME: 2035–E01–LIGHT–R6.dwg

REVISIONS

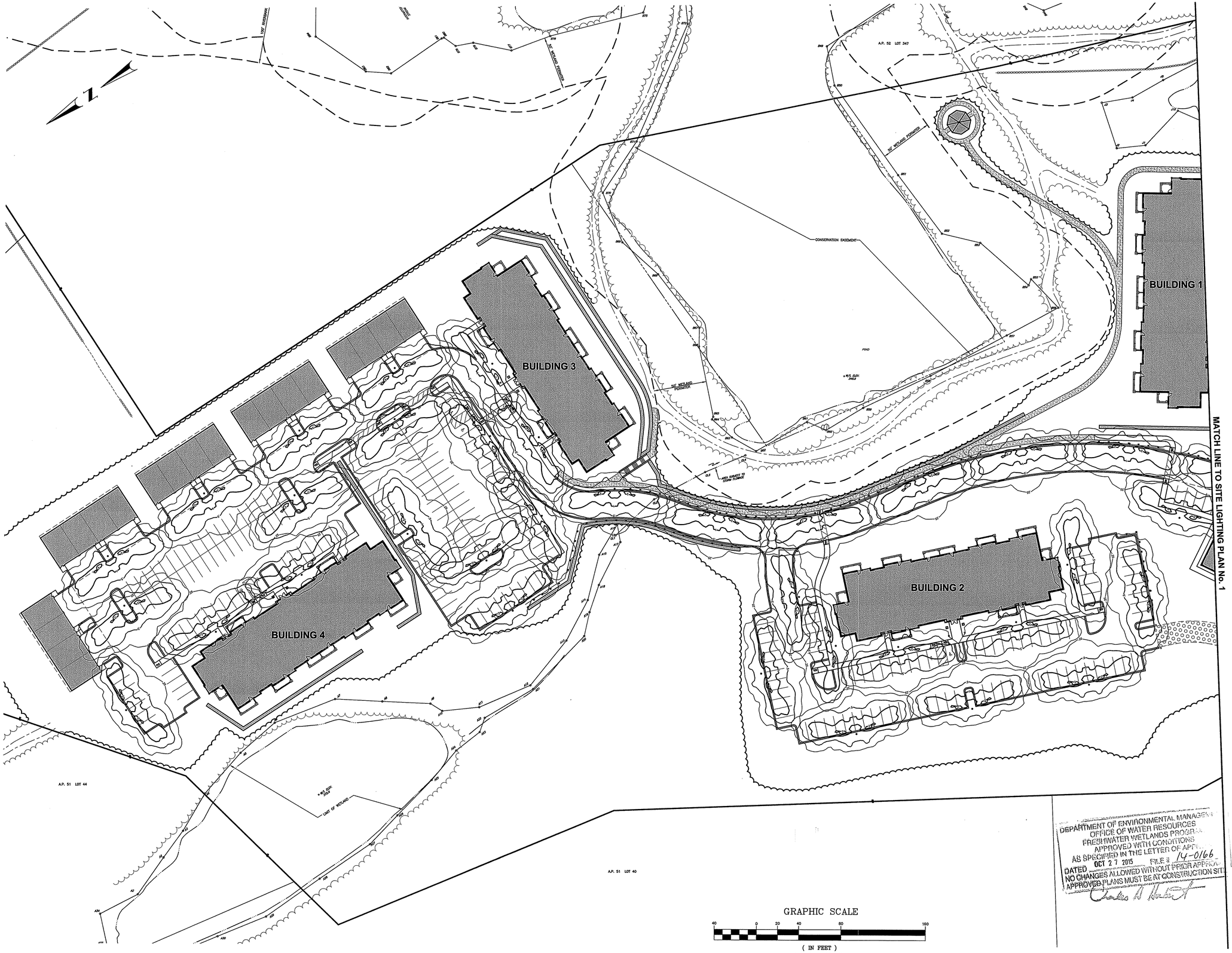
NUMBER	*REMARKS*	*DATE*
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2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

E1.1

SHEET: 40 *OF:* 44



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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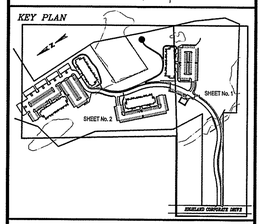
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/11/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LIGHTING PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	1"=40'

DWG. NAME: 2035-E01-LIGHT-R6.dwg

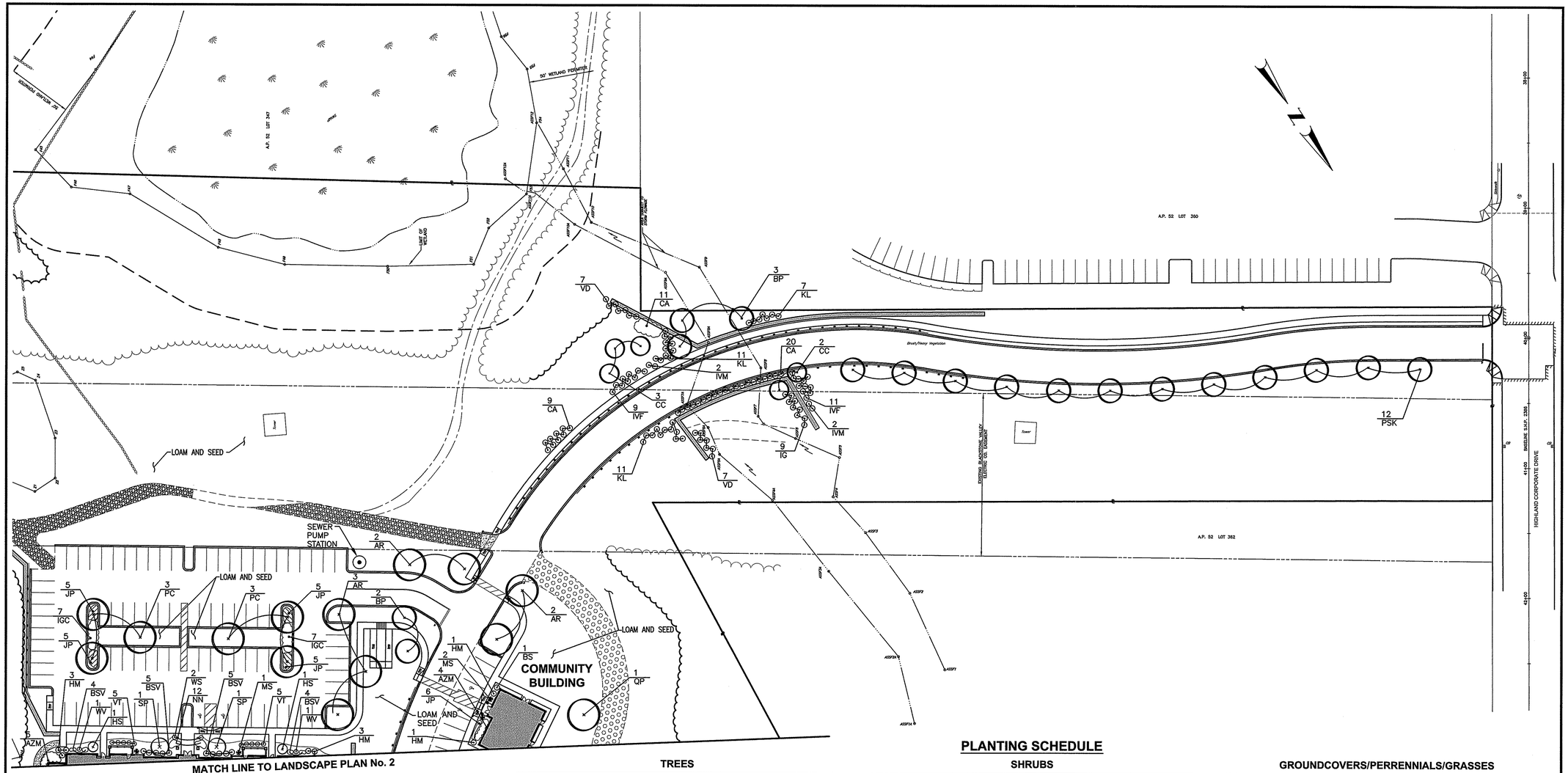
REVISIONS

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4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15

DRAWING NUMBER

E1.2

SHEET: 41 *OF:* 44



MATCH LINE TO LANDSCAPE PLAN No. 2

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

PLANTING SCHEDULE

TREES

Key	Botanical Name / *Common Name*	Size	Remarks
AG	Acer ginnals *Amur Maple*	6'–7'	B&B
AR	Acer rubrum 'October Glory' *Red Maple*	2'–2 1/2" cal.	B&B
AS	Acer saccharum *Sugar Maple*	2'–2 1/2" cal.	B&B
BN	Betula nigra 'Heritage' *River Birch*	8'–10'	Clump
BP	Betula papyrifera *Paper Bark Birch*	8'–10' Clump	B&B
CC	Cercis canadensis *Eastern Redbud*	5'–6'	B&B
COG	Chamaecyparis o. 'Gracilis Compacta' *Compact Hinoki Falsecypres*	5'–6'	B&B
CK	Cornus kousa *Kousa Dogwood*	1"–1 1/2" cal.	B&B
FSP	Fagus sylvatica 'Pendula' *Green Weeping European Beech*	2"–2 1/2" cal.	B&B
LD	Larix decidua *European Larch*	1 1/2"–2" cal.	B&B
OA	Oxydendon arboreum *Sourwood*	7'–8'	B&B
PC	Prunus calleryana 'Cleveland Select' *Cleveland Select Pear*	2'–2 1/2" cal.	B&B
PS	Pinus strobus *Eastern White Pine*	6'–8'	B&B
PSK	Prunus serrulata 'Kwanzan' *Kwanzan Cherry*	2'–2 1/2" cal.	B&B
QP	Quercus palustus *Pin Oak*	2'–2 1/2" cal.	B&B
TT	Thuja occidentalis 'Techney' *Techney Arborvitae*	6'–8'	B&B
TC	Tilia cordata 'Greenspire' *Greenspire Littleleaf Linden*	2'–2 1/2" cal.	B&B
ZS	Zelkova serrata *Japanese Zelkova*	2'–2 1/2" cal.	B&B

SHRUBS

	Acer plamatum 'Disectum' / *Threadleaf Japanese Dwarf Maple*	25 gallon	cont.
AP			
AV	Azalea viscosum *Swamp Azalea*	3 gallon	cont.
AZ	Azalea varieties *Azalea*	5 gallon	cont.
CA	Clethra alnifolia *Summersweet Clethra*	3 gallon	cont.
HM	Hydrangea macrophylla 'Nikko Blue' *Nikko Blue Hydrangea*	5 gallon	cont.
HP	Hydrangea paniculata 'Grandiflora' *Pee Gee Tree Hydrangea*	15 gallon	cont.
IG	Ilex glabra *Inkberry*	24"–30"	B&B
IGC	Ilex glabra 'Compacta' *Compact Inkberry*	5 gallon	cont.
IVF	Ilex verticillata 'Sparkleberry' Female *Winterberry–female*	5 gallon	cont.
IVM	Ilex verticillata–Male *Winterberry–Male*	2 gallon	cont.
JP	Juniperus procumbens 'Nana' *Japanese Garden Juniper*	2 gallon	cont.
KL	Kalmia latifolia *Mountain Laurel*	5 gallon	cont.
R	Rosa Double Knockout *Double Knockout Rose*	3 gallon	cont.
RBD	Rhododendron 'Boule De Neige' *White Compact Rhododendron*	5 gallon	cont.
RY	Rhododendron 'Yaku Princess' *Pink Dwarf Rhododendron*	5 gallon	cont.
SBAW	Spirea bumalda 'Anthony Waterer' *Anthony Watere Spirea*	3 gallon	cont.
TD	Taxus media 'Densiformis' *Dense Spreading Yew*	18"–24"	B&B
VD	Viburnum dentatum *Arrowwood Viburnum*	5 gallon	cont.
VT	Viburnum trilobum 'Bailey's Compact' *Compact Cranberrybush Viburnum*	3 gallon	cont.
WV	Weigela florida 'My Monet' *Tri–color Foliage Weigela*	3 gallon	cont.

GROUNDCOVERS/PERRENNIALS/GRASSES

	Hemerocallis 'Hyperion' / *Yellow Daylily*	1 gallon	cont.
HH			
HSE	Hosta 'Sieboldiana Elegans' *Large Blue Hosta*	1 gallon	cont.
JP	Juniperus procumbens nana *Japanese Garden Juniper*	2 gallon	cont.
MD	Microbiota decussata *Siberian Cypress*	2 gallon	cont.
MS	Miscanthus sinenesis 'Gracillimus' *Maiden Grass*	5 gallon	cont.
NN	Nipponanthemus nipponicum *Montauk Daisy*	1 gallon	cont.
VM	Vinca minor *Periwinkle*	1 gallon	B&B

VINES

CR	Campsis radicans 'Atomic Red' *Trumpet Vine*	2 gallon stk.	cont.
HAP	Hydrangea anomala petiolaris *Climbing Hydrangea*	3 gallon esp.	cont.
WS	Wisteria sinensis 'Purpurea' *Purple Chinese Wisteria*	2 gallon stk.	cont.

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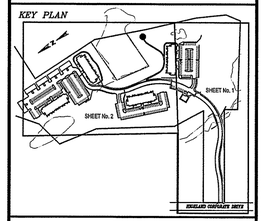
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/7/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

LANDSCAPE PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	1"=40'

DWG. NAME: 2035–L01–LAND–R6.dwg

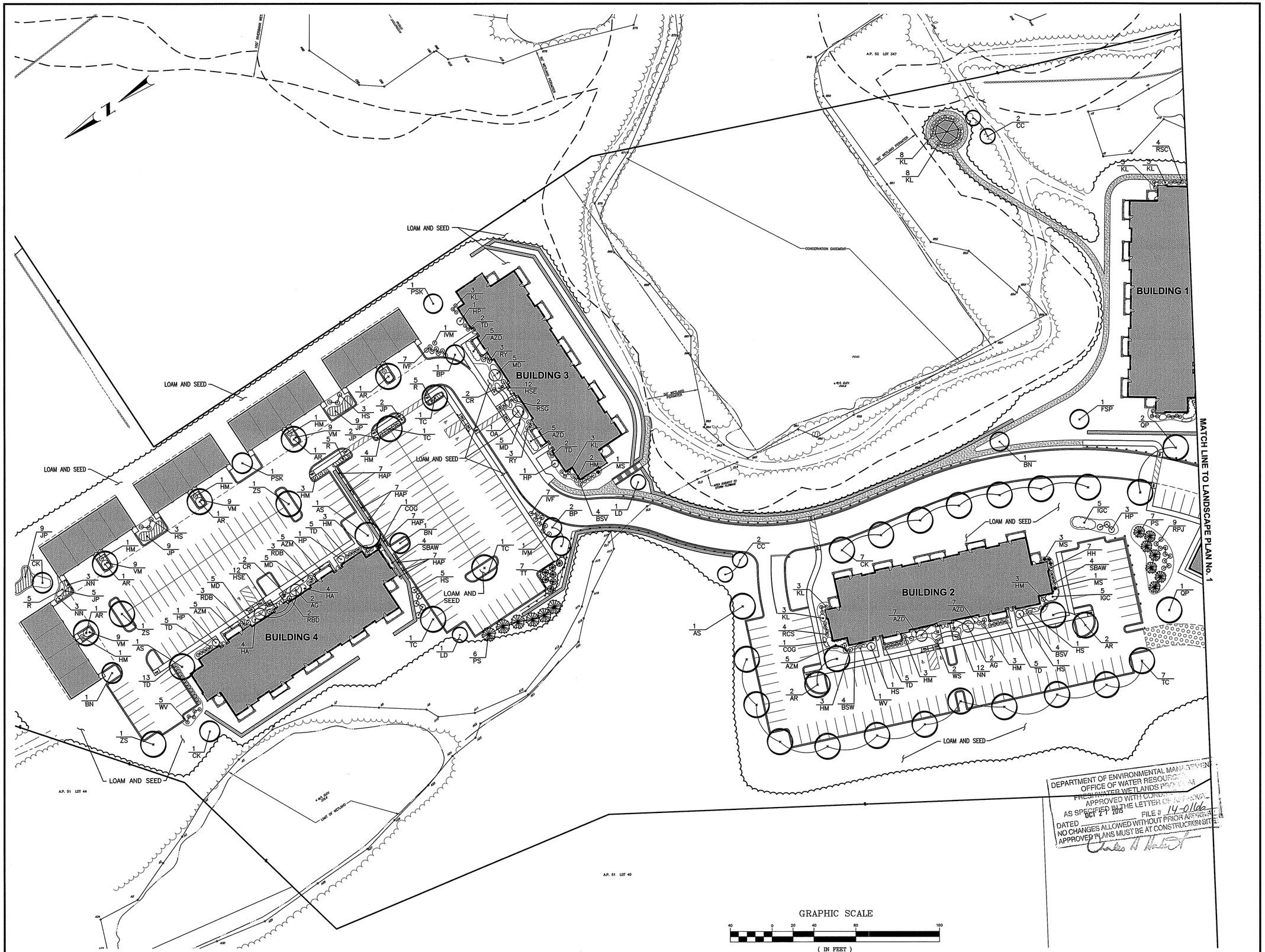
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
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4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

DRAWING NUMBER

L1.1

SHEET: 42 OF: 44



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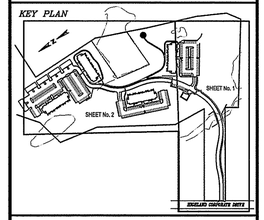
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
9/1/15

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

LANDSCAPE PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	1"=40'

DWG. NAME: 2035-L01-LAND-R6.dwg

REVISIONS

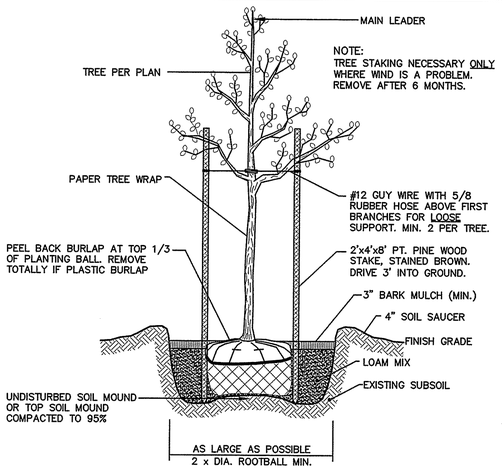
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SEP 17 2015

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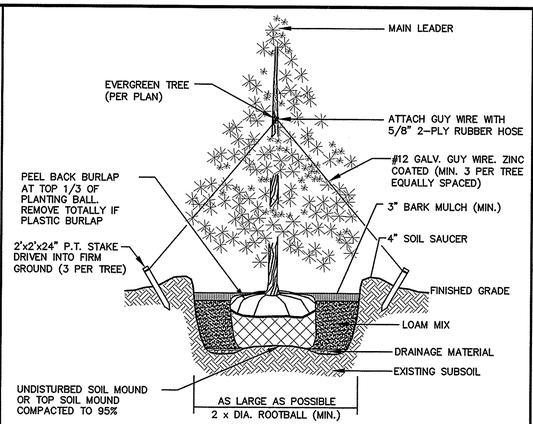
L1.2

SHEET: 43 *OF:* 1044



DECIDUOUS TREE PLANTING DETAIL

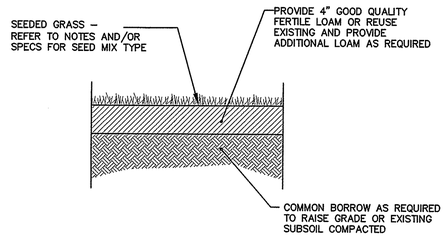
NOT TO SCALE



NOTE:
TREE STAKING OR SUPPORT NECESSARY ONLY WHERE WIND IS A PROBLEM, REMOVE AFTER SIX (6) MONTHS.

EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



NOTE:

THE CONTRACTOR WILL BE RESPONSIBLE FOR WATERING LAWN DURING THE COURSE OF THE GROWING SEASON FOR A PERIOD OF ONE (1) YEAR.

LOAM-SEED DETAIL

NOT TO SCALE

SEEDING NOTES

1. LOAM SHALL BE SPREAD TO A MINIMUM DEPTH OF 4" OVER ALL AREAS DESIGNATED ON PLANS.
2. SHAPE AND SMOOTH THE SURFACE TO THE LINES AND GRADES AS SHOWN ON PLANS.
3. FERTILIZE WITH 10-10-10 OR EQUIVALENT ANALYSIS. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN A SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 3 TO 4 INCHES OF THE PLANTING SOIL. APPLY AT THE RATE OF 8 POUNDS PER 1,000 SQUARE FEET AT SEEDING.
4. LIME: SPREAD EVENLY AND WORK INTO THE SOIL DURING PREPARATION OF SEED BED AT THE RATE OF ONE TON PER ACRE. INCORPORATE INTO THE SOIL BY DICING OR OTHER APPROVED METHOD. DISTRIBUTE LIME UNIFORMLY AND WORK INTO TOP 4 INCHES OF TOP SOIL (MINIMUM) AND UNIFORMLY BLEND BY DICING OR ROTOTILLING.
5. APPLICATION OF SEED:
   A. RATE OF APPLICATION OF SEED SHALL BE 8 POUNDS PER 1,000 SQUARE FEET OR AS INDICATED ON PLANS.
   B. SEEDING SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS, AND ONLY DURING THE FOLLOWING DATES:
      SPRING SEEDING: MARCH 15 TO MAY 31
      FALL SEEDING: AUGUST 15 TO OCTOBER 15
   C. THE CONTRACTOR SHALL KEEP ALL SEEDED AREAS WATERED AND IN GOOD CONDITION, RESEEDING IF AND WHEN NECESSARY FOR AN 8 WEEK PERIOD OR UNTIL A GOOD, HEALTHY, UNIFORM GROWTH IS ESTABLISHED OVER THE ENTIRE AREA. THE CONTRACTOR SHALL ALSO MAINTAIN THESE AREAS IN AN APPROVED CONDITION UNTIL PROVISIONAL ACCEPTANCE.
   D. DURING THIS PERIOD, WATER TURF AS NECESSARY TO MAINTAIN AN ADEQUATE SUPPLY OF MOISTURE WITHIN THE ROOT ZONE. AN ADEQUATE SUPPLY OF MOISTURE IS EQUIVALENT OF ONE INCH OF ABSORBED WATER PER WEEK THAT IS DELIVERED AT WEEKLY INTERVALS IN THE FORM OF NATURAL RAIN OR IS AUGMENTED AS REQUIRED BY PERIODIC WATERING.
   E. OVERSEED WHEN NECESSARY TO PROMOTE GRASS GROWTH.
   F. REPLANT AREAS VOID OF TURF ONE SQUARE FOOT OR LARGER.
   G. SEED:
      a. SEED ALL AREAS DESIGNATED ON PLAN AS WELL AS ALL DISTURBED EXISTING AREAS WITH THE FOLLOWING SEED MIX:

SEED MIX No. 1

(SLOPES, MEADOWS AND GENERAL RESTORATION AREA)

TYPE	% BY WEIGHT
CREEPING RED FESCUE	70
ASTORIA BENTGRASS	5
BIRDSFOOT TREFOIL	15
PERENNIAL RYE GRASS	10

APPLICATION RATE = 200 lbs. / ACRE

SEED MIX No. 2

(ENDOPHYTE SEED MIX)

TYPE (MOWED AREAS)	% BY WEIGHT
PERENNIAL RYE TURF	30
TYPE TALL FESCUE	30
CHEWINGS FESCE	30
KENTUCKY BLUEGRASS	10

APPLICATION RATE = 250 lbs. / ACRE

SEED MIX No. 3

(DETENTION/RETENTION AREAS)

TYPE	% BY WEIGHT
CREEPING RED FESCUE	28
TALL FESCUE	24
PERENNIAL RYE GRASS	18
LITTLE BLUESTEM	15
REDTOP	4
NORTHEAST WILDFLOWER MIX	4

APPLICATION RATE = 220 lbs. / ACRE
OR 5 LBS. PER 1,000 S.F.

SEED MIX No. 4

(BIO-DETENTION AREAS)

TYPE	% BY WEIGHT
HARD FESCUE	60
SHEEP FESCUE	40

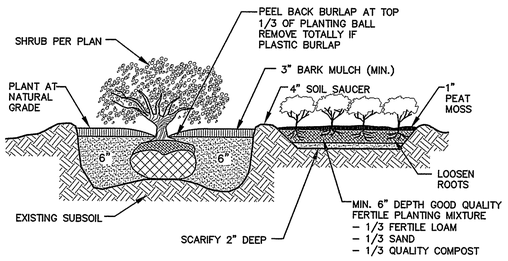
APPLICATION RATE =25-50 LBS./ACRE

SEED MIX No. 5

(WETLAND AREAS)

TYPE	% BY WEIGHT
REDTOP (AGROSTIS STOLONIFERA)	25
DEET TONGUE (PANICUM CLANDESTINUM)	20
BLUEJOINT GRASS (CALAMAGROSTIS CANAD.)	20
ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	10
SWITCHGRASS (PANICUM VGATUM)	10
JOE PYE WEED (EUPATORIUM FISTULOSUM)	5
YELLOW FLAG IRIS (IRIL VERSICOLOR)	5
RICEGRASS (LEERSIA ORYZOIDES)	5

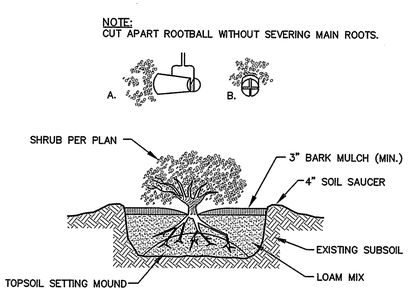
APPLICATION RATE = 60 lbs. / ACRE



BALL and BURLAP

SHRUB and GROUNDCOVER PLANTING DETAIL

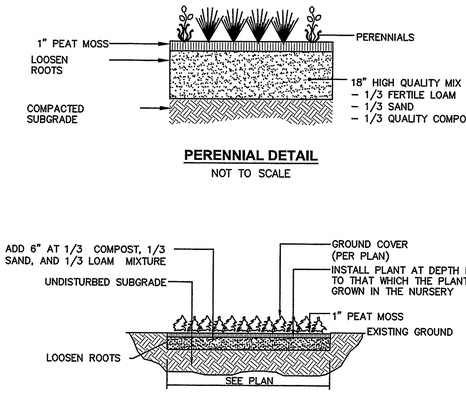
NOT TO SCALE



REMOVE CONTAINER AND BUTTERFLY ROOTBALL TO SPREAD ROOTS OVER SETTING MOUND. PLANT SHRUBS 1"-2" ABOVE EXISTING GRADE.

CONTAINER GROWN PLANTING DETAIL

NOT TO SCALE



PERENNIAL DETAIL

NOT TO SCALE

PERENNIAL and GROUNDCOVER PLANTING DETAIL

NOT TO SCALE

LANDSCAPE CONSTRUCTION NOTES

1. FURNISH AND INSTALL ALL PLANTS SHOWN ON THE DRAWINGS SPECIFIED HEREIN. CHANGES ALLOWED WITH QUANTITIES LISTED ON THE PLANT LIST. NO SUBSTITUTIONS WILL BE PERMITTED UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.
2. LOAM TO BE SCREENED, GOOD QUALITY, FERTILE, FREE OF WEEDS, STICKS, STONES OVER 3/4", AND ROOTS. SPREAD TO A MINIMUM OF 4" OVER ALL PLANTED AREAS.
3. BIO-DETENTION AREAS-PLANTING SOIL AND MULCH:
   LOAMY SAND TO A SANDY LOAM-80% SAND <20% SILT, <2% CLAY. WELL AGED GRADED COMPOST (25% OF SOIL MIX). WELL AGED, AERATED DARK BROWN HARD-WOOD MULCH (AGED 6 MONTHS).
4. NURSERY STOCK SHALL MEET THE STANDARDS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION AS TO GRADING AND QUALITY.
5. ONLY NURSERY-GROWN PLANTS, GROWN IN ACCORDANCE WITH ACCEPTED HORTICULTURAL PRACTICES, AND GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST TWO (2) YEARS, WILL BE ACCEPTED.
6. SET PLANTS PLUMB AND AT A LEVEL THAT AFTER SETTLEMENT THEY BEAR THE SAME RELATION TO THE SURROUNDING GROUND AS THEY BORE TO THE GROUND FROM WHICH THEY WERE DUG. SETTLE BACKFILL MATERIAL FOR PLANTS, THOROUGHLY AND PROPERLY BY FIRMING OR TAMPING. FORM SAUCERS, CAPABLE OF HOLDING WATER ABOUT INDIVIDUAL PLANTS, BY PLACING RIDGES OF PLANTING SOIL AROUND EACH.
7. STAKE ALL TREES OVER 5 FEET AS SHOWN ON PLANS. REMOVE STAKES AT THE END OF THE GUARANTEE PERIOD.
8. WATERING: WATER ALL PLANTS WITHIN 48 HOURS AFTER PLANTING. IF CONDITIONS WARRANT, AND AS MANY TIMES THEREAFTER TO SUSTAIN HEALTHY CONDITIONS UNTIL LANDSCAPE INSTALLATION IS COMPLETED. SATURATE THE SOIL AROUND EACH PLANT THOROUGHLY AT EACH WATERING.
9. PRUNING: PRUNE PLANTS, AS DIRECTED BY OWNER, AT THE PROJECT SITE BEFORE OR IMMEDIATELY AFTER PLANTING IN ACCORDANCE WITH THE BEST HORTICULTURAL PRACTICE. CUT BROKEN, DEAD OR INJURED BRANCHES IMMEDIATELY ABOVE THE STEM COLLAR ON THE TRUNK OR LIMB. PRUNE ALL BROKEN ROOTS ON THE PLANT SIDE OF THE BREAK. PAINT CUTS OVER 3/4" IN DIAMETER WITH TREE WOUND PAINT. PRUNING SHALL NOT DEFORM OR OTHERWISE DESTROY THE TYPICAL SHAPE OR SYMMETRY OF THE PLANT, AND SHALL NOT REDUCE THE HEIGHT BY MORE THAN ONE-THIRD. DO NOT CUT BACK THE LEADER OF THE PLANT UNLESS DIRECTED BY THE LANDSCAPE ARCHITECT.
10. FERTILIZING: FERTILIZE SHRUB BEDS WITH 10-6-4 FERTILIZER BROADCAST AT A RATE OF THREE POUNDS PER 100 SQUARE FEET OF SURFACE AREA BROADCAST. APPLY THE FERTILIZER UNIFORMLY TO THE SURFACE BEDS AND WORK INTO THE UPPER TWO INCHES OF SOIL. FERTILIZE INDIVIDUAL TREES AT A RATE OF ONE AGRIFORM PELLET PER INCH OF TRUNK DIAMETER (FOLLOW MANUFACTURER'S WRITTEN INSTRUCTIONS). APPLY A SECOND APPLICATION OF FERTILIZER TO ALL PLANT ITEMS AT THE SAME SPECIFIED RATES OVER THE MULCH AT THE END OF AN EIGHT WEEK PERIOD.
11. LIMING: ADD POWDERED LIME EVERY SIX MONTHS - OR SLOW RELEASE GRANULAR LIME-AS PER MANUFACTURER'S INSTRUCTION.
12. MULCHING: WITHIN A 72 HOUR PERIOD AFTER PLANTING, COVER ALL PLANTED AREAS WITH 3" DARK HEMLOCK MULCH. NO RED OR DYED MULCH IS TO BE USED. MULCH SHOULD BE PULLED ONE INCH AWAY FROM PLANT TRUNK OR STEM, AND NOT ALLOWED TO REST DIRECTLY AGAINST THE TRUNK OR STEM.
13. GUARANTEE: ALL PLANTS FURNISHED BY THE CONTRACTOR SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER PRELIMINARY INSPECTION AND SHALL BE ALIVE AND IN SATISFACTORY GROWTH AT THE END OF THE GUARANTEE PERIOD. ALL DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED AT ONCE BY THE CONTRACTOR, FREE OF CHARGE.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER
DATED OCT 2 7 2015
FILE # 14-0166
APPROVED PLANS MUST BE KEPT ON SITE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA 16046

DRAWING TITLE:

LANDSCAPE DETAIL PLAN

DATE:	SCALE:
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-L02-LNDET-R6.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
3	WATER SERVICE	03/05/15
4	CONSERVATION EASEMENT	03/31/15
5	REVISED LAYOUT	08/19/15
6	R.I.D.E.M. SUBMITTAL	09/01/15

SEP 16 2015

DRAWING NUMBER

L2

SHEET: 44 OF: 49

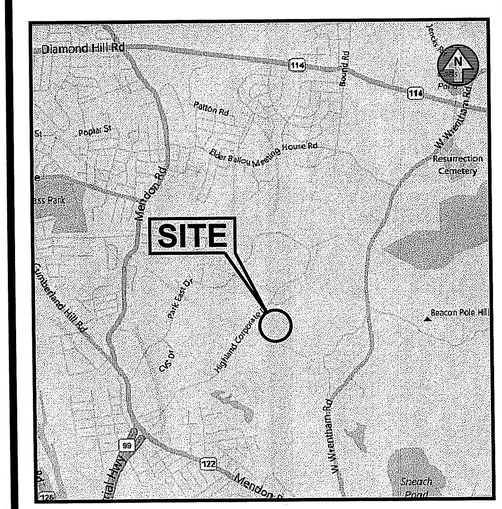
SITE PLAN SET
FOR
MAJOR LAND DEVELOPMENT PROJECT

HIGHLAND HILLS

PLAT MAP 51, LOT 11

ZONING DISTRICTS:
A-2 AGRICULTURAL MEDIUM DENSITY and ONE-HOUSEHOLD
I-1 LIGHT INDUSTRIAL
OS-OPEN SPACE
R-3 MULTI-HOUSEHOLD DWELLING

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND



LOCATION MAP
NOT TO SCALE

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REVISIONS:

No.:	DATE:	DESCRIPTION:
1	09/10/14	R.I.D.E.M. SUBMITTAL
2	11/10/14	R.I.D.E.M. COMMENTS

OWNER
HIGHLAND HILLS, LLC
177 OLD RIVER ROAD
LINCOLN, RI 02865

ENGINEERS and LAND SURVEYORS

- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

CROSSMAN ENGINEERING

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED
AS SPECIFIED IN THE ATTACHED APPROVAL
DATED DEC 22 2014 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
NOV 12 2014

STEVEN M. CABRAL
No 4847
REGISTERED PROFESSIONAL ENGINEER
11-10-14

AUGUST 2014
SHEET 1 of 44

R.I.D.E.M. COPY

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES, BOTH UNDERGROUND AND OVERHEAD, BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH "DIG SAFE PROGRAM LAW" ENACTED BY THE R.I. LEGISLATURE AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY CITY, STATE OR FEDERAL AGENCY THAT MAY APPLY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

2. SPECIFICATIONS TO GOVERN THIS PROJECT ARE R.I.D.O.T. STANDARD INSTALLATION, SPECIFICATIONS AND DETAILS. FOR ALL EXCAVATION, PLACEMENT OF FILL, PIPE BITUMINOUS PAVEMENT, CUTTING INTO CATCHBASIN/MANHOLES, CONCRETE AND SAWCUTTING, THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010 EDITION, WITH LATEST REVISIONS UNLESS OTHERWISE SHOWN ON PLANS. THE "METHOD OF MEASUREMENT" AND "BASIS OF PAYMENT" ARE NOT APPLICABLE. THESE SPECIFICATIONS CAN BE OBTAINED ON-LINE AT:

   HTTP://WWW.DOT.STATE.RI.US/ENGINEERING/STANDARDS/INDEX.ASP

3. FOR ALL EXCAVATION AND PLACEMENT OF FILL, THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE R.I. STANDARD SPECIFICATION SECTION 202.

4. RHODE ISLAND STANDARDS REFERENCED ARE ACCORDING TO THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS "RHODE ISLAND STANDARD DETAILS" OCT. 12, 2012, LATEST REVISIONS, PREPARED BY THE DEPARTMENT OF TRANSPORTATION.

5. THE CONTRACTOR MUST VERIFY PRIOR TO CONSTRUCTION THAT ALL REQUIRED AUTHORIZATION TO PERFORM WORK HAS BEEN OBTAINED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION OPERATIONS INCLUDING ALL ACTIONS OR OMISSIONS OF ANY SUBCONTRACTORS, AGENTS OR EMPLOYEES. THE CONTRACTOR MUST ENSURE THAT THE CONDITIONS OF ALL PERMITS, SPECIFICATIONS AND FEDERAL, STATE AND LOCAL REGULATIONS ARE STRICTLY ENFORCED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ASPECTS OF ON-SITE SAFETY INCLUDING ANY DAMAGE TO EXISTING STRUCTURES.

6. WORK SHOWN ON THE PLANS FOR WHICH THERE ARE NO PARTICULAR DETAILS OR SPECIFICATIONS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THE WORK. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS AND PLANS AND INSPECT THE SITE, AND THE BID PRICE SHALL INCLUDE ALL SERVICES AND MATERIALS NECESSARY TO COMPLETE THE PROJECT. ANY CHANGES TO THE PROJECT OR THE INSTALLATION OF AN ITEM FOR WHICH NO PARTICULAR DETAIL OR SPECIFICATION WAS PROVIDED MUST BE REVIEWED BY AND MUST BE ACCEPTABLE TO THE ENGINEER.

7. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY WORK.

8. ALL DISTURBED AREAS SHALL BE REPLACED IN KIND UNLESS OTHERWISE SHOWN.

LAYOUT NOTE

THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO THE CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEM FOUND WHICH DOES NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING POLICE PROTECTION. ALL TEMPORARY CONSTRUCTION SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)

2. TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.

3. THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS WILL NOT BE PARKED IN THE ROADWAY RIGHT-OF-WAY.

4. ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS, CHANNELING DEVICES, ETC., SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2003 EDITION, LATEST REVISIONS.

5. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE STATE D.O.T. SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

CONSTRUCTION NOTES

1. THE CONTRACTOR IS REQUIRED TO OBTAIN AND REVIEW ALL ENGINEERING DOCUMENTS COMPLETED FOR FINAL DESIGN.

2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO INSTALLATION OF UTILITIES ON SITE. THE COORDINATION IS NECESSARY FOR THE ENGINEER TO SCHEDULE SITE INSPECTIONS AS REQUIRED.

3. THE CONTRACTOR IS REQUIRED TO MAINTAIN DETAILED AS-BUILT INFORMATION FOR ALL UTILITY INSTALLATION. AS-BUILT INFORMATION INCLUDES MATERIAL LIST, PIPE DEPTH NOTATIONS AND SWING TIE LOCATIONS (2 MINIMUM) FROM NEW PIPE TO PERMANENT STRUCTURES. ALL PIPE BEND/ELBOW LOCATIONS SHALL BE DIMENSIONED.

FLOOD ZONE NOTE

THE SITE IS WITHIN FLOOD ZONE X, AREAS TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN, ACCORDING TO FLOOD INSURANCE RATE MAP, PROVIDENCE COUNTY, RHODE ISLAND, PANEL 177 OF 451, MAP NUMBER 44007C 0177G, EFFECTIVE DATE MARCH 2, 2009.

MAP REFERENCE

REFERENCE IS MADE TO THE PLAN SET ENTITLED "HIGHLAND II URBAN COLLECTOR, STATION 18+00 TO STATION 116+04 (STA. 37A+47.67 PARK EAST DRIVE), TOWN OF CUMBERLAND AND CITY OF WOONSOCKET, COUNTY OF PROVIDENCE." R.I. CONTRACT NO. 9450 DATE LAST REVISED: JULY 20, 1994, SHEETS 1-221, PREPARED BY CROSSMAN ENGINEERING INC.

PROPOSED PAVEMENT STRUCTURE

1 1/2" BITUMINOUS CONCRETE SURFACE COURSE, CLASS I-1
2 1/2" BITUMINOUS CONCRETE BASE COURSE
8" GRAVEL BORROW SUBBASE

UTILITY NOTES

1. PRIOR TO ANY UTILITY CONSTRUCTION, THE CONTRACTOR MUST PERFORM ADDITIONAL TESTS TO:
   A. CONFIRM THE EXISTING DEPTHS OF UTILITIES AT ALL PROPOSED CONNECTION POINTS AND POTENTIAL CROSSOVER (CONFLICT) POINTS.
   B. CONFIRM THE EXTENT OF LEDGE WHICH MAY EXIST IN ALL ANTICIPATED UTILITY TRENCH AREAS. PRIOR TO CONSTRUCTION, THE FINDINGS ARE TO BE REVIEWED BY THE OWNER AND THE ENGINEER. IF NECESSARY, ALTERNATIVES TO MINIMIZE LEDGE REMOVAL AND UTILITY CONFLICTS WILL BE DEVELOPED. NO CONSTRUCTION WILL BE ALLOWED WITHOUT THE OWNER'S AUTHORIZATION.
   C. THE CONTRACTOR SHALL DIG TEST HOLES TO VERIFY THE ELEVATIONS AND PIPE MATERIAL OF THE EXISTING WATER, GAS AND SANITARY SERVICES AT THE PROPOSED TIE-IN LOCATION.
2. ANY MODIFICATIONS TO THE PROPOSED UTILITIES TO AVOID CONFLICTS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. NO EXTRA PAYMENT TO THE CONTRACTOR DUE TO RELOCATIONS WILL BE AUTHORIZED.
3. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO TIE-IN.
4. THIS UTILITY PLAN DOES NOT REPRESENT THE SITE ELECTRICAL/TELEPHONE/COMMUNICATION SYSTEM DESIGNS AND DOES NOT REPRESENT IRRIGATION PIPING. CONTRACTOR SHALL COORDINATE WITH OWNER TO VERIFY IRRIGATION PIPING REQUIREMENTS.
5. THE CONTRACTOR MUST LOCATE THE EXISTING WATER MAIN TO OBTAIN THE PROPER OUTSIDE DIAMETER TO SIZE THE SLEEVE.
6. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL UTILITY PIPE SIZES INCLUDING WATER, SEWER AND GAS ARE VERIFIED BY THE ARCHITECT PRIOR TO ORDERING PIPE OR RELATED MATERIAL.

STORMWATER SYSTEM MAINTENANCE SCHEDULE

1. CATCH BASINS, MANHOLES AND DRAIN LINES:

   AN INSPECTION MUST OCCUR ON AN ANNUAL BASIS BY QUALIFIED PERSONNEL TO ENSURE PROPER OPERATION. THE INSPECTION SHOULD, AS A MINIMUM, CONCENTRATE ON THE FOLLOWING:

   - DAMAGE TO GRATES/COVERS
   - EVIDENCE OF STANDING WATER
   - DEBRIS REMOVAL
   - STRUCTURAL ALIGNMENT/INTEGRITY

   ANY DEFICIENCY NOTED DURING THE INSPECTION WILL BE IMMEDIATELY REPAIRED OR REPLACED.

2. SEDIMENT REMOVAL:

   FOLLOWING CONSTRUCTION, THE CATCH BASINS AND DRAIN LINES WITHIN THE PROJECT LIMITS ARE TO BE CLEANED OF ACCUMULATED SEDIMENT AS REQUIRED. ALL REMOVED SEDIMENT IS TO BE TESTED TO DETERMINE POLLUTANT CONTENT. THE SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS BASED UPON THE TEST RESULTS AND LOCAL, STATE AND FEDERAL REGULATIONS.

3. UNDERGROUND INFILTRATION SYSTEM:

   THE UNDERGROUND INFILTRATION SYSTEM SHALL BE INSPECTED ANNUALLY AND AFTER STORMS EQUAL TO OR GREATER THAN THE 1-YEAR, 24 HOUR TYPE III STORM EVENT (2.7 INCHES IN 24 HOURS). INSPECT THE INLET PIPES AND OUTLET PIPES FOR CLOGGING. REMOVE ACCUMULATED SEDIMENT, TRASH AND DEBRIS. INSPECT SYSTEM AND OUTLET STRUCTURE FOR STRUCTURAL INTEGRITY AND STANDING WATER. INSPECT PAVEMENT AREA OVER SYSTEM FOR SETTLEMENT.

SOIL SURVEY NOTE

ACCORDING TO THE SOIL SURVEY OF RHODE ISLAND, SOILS WITHIN THE SITE'S PROPOSED IMPROVEMENTS ARE IDENTIFIED AS:
CaC-CANTON FINE SANDY LOAM, 8 TO 15% SLOPES
ChB-CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
ChD-CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES

THESE SOILS ARE SUITABLE FOR COMMUNITY DEVELOPMENT.

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	EASEMENT LINE	
	CURB	
	BITUMINOUS BERM	
	POROUS PAVEMENT	
-O- NO.	UTILITY POLE	-●- NO.
☼ LP	LIGHT POLE	
----(Size) D----	DRAIN LINE	----(SIZE) D----
----(Size) S----	SANITARY SEWER	----(SIZE) S----
	SANITARY FORCE MAIN	----(SIZE) SFM----
----(Size) G----	GAS LINE	----(SIZE) G----
----6"W----	DOMESTIC WATER LINE	----(SIZE) W----
----8"W----	FIRE SERVICE LINE	----(SIZE) FS----
----Elec----	ELECTRIC/CABLE/TELEPHONE	----E/C----
(D) DMH	DRAINAGE MANHOLE	● DMH
▦ CB	CATCH BASIN	■ CB
(S) SMH	SEWER MANHOLE	● SMH
(E) EMH	ELECTRIC MANHOLE	● EMH
(T) TMH	TELEPHONE MANHOLE	
Hyd.	HYDRANT	HYD.
	REMOTE FIRE DEPARTMENT CONNECTION	
○ WG	WATER GATE	●WG
○ GG	GAS GATE	●GG
○ CO	CLEAN-OUT TO GRADE	●CO
	SAWCUT PAVEMENT	
----XXX----	CONTOURS	ELEV.
X ELEV.	SPOT GRADES	00x0
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	RETAINING WALL	
	STONE WALL	
	GUARDRAIL	
	GRADE TO DRAIN	
(Size)	TREE LINE	
	TREE	
	WETLAND FLAG	
	WETLAND EDGE	
	WETLAND BUFFER	
TP14-1	TEXT PIT	
P-4	SOIL BORING/PROBE	
Bollard	BOLLARDS	●BOLLARD
	LIMIT OF DISTURBANCE	
	FILTER SOXX	

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
AS SUBMITTED FILE # 14-0166
DATED DEC 22 2014
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

NOV 12 2014

SOIL EVALUATION DATA

SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING ON SEPTEMBER 4, 2014.

TEST PIT 14-1

0"	--	OI
2"	Dark Brown Fine Sandy Loam	A (Friable)
4"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
13"	Yellowish Brown Very Fine Sandy Loam	Bw2 (Friable)
24"	Light Olive Brown Stony Gravelly Fine Sand	C1 (Firm/Friable)
72"	Olive Brown Gravelly Very Fine Sand	C2 (Firm/Friable)
120"		

NO REFUSAL
NO WATER SEEPAGE
72" REDOX FEATURES
ESHWT=72"

TEST PIT 14-2

0"	--	OI
2"	Dark Brown Very Fine Sandy Loam	A (Friable)
5"	Yellowish Brown Very Fine Sandy Loam	Bw1 (Friable)
16"	Yellowish Brown Stony Very Fine Sandy Loam	Bw2 (Friable)
32"	Light Yellowish Brown Stony Gravelly Sand	C1 (Firm/Friable)
95"	Light Yellowish Brown Cobbly Gravelly Fine Sand	C2 (Friable)
134"		

NO REFUSAL
NO WATER SEEPAGE
72" REDOX FEATURES
ESHWT=95"

TEST PIT 14-3

0"	--	OI
3"	Dark Brown Fine Sandy Loam	A (Friable)
7"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
18"	Yellowish Brown Stony Fine Sandy Loam	Bw2 (Friable)
32"	Light Yellowish Brown Stony Gravly Fine Sandy Loam	C1 (Firm/Friable)
84"		

84" LIMITING LAYER
NO WATER SEEPAGE
NO REDOX FEATURES
DESIGN GWT > 84"

TEST PIT 14-4

0"	--	OI
3"	Dark Brown Fine Sandy Loam	A (Friable)
6"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
17"	Yellowish Brown Stony Fine Sandy Loam	Bw2 (Friable)
31"	Light Yellowish Brown Stony Cobbly Fine Sandy Loam	C1 (Firm/Friable)
90"		

90" LIMITING LAYER
NO WATER SEEPAGE
NO REDOX FEATURES
DESIGN GWT > 90"

TEST PIT 14-5

0"	--	OI
2"	Dark Brown Fine Sandy Loam	A (Friable)
4"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
12"	Yellowish Brown Stony Fine Sandy Loam	Bw2 (Firm/Friable)
26"	Light Yellowish Brown Stony Cobbly Gravelly Loamy Sand	C1 (Firm/Friable)
80"		

80" LIMITING LAYER
NO WATER SEEPAGE
NO REDOX FEATURES
DESIGN GWT > 80"

TEST PIT 14-6

0"	--	OI
2"	Dark Brown Fine Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
17"	Yellowish Brown Stony Fine Sandy Loam	Bw2 (Friable)
43"	Light Yellowish Brown Stony Cobbly Gravelly Loamy Sand	C1 (Firm/Friable)
102"		

102" LIMITING LAYER
NO WATER SEEPAGE
NO REDOX FEATURES
DESIGN GWT > 102"

TEST PIT 14-7

0"	--	OI
2"	Dark Brown Fine Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
14"	Yellowish Brown Stony Fine Sandy Loam	Bw2 (Friable)
36"	Light Yellowish Brown Stony Cobbly Fine Sandy Loam	C1 (Firm/Friable)
54"	Light Yellowish Brown, Very Stony, Very Cobbly Gravelly Loamy Sand	C2 (Firm)
101"		

101" LIMITING LAYER
NO WATER SEEPAGE
NO REDOX FEATURES
DESIGN GWT > 101"

TEST PIT 14-8

0"	--	OI
3"	Dark Brown Fine Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
14"	Yellowish Brown Stony Fine Sandy Loam	Bw2 (Friable)
40"	Light Yellowish Brown Stony Gravely Loamy Sand	C1 (Firm/Friable)
117"		

117" LIMITING LAYER
NO WATER SEEPAGE
NO REDOX FEATURES
DESIGN GWT > 117"

TEST PIT 14-9

0"	--	OI
3"	Dark Brown Fine Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Fine Sandy Loam	Bw1 (Friable)
13"	Yellowish Brown Stony Fine Sandy Loam	Bw2 (Friable)
29"	Light Yellowish Brown Stony Cobbly Loamy Sand	C1 (Firm/Friable)
110"		

110" LIMITING LAYER
NO WATER SEEPAGE
NO REDOX FEATURES
DESIGN GWT > 110"

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CROSSMAN ENGINEERING

Rhode Island
151 Centerville Road
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JOHN M. CABRAL
4847
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GENERAL NOTES and LEGEND

DATE:	*SCALE:*
AUGUST 2014	NO SCALE

DWG. NAME: 2035-C01-NOTES-R2.dwg

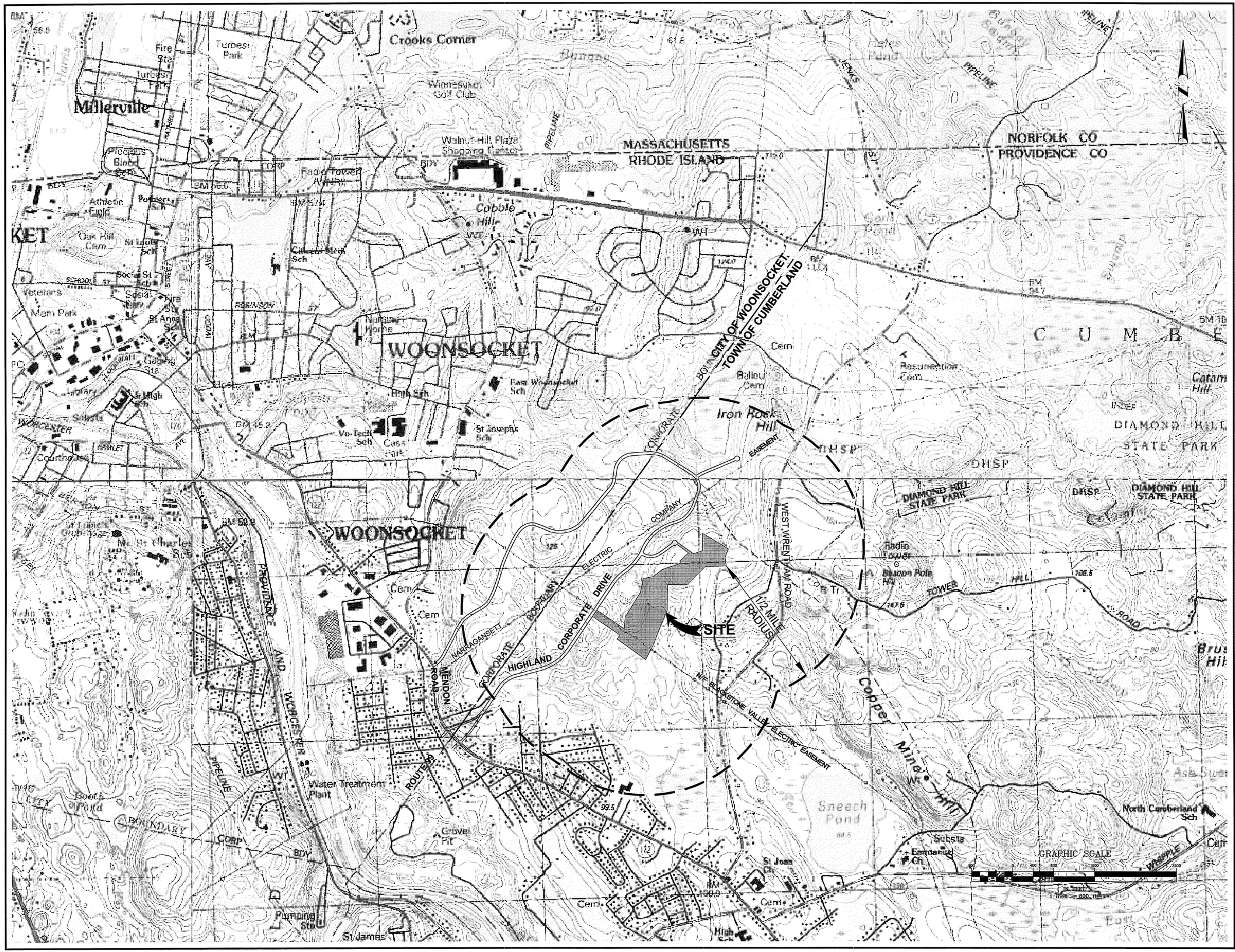
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C1

SHEET: 2 *OF:* 44



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KEY PLAN

JOHN M. CABRAL
4847
11-10-14
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1, OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

NOV 12 2014

DRAWING TITLE:

VICINITY MAP

DATE:	SCALE:
AUGUST 2014	1"=800'

DWG. NAME: 2035-C02-VICINITY-R2.dwg

REVISIONS

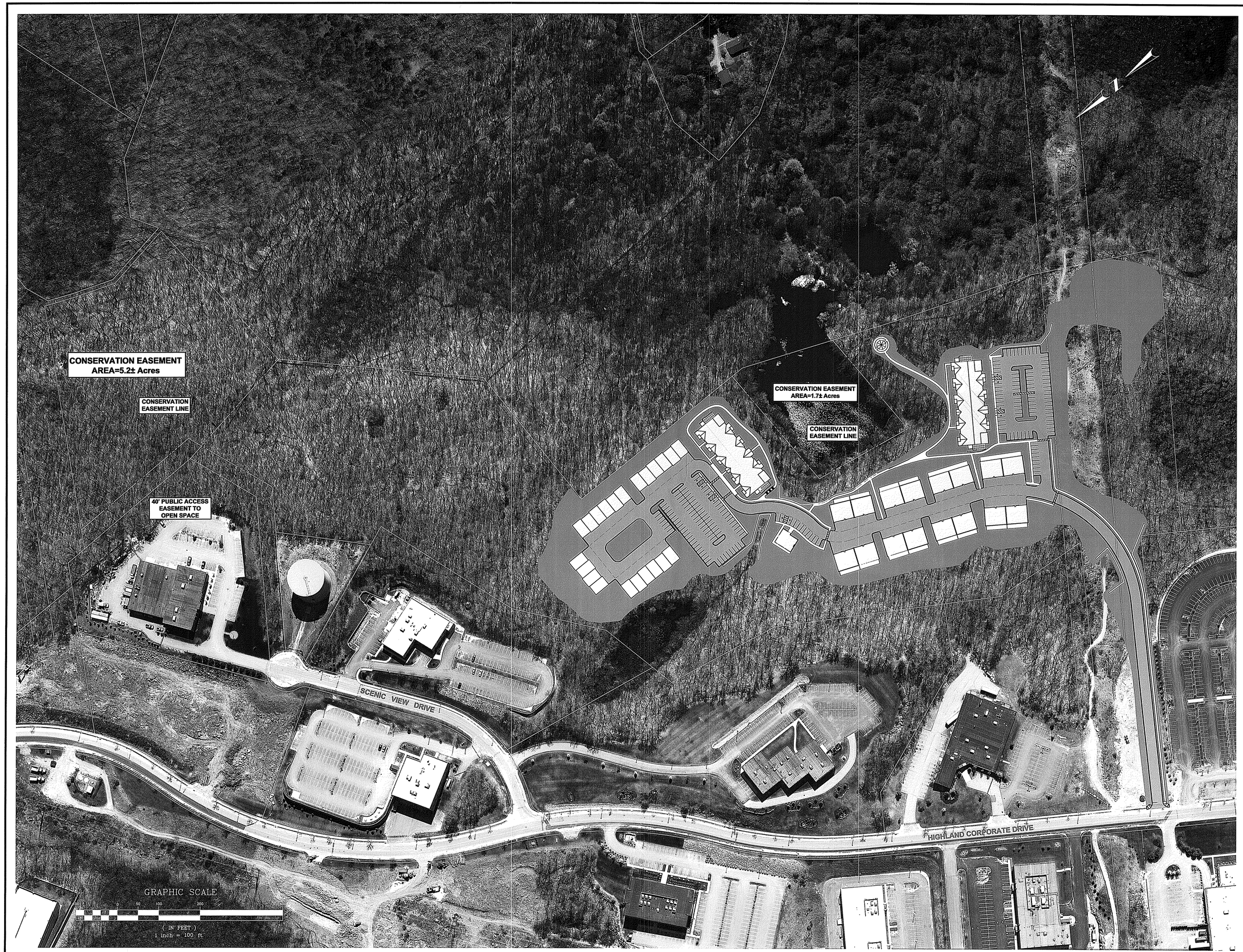
NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPLICATION NO. 14-0166
DATE DEC 22 2014
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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DRAWING NUMBER

C2

SHEET: 3 OF: 44



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KEY PLAN

M. CABRAL 4847 REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1, OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

NOV 2 2 2014

DRAWING TITLE:

AERIAL PHOTOGRAPH

DATE:	*SCALE:*
AUGUST 2014	1"=100

DWG. NAME: 2035-C03-AERIAL-R2.dwg

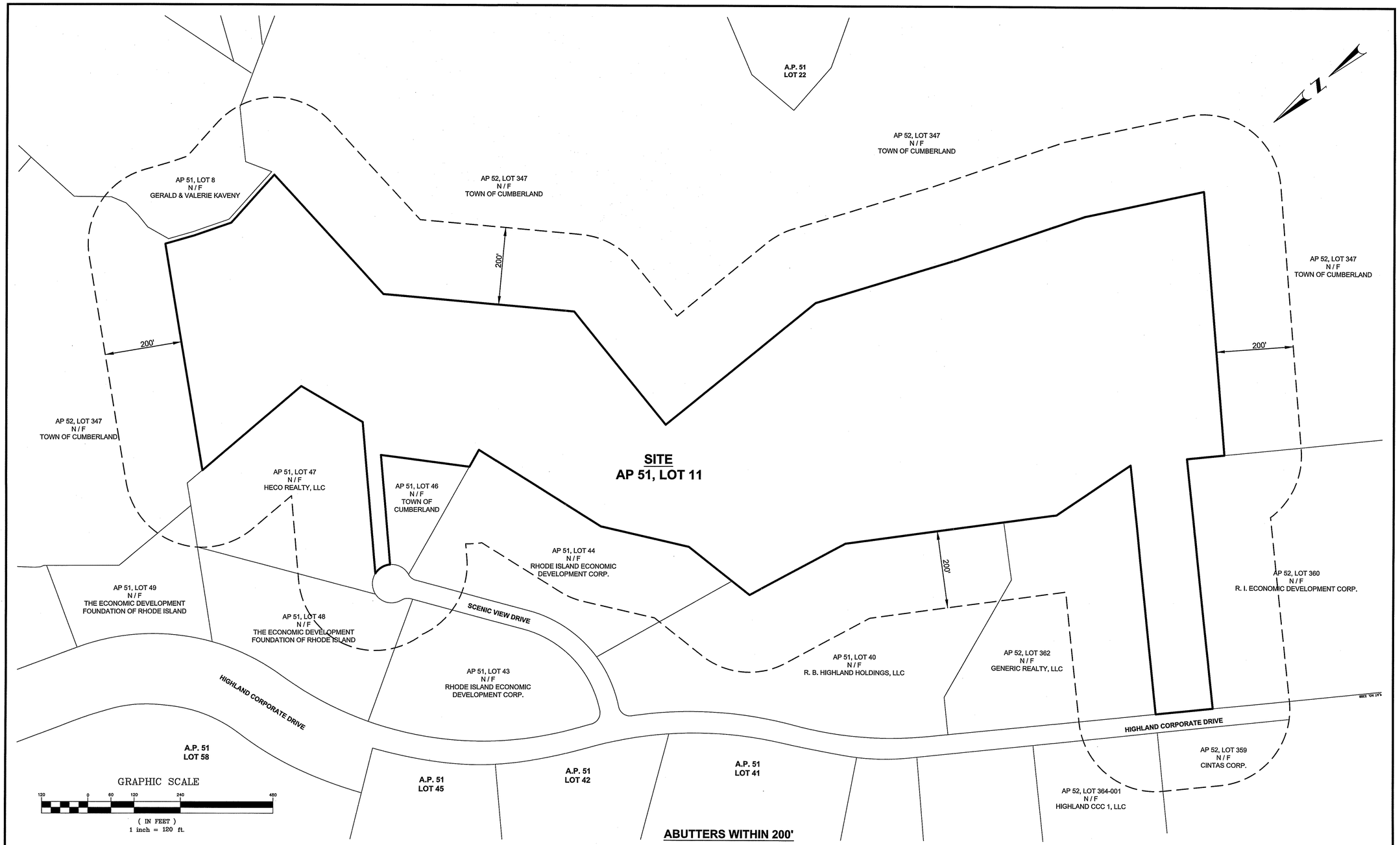
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14
DEC 22 2014		14-0166
Charles A Harbert		

DRAWING NUMBER

C3

SHEET: 4 *OF:* 44



ABUTTERS WITHIN 200'

PLAT 51 LOT 11
HIGHLAND HILLS, LLC
177 OLD RIVER ROAD
LINCOLN, RI 02865

PLAT 51 LOT 8
GERALD & VALERIE KAVENY
152 W. WRENTHAM ROAD
CUMBERLAND, RI 02864

PLAT 51 LOT 40
R. B. HIGHLAND HOLDINGS, LLC
200 SCENIC VIEW DRIVE
CUMBERLAND, RI 02864

PLAT 51 LOT 43 AND 44
RHODE ISLAND ECONOMIC
DEVELOPMENT CORP.
C/O CVS PHARMACY, INC.
ONE CVS DRIVE
WOONSOCKET, RI 02895

PLAT 51 LOT 46
TOWN OF CUMBERLAND
45 BROAD STREET
CUMBERLAND, RI 02864

PLAT 51 LOT 47
HECO REALTY, LLC
800 SCENIC VIEW DRIVE
CUMBERLAND, RI 02864

PLAT 51 LOT 48
THE ECONOMIC DEVELOPMENT
FOUNDATION OF RHODE ISLAND
1300 HIGHLAND CORPORATE DRIVE
CUMBERLAND, RI 02864

PLAT 51 LOT 49
THE ECONOMIC DEVELOPMENT
FOUNDATION OF RHODE ISLAND
1300 HIGHLAND CORPORATE DRIVE
CUMBERLAND, RI 02864

PLAT 52 LOT 347
TOWN OF CUMBERLAND
45 BROAD STREET
CUMBERLAND, RI 02864

PLAT 52 LOT 359
CINTAS CORPORATION
ATTN: ACCOUNTING ASST. 90C
6800 CINTAS BOULEVARD
MASON, OH 45040

PLAT 52 LOT 360
RHODE ISLAND ECONOMIC
DEVELOPMENT CORP.
C/O CVS PHARMACY, INC.
ONE CVS DRIVE
WOONSOCKET, RI 02895

PLAT 52 LOT 362
GENERIC REALTY, LLC
400 HIGHLAND CORPORATE DRIVE
CUMBERLAND, RI 02864

PLAT 52 LOT 364-001
HIGHLAND CCC 1, LLC
1300 HIGHLAND CORPORATE DRIVE
SUITE 202
CUMBERLAND, RI 02864

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED DEC 2 2014
FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A Horbert

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KEY PLAN

STEVEN M. CABRAL
No. 4847
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

200' ABUTTERS MAP

DATE:	*SCALE:*
AUGUST 2014	1"=120'

DWG. NAME: 2035-C04-RADIUS-R2.dwg

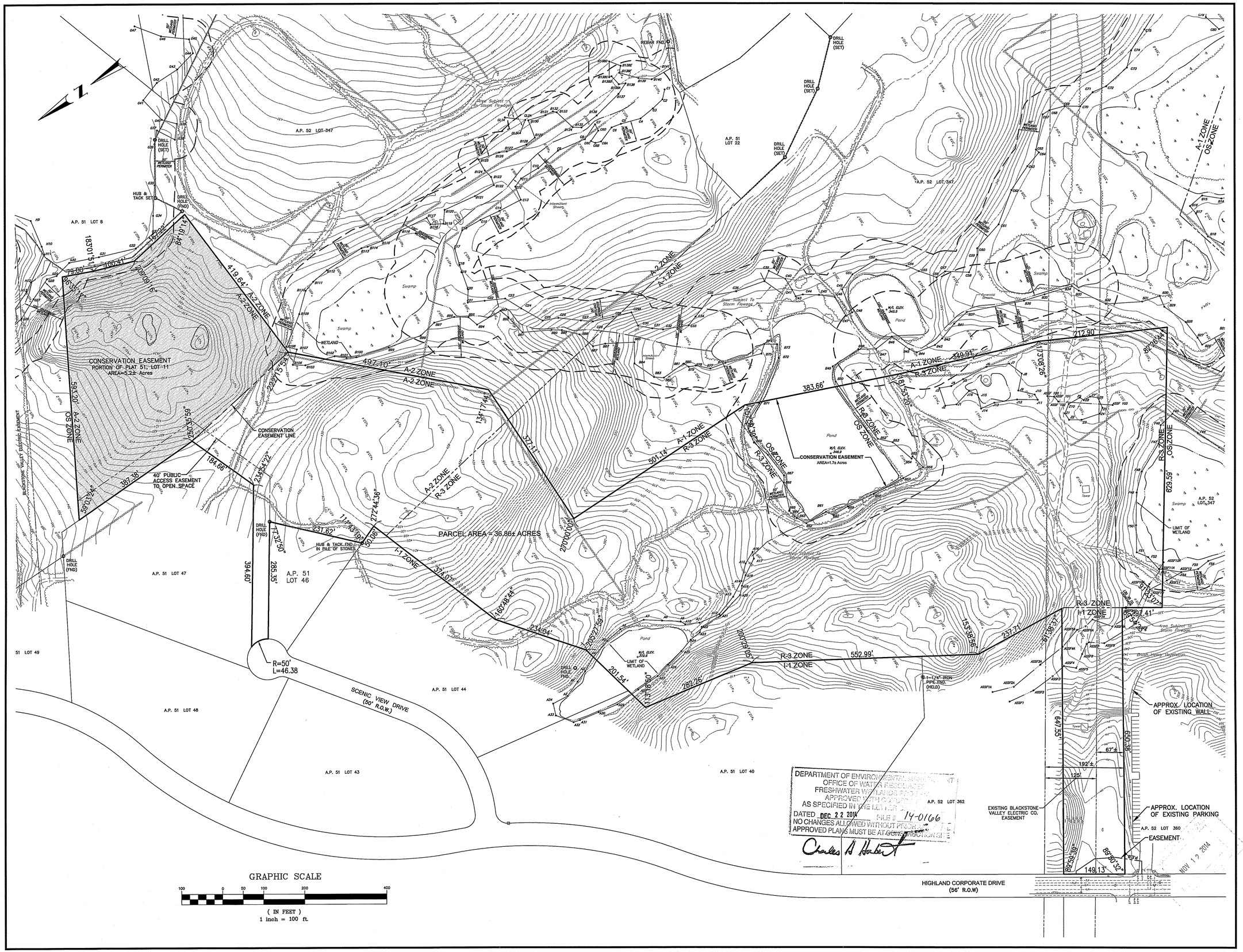
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C4

SHEET: 5 *OF:* 44



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED
DATED DEC 2 2 2014 FILE # 14-0166
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KEY PLAN

EN M. CABRAL
No. 4847
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

EXISTING CONDITIONS PLAN

DATE:	*SCALE:*
AUGUST 2014	1"=100'

DWG. NAME: 2035-C05-EXCN-R2.dwg

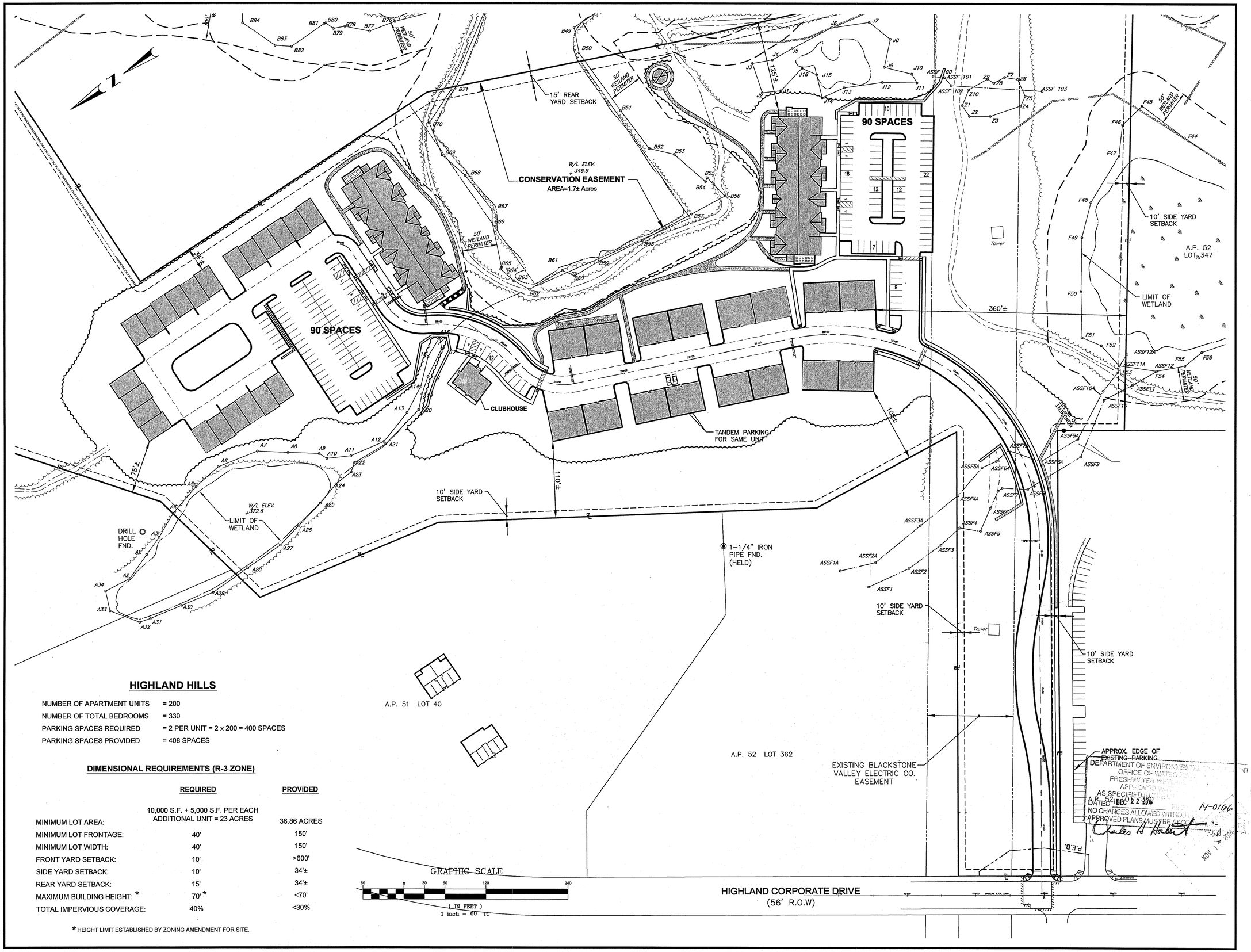
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C5

SHEET: 6 *OF:* 44



HIGHLAND HILLS

NUMBER OF APARTMENT UNITS	= 200
NUMBER OF TOTAL BEDROOMS	= 330
PARKING SPACES REQUIRED	= 2 PER UNIT = 2 x 200 = 400 SPACES
PARKING SPACES PROVIDED	= 408 SPACES

DIMENSIONAL REQUIREMENTS (R-3 ZONE)

	REQUIRED	PROVIDED
MINIMUM LOT AREA:	10,000 S.F. + 5,000 S.F. PER EACH ADDITIONAL UNIT = 23 ACRES	36.86 ACRES
MINIMUM LOT FRONTAGE:	40'	150'
MINIMUM LOT WIDTH:	40'	150'
FRONT YARD SETBACK:	10'	>600'
SIDE YARD SETBACK:	10'	34'±
REAR YARD SETBACK:	15'	34'±
MAXIMUM BUILDING HEIGHT: *	70' *	<70'
TOTAL IMPERVIOUS COVERAGE:	40%	<30%

* HEIGHT LIMIT ESTABLISHED BY ZONING AMENDMENT FOR SITE.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH
AS SPECIFIED LETTER
DATED DEC 22 2014
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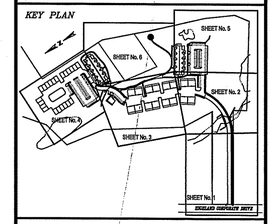
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

OVERALL SITE LAYOUT PLAN

DATE:	*SCALE:*
AUGUST 2014	1"=60'

DWG. NAME: 2035-C06.0-OVERALL-SITE-R2.dwg

REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C6.0

SHEET: 7 *OF:* 44

MATCH LINE TO SITE LAYOUT PLAN No. 2

A.P. 52 LOT 360

5' WIDE BITUMINOUS SIDEWALK
(R.I. STD. 43.2.0)

℄

15+00 14+00 13+00 12+00 11+00

25'

BITUMINOUS BERM
(R.I. STD. 7.5.1)

PC=13+19.37

PRECAST CONCRETE
CURB
(R.I. STD. 7.1.0)
(R=15', L=6.5'±)

MATCH EXISTING
CURB REVEAL

WHEELCHAIR RAMP
(R.I. STD. 43.3.0)
(TYP.)

BITUMINOUS BERM
(R.I. STD. 7.5.1)

12" WHITE
PAVEMENT
MARKING

STOP
R1-1
30"x30"

REMOVE AND DISPOSE
EXISTING CURB AND
CONCRETE SIDEWALK

P.E.B.

PRECAST CONCRETE CURB
(R.I. STD. 7.1.0)
(R=15', L=6.3'±)

SAWCUT AND MATCH
EXISTING PAVEMENT

10' FRONT YARD
SETBACK

Sidewalk

39+00

40+00

BASELINE S.H.P. 2386

41+00

42+00

HIGHLAND CORPORATE DRIVE
(56' R.O.W.)

CB

D

LOT

EXISTING BLACKSTONE VALLEY
ELECTRIC CO. EASEMENT

Tower

10' SIDE YARD
SETBACK

A.P. 52 LOT 362

A.P. 52 L

ASSF3

ASSF2

ASSF2A

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
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AS SPECIFIED IN PERMIT NO. 14-0166
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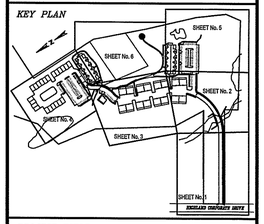
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N M. CABRAL
4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 1

DATE:	SCALE:
AUGUST	1"=20'

DWG. NAME: 2035-C06-SITE-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C6.1

SHEET: 8 OF: 44

MATCH LINE TO SITE LAYOUT PLAN No. 5

MATCH LINE TO SITE LAYOUT PLAN No. 3

MATCH LINE TO SITE LAYOUT PLAN No. 1

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

PATIO

PATIO

18' (TYP.)

25'

9' (TYP.)

4" WHITE PAVEMENT MARKING (TYP.)

15'±

20' (MIN.)

R=5'

20+00

25'

R=5'

R=15'

R=5'

19+00

R=15'

R=5'

3' GRASS STRIP

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

R=312'

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

3' GRASS STRIP

TYPICAL TANDEM PARKING FOR SAME UNIT

10' PATIO (TYP.)

PATIO

18+00

25'

105'±

R=287'

BITUMINOUS BERM (R.I. STD. 7.5.1)

17+00

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

BITUMINOUS BERM (R.I. STD. 7.5.1)

AREA SUBJECT TO STORM FLOWAGE

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

10' SIDE YARD SETBACK

10' SIDE YARD SETBACK

10' SIDE YARD SETBACK

LIMIT OF WETLAND

10' SIDE YARD SETBACK

16+00

BITUMINOUS BERM (R.I. STD. 7.5.1)

F50

F51

F52

F53

F54

ASSF12A

ASSF11A

ASSF12

ASSF11

ASSF10A

ASSF10

ASSF9A

ASSF9

ASSF8A

ASSF8

ASSF7A

ASSF7

ASSF6A

ASSF5A

ASSF4A

ASSF3A

ASSF4

ASSF5

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 22 2014 FILE # 14-0166
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NOV 12 2014

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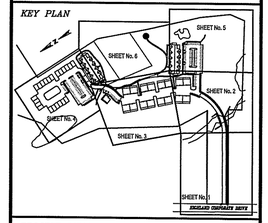
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JOHN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 2

DATE:	SCALE:
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C6.2

SHEET: 9 OF: 44

MATCH LINE TO SITE LAYOUT PLAN No. 6

MATCH LINE TO SITE LAYOUT PLAN No. 4

MATCH LINE TO SITE LAYOUT PLAN No. 2

R=50'

PRC 26+11

26+00

25'

CL2

CL3

CL4

B62

AREA SUBJECT TO STORM FLOWAGE

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

BITUMINOUS BERM (R.I. STD. 7.5.1)

3' GRASS STRIP

5' WIDE POROUS PAVEMENT SIDEWALK

POROUS PAVEMENT PATIO (TYP.)

A16

CL1

A17

A15

A18

R=163'

25+00

12

PRC=24+63.80

COMMUNITY BUILDING

R=68'

PATIO

PATIO

20'

23'±

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

20' (MIN.)

PC=23+74.79

24+00

23+00

25'

22+00

R=5' (TYP.)

21+00

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

4" WHITE PAVEMENT MARKING (TYP.)

5' WIDE CEMENT CONCRETE SIDEWALK (R.I. STD. 43.1.0)

BITUMINOUS BERM (R.I. STD. 7.5.1)

R=5' (TYP.)

TYPICAL TANDEM PARKING FOR SAME UNIT

20' (MIN.)

PT= 20+50.00

20'

20'

POROUS PAVEMENT PATIO (TYP.)

110'±

10' SIDE YARD SETBACK

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Charles A Horbert

NOV 12 2014

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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CROSSMAN ENGINEERING

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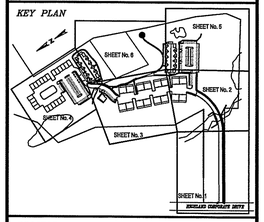
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EN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 3

DATE: AUGUST 2014

SCALE: 1"=20'

DWG. NAME: 2035-C06-SITE-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C6.3

SHEET: 10 *OF:* 44

N

15' REAR YARD SETBACK

34'±

BITUMINOUS BERM (R.I. STD. 7.5.1)

45'

20' (MIN.)

25'

5' WIDE POROUS PAVEMENT SIDEWALK

BITUMINOUS BERM (R.I. STD. 7.5.1)

R=15' (TYP.)

54'

R=10'

R=5' (TYP.)

R=35'

28+00

45 UNIT BUILDING

4" WHITE PAVEMENT MARKING (TYP.)

18' (TYP.)

WHEELCHAIR RAMP (R.I. STD. 43.3.0) (TYP.)

5' WIDE CEMENT CONCRETE SIDEWALK (R.I. STD. 43.1.0)

9' (TYP.)

4" WHITE PAVEMENT MARKING (TYP.)

5' WIDE CEMENT CONCRETE SIDEWALK (R.I. STD. 43.1.0)

3' GRASS STRIP

5' WIDE BITUMINOUS SIDEWALK (R.I. STD. 43.2.0)

PT=26+85.24

27+00

TYPICAL TANDEM PARKING FOR SAME UNIT

75'±

BITUMINOUS BERM (R.I. STD. 7.5.1)

BITUMINOUS BERM (R.I. STD. 7.5.1)

R=8'

R=8'

MATCH LINE TO SITE LAYOUT PLAN No. 6

MATCH LINE TO SITE LAYOUT PLAN No. 3

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A19 A20 A21 A22 A23 A24 A25 A26 A27 A30

10' SIDE YARD SETBACK

× W/L ELEV. 372.6

LIMIT OF WETLAND

MSE RETAINING WALL OR APPROVED EQUAL (TYP.)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF
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AS SPECIFIED IN
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14-0166
Charles A. Horbert

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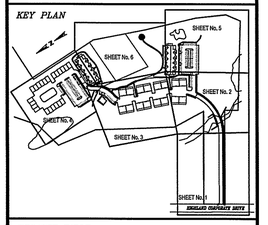
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R2.dwg

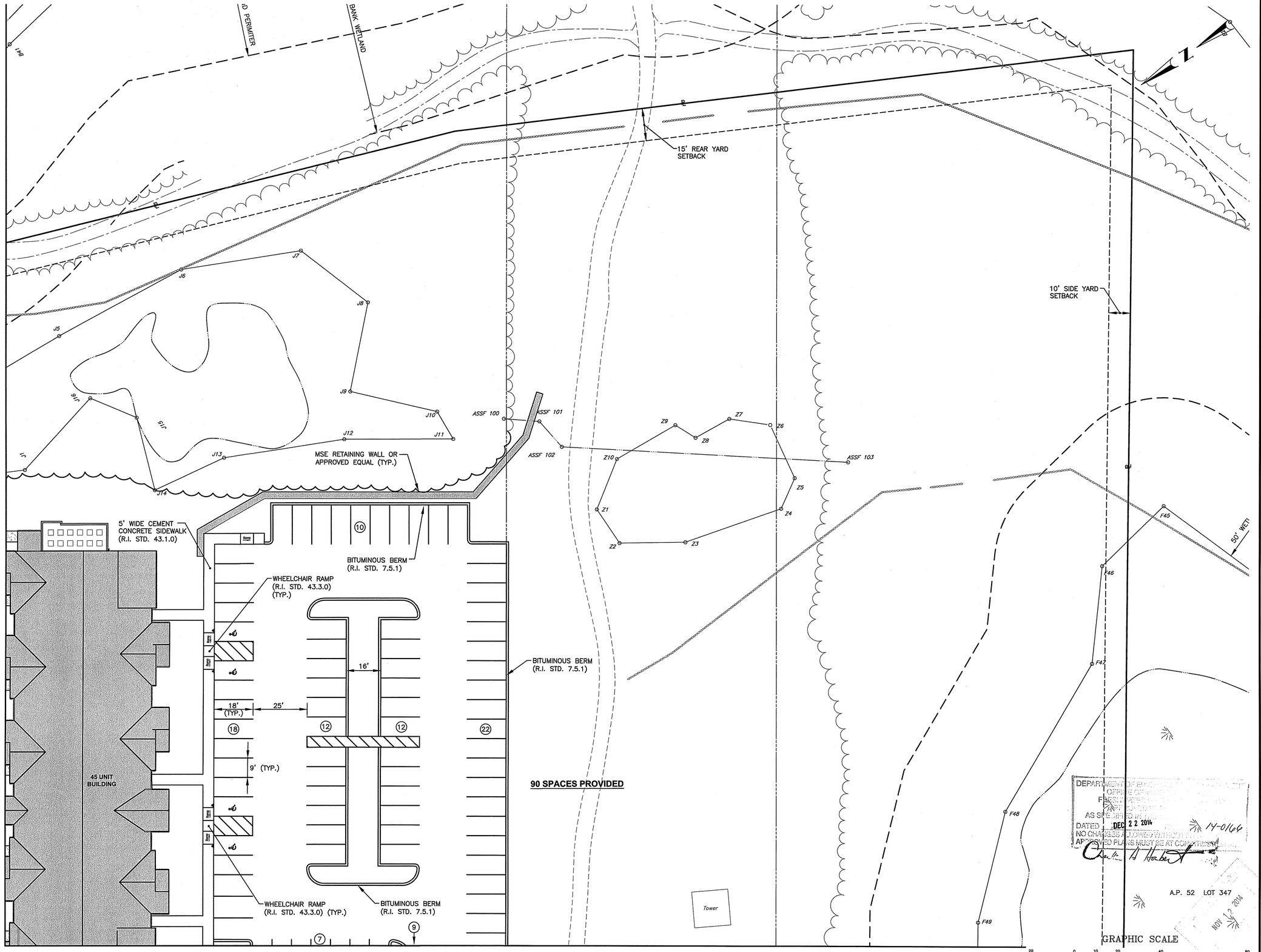
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C6.4

SHEET: 11 *OF:* 44



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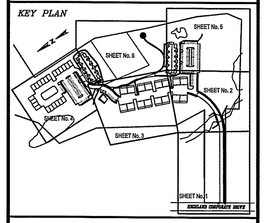
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STEVEN M. CABRAL
4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 5

DATE:	SCALE:
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R2.dwg

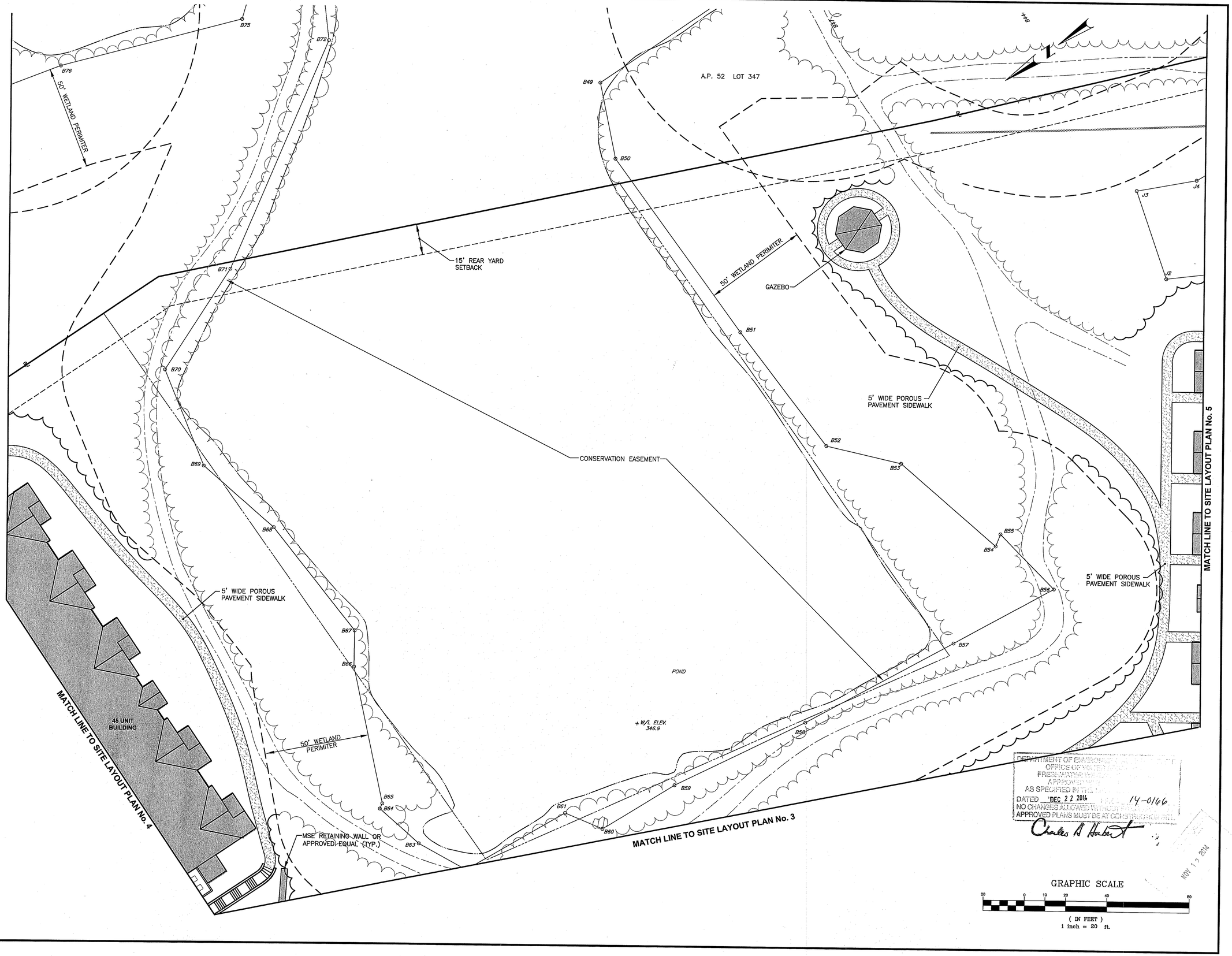
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C6.5

SHEET: 12 OF: 44



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Charles A. Horbert

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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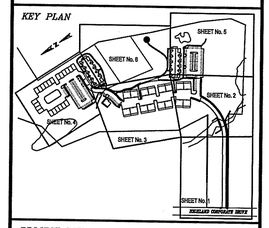
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EN M. CABRAL
No. 4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

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PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LAYOUT PLAN No. 6

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C06-SITE-R2.dwg

REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

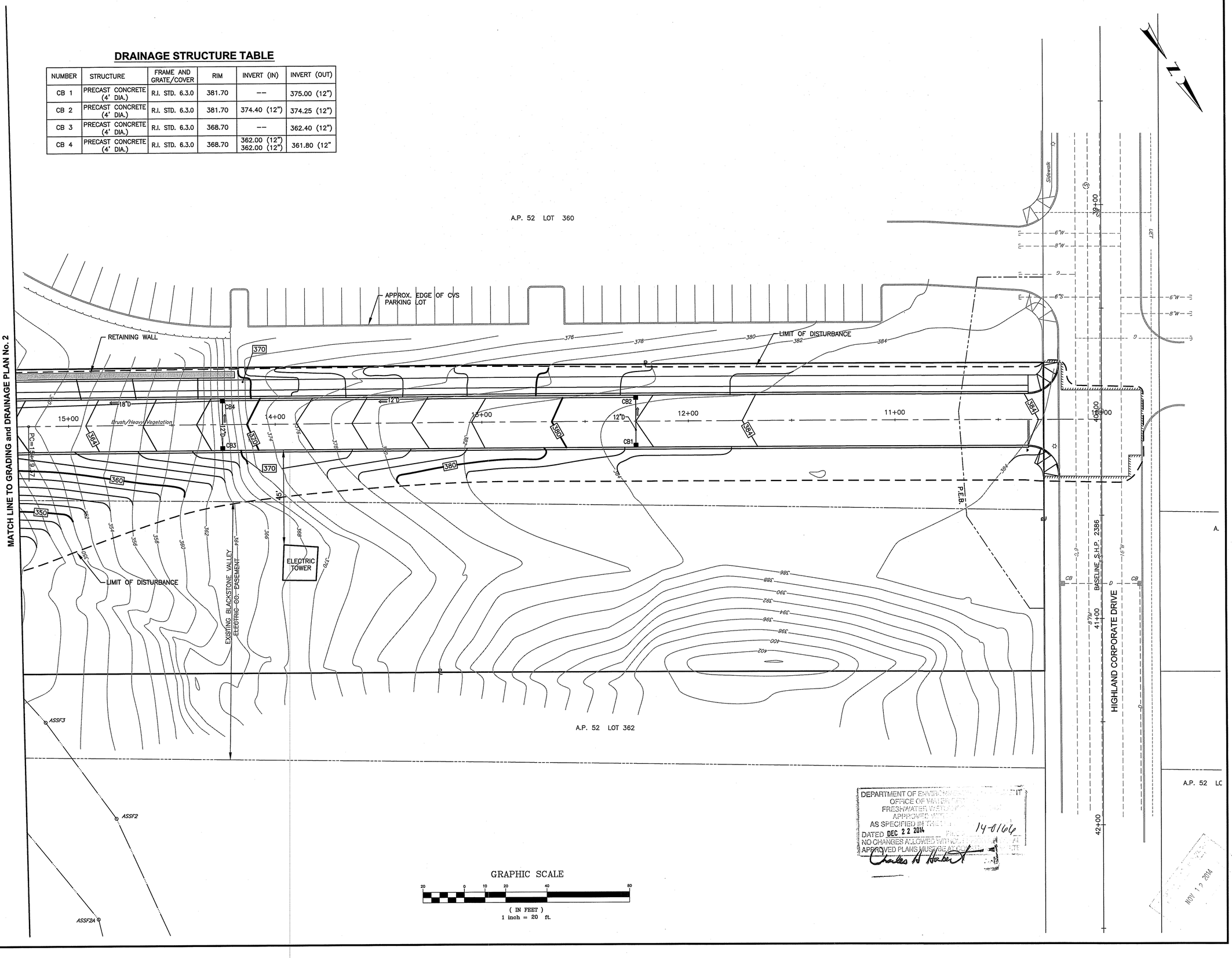
DRAWING NUMBER

C6.6

SHEET: 13 *OF:* 44

DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 1	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	381.70	--	375.00 (12")
CB 2	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	381.70	374.40 (12")	374.25 (12")
CB 3	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	368.70	--	362.40 (12")
CB 4	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	368.70	362.00 (12") 362.00 (12")	361.80 (12"



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
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AS SPECIFIED IN PERMIT # 14-0166
DATED DEC 22 2014
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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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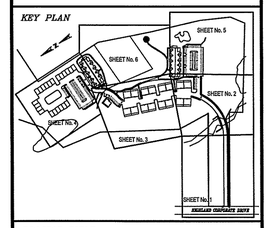
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EN M. CABRAL
11-12-14
4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R2.dwg

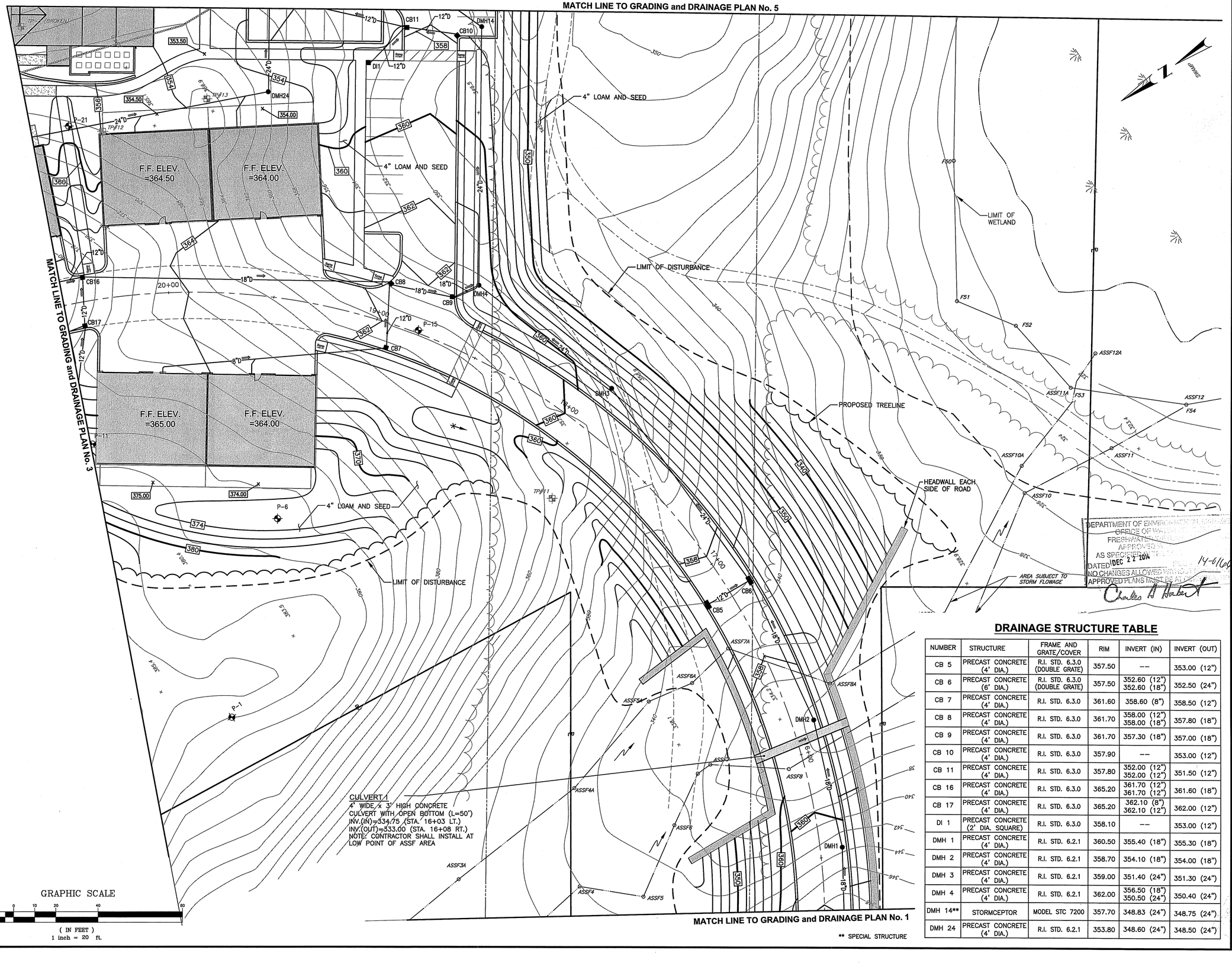
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C7.1

SHEET: 14 *OF:* 44



DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 5	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE GRATE)	357.50	--	353.00 (12")
CB 6	PRECAST CONCRETE (6' DIA.)	R.I. STD. 6.3.0 (DOUBLE GRATE)	357.50	352.60 (12") 352.60 (18")	352.50 (24")
CB 7	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	361.60	358.60 (8")	358.50 (12")
CB 8	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	361.70	358.00 (12") 358.00 (18")	357.80 (18")
CB 9	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	361.70	357.30 (18")	357.00 (18")
CB 10	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	357.90	--	353.00 (12")
CB 11	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	357.80	352.00 (12") 352.00 (12")	351.50 (12")
CB 16	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	365.20	361.70 (12") 361.70 (12")	361.60 (18")
CB 17	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	365.20	362.10 (8") 362.10 (12")	362.00 (12")
DI 1	PRECAST CONCRETE (2' DIA. SQUARE)	R.I. STD. 6.3.0	358.10	--	353.00 (12")
DMH 1	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	360.50	355.40 (18")	355.30 (18")
DMH 2	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	358.70	354.10 (18")	354.00 (18")
DMH 3	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	359.00	351.40 (24")	351.30 (24")
DMH 4	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	362.00	356.50 (18") 350.50 (24")	350.40 (24")
DMH 14**	STORMCEPTOR	MODEL STC 7200	357.70	348.83 (24")	348.75 (24")
DMH 24	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	353.80	348.60 (24")	348.50 (24")

** SPECIAL STRUCTURE

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
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AS SPECIFIED
DATED DEC 22 2014
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APPROVED PLANS MUST BE ATTACHED
14-61/64

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• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

Rhode Island
151 Centerville Road
Warwick, RI 02886
Phone: (401) 738-5660

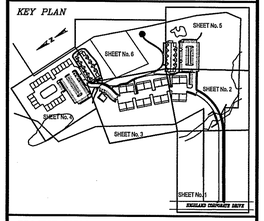
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CARMEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R2.dwg

REVISIONS

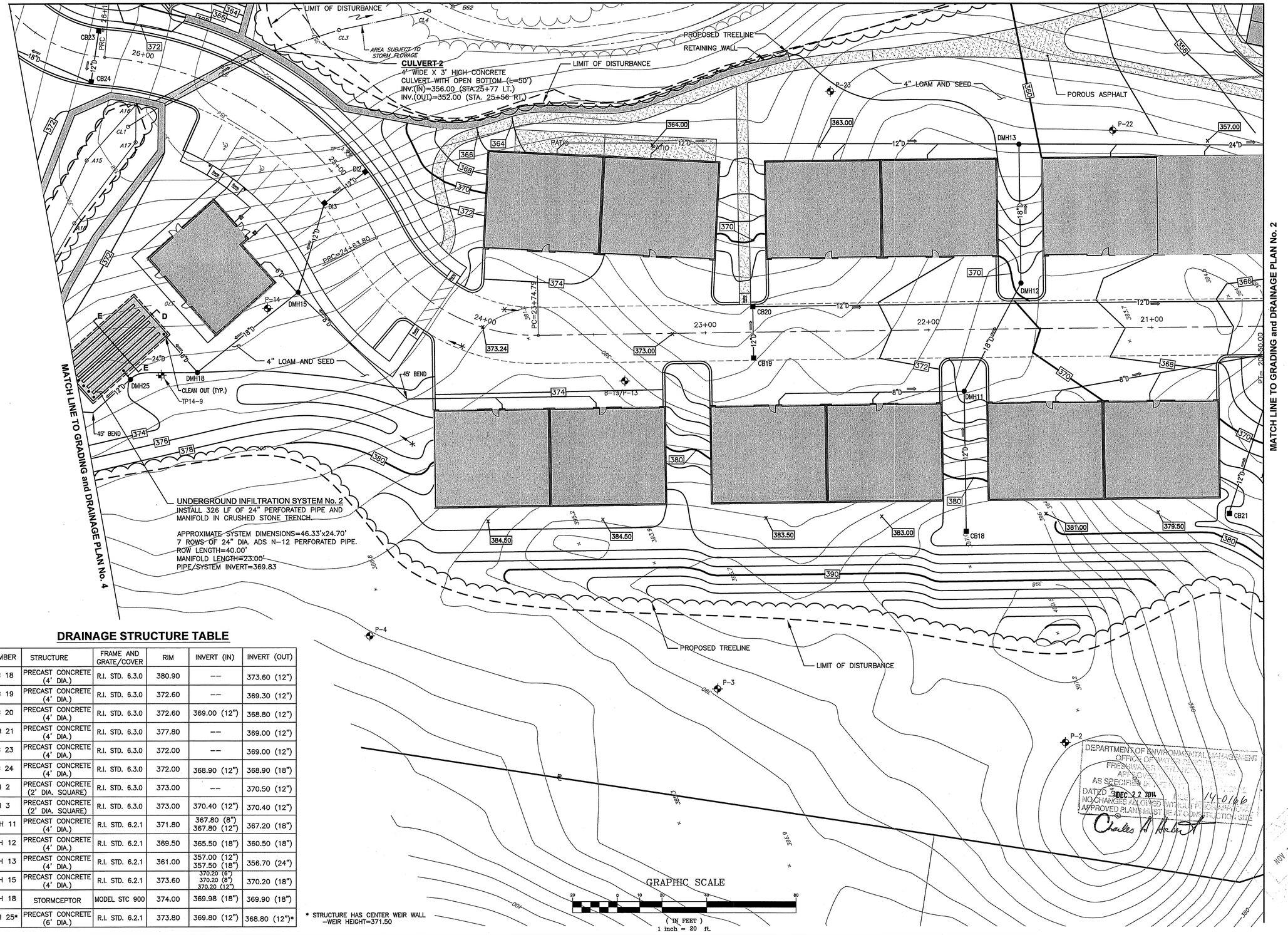
NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C7.2

SHEET: 15 *OF:* 44

MATCH LINE TO GRADING and DRAINAGE PLAN No. 6



DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 18	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	380.90	--	373.60 (12")
CB 19	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	372.60	--	369.30 (12")
CB 20	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	372.60	369.00 (12")	368.80 (12")
CB 21	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	377.80	--	369.00 (12")
CB 23	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	372.00	--	369.00 (12")
CB 24	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	372.00	368.90 (12")	368.90 (18")
DI 2	PRECAST CONCRETE (2' DIA. SQUARE)	R.I. STD. 6.3.0	373.00	--	370.50 (12")
DI 3	PRECAST CONCRETE (2' DIA. SQUARE)	R.I. STD. 6.3.0	373.00	370.40 (12")	370.40 (12")
DMH 11	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	371.80	367.80 (8") 367.80 (12")	367.20 (18")
DMH 12	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	369.50	365.50 (18")	360.50 (18")
DMH 13	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	361.00	357.00 (12") 357.50 (18")	356.70 (24")
DMH 15	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	373.60	370.20 (6") 370.20 (8") 370.20 (12")	370.20 (18")
DMH 18	STORMCEPTOR	MODEL STC 900	374.00	369.98 (18")	369.90 (18")
DMH 25*	PRECAST CONCRETE (6' DIA.)	R.I. STD. 6.2.1	373.80	369.80 (12")	368.80 (12")*

* STRUCTURE HAS CENTER WEIR WALL -WEIR HEIGHT=371.50

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OFFICE OF WATER RESOURCES
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DATED DEC 22 2014
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14-0166
Charles A. Horbert

NOV 12 2014

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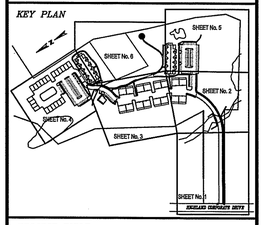
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...EN M. CABRAL
No. 4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 3

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R2.dwg

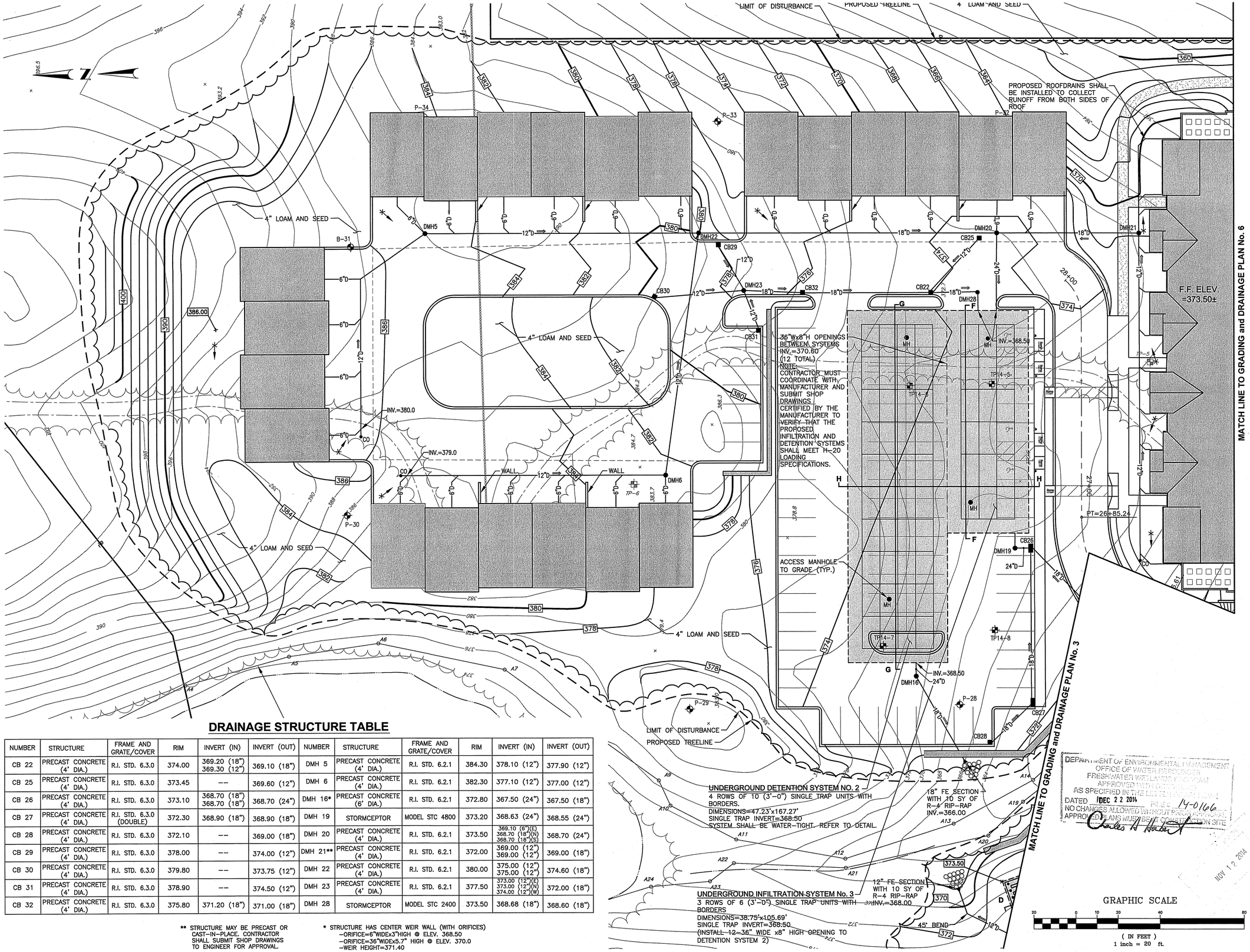
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C7.3

SHEET: 16 *OF:* 44



DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)	NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 22	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	374.00	369.20 (18") 369.30 (12")	369.10 (18")	DMH 5	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	384.30	378.10 (12")	377.90 (12")
CB 25	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	373.45	--	369.60 (12")	DMH 6	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	382.30	377.10 (12")	377.00 (12")
CB 26	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	373.10	368.70 (18") 368.70 (18")	368.70 (24")	DMH 16*	PRECAST CONCRETE (6' DIA.)	R.I. STD. 6.2.1	372.80	367.50 (24")	367.50 (18")
CB 27	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	372.30	368.90 (18")	368.90 (18")	DMH 19	STORMCEPTOR	MODEL STC 4800	373.20	368.63 (24")	368.55 (24")
CB 28	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	372.10	--	369.00 (18")	DMH 20	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	373.50	369.10 (6")(E) 368.70 (18")(N) 368.70 (18")(S)	368.70 (24")
CB 29	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	378.00	--	374.00 (12")	DMH 21**	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	372.00	369.00 (12") 369.00 (12")	369.00 (18")
CB 30	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	379.80	--	373.75 (12")	DMH 22	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	380.00	375.00 (12") 375.00 (12")	374.60 (18")
CB 31	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	378.90	--	374.50 (12")	DMH 23	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	377.50	373.00 (12")(E) 373.00 (12")(N) 374.00 (12")(W)	372.00 (18")
CB 32	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	375.80	371.20 (18")	371.00 (18")	DMH 28	STORMCEPTOR	MODEL STC 2400	373.50	368.68 (18")	368.60 (18")

** STRUCTURE MAY BE PRECAST OR CAST-IN-PLACE. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.

* STRUCTURE HAS CENTER WEIR WALL (WITH ORIFICES)
-ORIFICE=6"WIDEx3"HIGH @ ELEV. 368.50
-ORIFICE=36"WIDEx5.7" HIGH @ ELEV. 370.0
-WEIR HEIGHT=371.40

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Charles A. Horbert
NOV 12 2014

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CROSSMAN ENGINEERING

Rhode Island
151 Centerville Road
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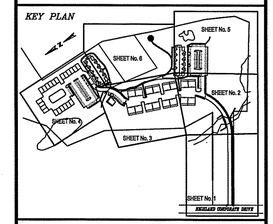
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JOHN M. CABRAL
4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R2.dwg

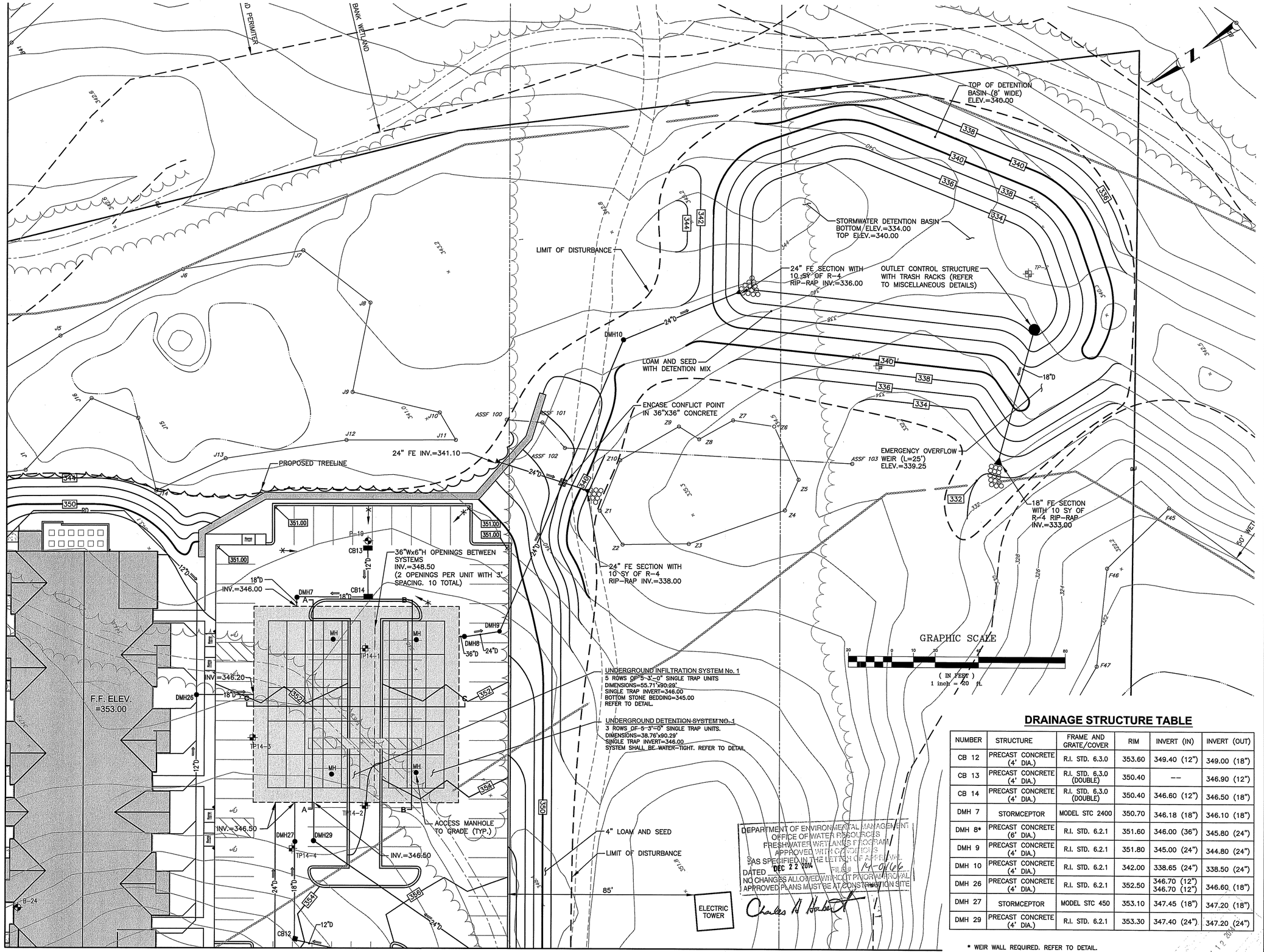
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C7.4

SHEET: 17 *OF:* 44



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DATED DEC 22 2014 FILE # 14-0166
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Charles A. Horbert

DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	FRAME AND GRATE/COVER	RIM	INVERT (IN)	INVERT (OUT)
CB 12	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0	353.60	349.40 (12")	349.00 (18")
CB 13	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	350.40	--	346.90 (12")
CB 14	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.3.0 (DOUBLE)	350.40	346.60 (12")	346.50 (18")
DMH 7	STORMCEPTOR	MODEL STC 2400	350.70	346.18 (18")	346.10 (18")
DMH 8*	PRECAST CONCRETE (6' DIA.)	R.I. STD. 6.2.1	351.60	346.00 (36")	345.80 (24")
DMH 9	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	351.80	345.00 (24")	344.80 (24")
DMH 10	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	342.00	338.65 (24")	338.50 (24")
DMH 26	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	352.50	346.70 (12") 346.70 (12")	346.60 (18")
DMH 27	STORMCEPTOR	MODEL STC 450	353.10	347.45 (18")	347.20 (18")
DMH 29	PRECAST CONCRETE (4' DIA.)	R.I. STD. 6.2.1	353.30	347.40 (24")	347.20 (24")

* WEIR WALL REQUIRED. REFER TO DETAIL.

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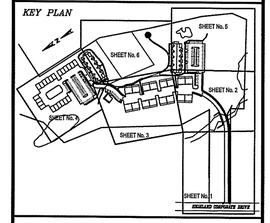
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JOHN M. CABRAL
4847
11-10-14
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 5

DATE:	SCALE:
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C7.5

SHEET: 18 OF: 44

A.P. 52 LOT 347

50' WETLAND PERIMITER

POROUS ASPHALT

PROPOSED TREELINE

LIMIT OF DISTURBANCE

CONSERVATION EASEMENT

POND

+W/L ELEV. 346.9

F.F. ELEV. =373.50±

RETAINING WALL

MATCH LINE TO GRADING and DRAINAGE PLAN No. 4

MATCH LINE TO GRADING and DRAINAGE PLAN No. 3

MATCH LINE TO GRADING and DRAINAGE PLAN No. 5

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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OFFICE OF WATER RESOURCES
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Charles A. Horbert

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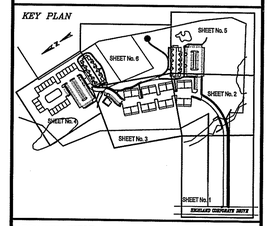
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JOHN M. CABRAL
484
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

GRADING and DRAINAGE PLAN No. 6

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C07-GRADE-R2.dwg

REVISIONS

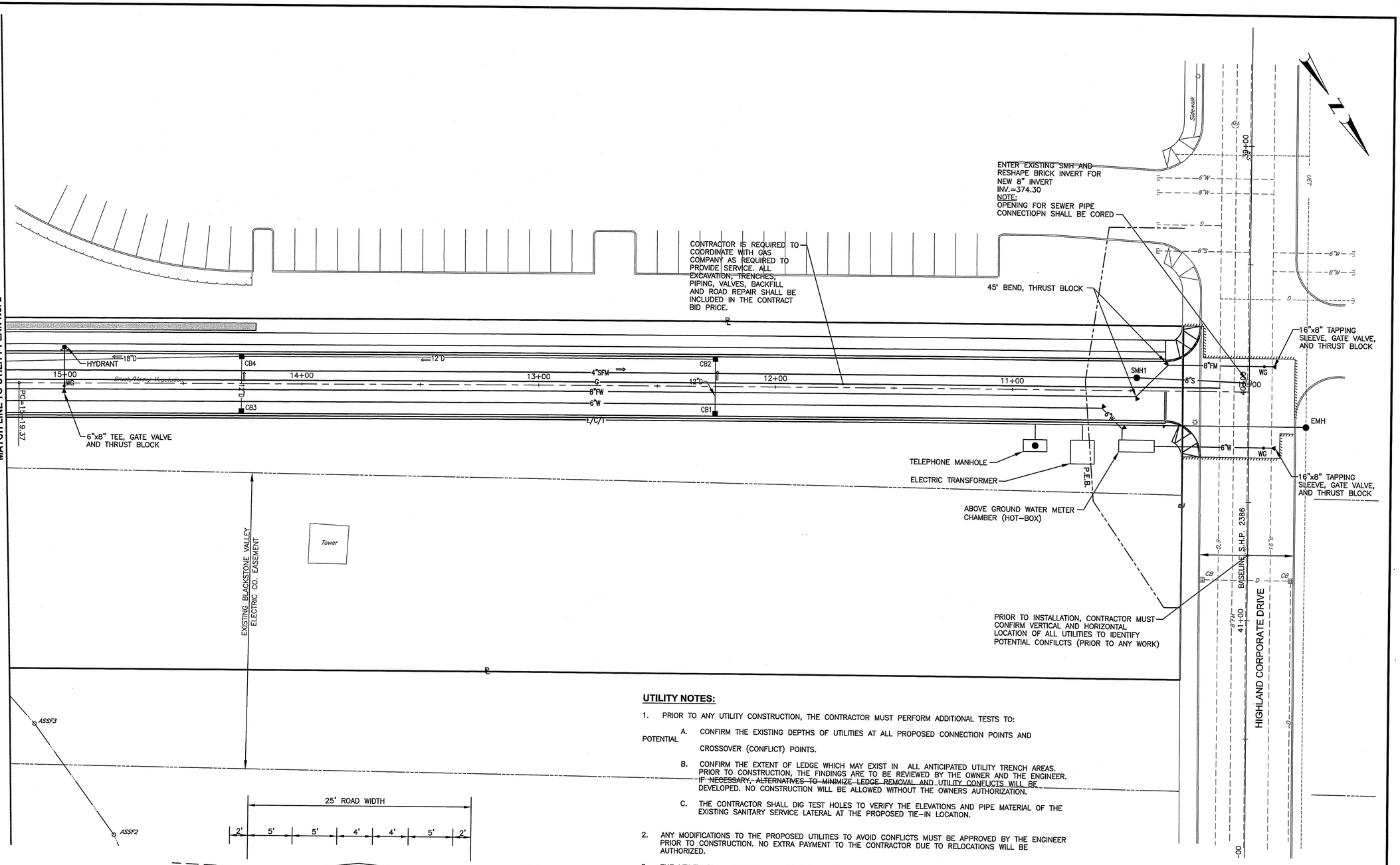
△ NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

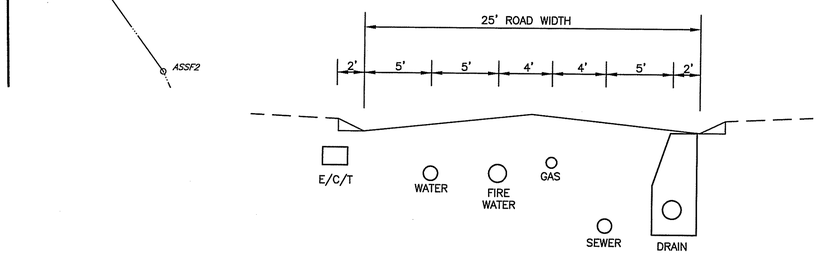
DRAWING NUMBER

C7.6

SHEET: 19 *OF:* 44

MATCH LINE TO UTILITY PLAN No. 2





TYPICAL UTILITY LAYOUT
LOOKING EAST
(NOT TO SCALE)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

UTILITY NOTES:

1. PRIOR TO ANY UTILITY CONSTRUCTION, THE CONTRACTOR MUST PERFORM ADDITIONAL TESTS TO:
   A. CONFIRM THE EXISTING DEPTHS OF UTILITIES AT ALL PROPOSED CONNECTION POINTS AND POTENTIAL CROSSOVER (CONFLICT) POINTS.
   B. CONFIRM THE EXTENT OF LEDGE WHICH MAY EXIST IN ALL ANTICIPATED UTILITY TRENCH AREAS. PRIOR TO CONSTRUCTION, THE FINDINGS ARE TO BE REVIEWED BY THE OWNER AND THE ENGINEER. IF NECESSARY, ALTERNATIVES TO MINIMIZE LEDGE REMOVAL AND UTILITY CONFLICTS WILL BE DEVELOPED. NO CONSTRUCTION WILL BE ALLOWED WITHOUT THE OWNERS AUTHORIZATION.
   C. THE CONTRACTOR SHALL DIG TEST HOLES TO VERIFY THE ELEVATIONS AND PIPE MATERIAL OF THE EXISTING SANITARY SERVICE LATERAL AT THE PROPOSED TIE–IN LOCATION.
2. ANY MODIFICATIONS TO THE PROPOSED UTILITIES TO AVOID CONFLICTS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. NO EXTRA PAYMENT TO THE CONTRACTOR DUE TO RELOCATIONS WILL BE AUTHORIZED.
3. THE UTILITY PLAN DOES NOT DEPICT THE NECESSARY IRRIGATION PIPING OR ELECTRICAL CONDUIT/WIRING TO SERVICE THE PROPOSED LIGHTING AND SIGNS, WHICH WILL BE PERFORMED BY THE CONTRACTOR FOR NO ADDITIONAL COST. INSTALLATION OF THE IRRIGATION PIPING SHALL HAVE A MINIMUM SEPARATION DISTANCE OF 10' TO ANY SEWER SYSTEM COMPONENT.
4. THE CONTRACTOR MUST LOCATE THE EXISTING WATER MAIN TO OBTAIN THE PROPER OUTSIDE DIAMETER TO SIZE THE SLEEVE.
5. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL UTILITY PIPE SIZES INCLUDING WATER, SEWER AND GAS ARE VERIFIED BY THE ARCHITECT AND ENGINEER PRIOR TO ORDERING PIPE OR RELATED MATERIAL.
6. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT HYDRANT DRAWINGS TO CUMBERLAND FIRE MARSHALL FOR APPROVAL.
7. GAS SERVICE TO UNITS SHALL HAVE SHUT OFFS IN THE STREET.
8. UTILITY COMPANY LIST:
   WATER – CUMBERLAND WATER DEPARTMENT
   SEWER – CUMBERLAND SEWER DEPARTMENT
   NATURAL GAS – NATIONAL GRID – GAS DIVISION.
   ELECTRIC – NATIONAL GRID – ELECTRIC DIVISION
   TELEPHONE – COX COMMUNICATIONS
   CABLE TV – COX COMMUNICATIONS
9. THE "UTILITY PLAN" DOES NOT REPRESENT THE SITE ELECTRIC/TELEPHONE/ COMMUNICATION SYSTEM DESIGNS.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL BY ENGINEER PRIOR TO ORDERING ANY MATERIAL.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED DEC 2 2 2014 FILE # 14-0166
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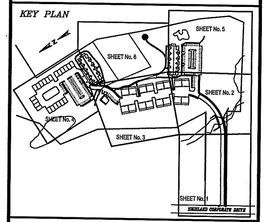
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M. CABRAL
4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 1

DATE:	SCALE:
AUGUST 2014	1"=20'

DWG. NAME: 2035–C08–UTILITY–R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C8.1

SHEET: 20 OF: 44

MATCH LINE TO UTILITY PLAN No. 5

MATCH LINE TO UTILITY PLAN No. 3

MATCH LINE TO UTILITY PLAN No. 1

6"W
G
E/C/T
8"S
24"D
SMH6
SMH5
DMH24
PATIO
12"D
CB16
6"X4" TEE, GATE VALVE AND THRUST BLOCK
REMOTE FIRE DEPARTMENT CONNECTION (TYP.)
FDC
HYDRANT
CB8
18"D
20+00
GG
WG
8"FW
CB17
6"D
6"S
SMH4
8"x6" TEE, GATE VALVE AND THRUST BLOCK
6"x6" TEE, GATE VALVE AND THRUST BLOCK
8"x6" TEE, GATE VALVE AND THRUST BLOCK
CB7
19+00
CB11
DI1
45° BEND, THRUST BLOCK
CB10
DMH14
CB9
DMH4
22 1/2° BEND, THRUST BLOCK
24"D
SMH3
18+00
17+00
CB6
CB5
16+00
DMH2
DMH1
ASSF1A
ASSF2
ASSF3A
ASSF4
ASSF4A
ASSF5
ASSF5A
ASSF6
ASSF6A
ASSF7
ASSF7A
ASSF8A
ASSF9
ASSF10
ASSF10A
ASSF11
ASSF11A
ASSF12
ASSF12A
F50
F51
F52
F53
F54
LIMIT OF WETLAND
AREA SUBJECT TO STORM FLOWAGE
SWAMP

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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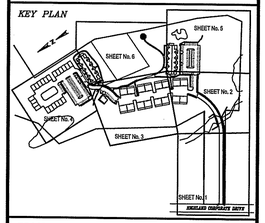
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JAMES M. CABRAL
4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 2

DATE:	SCALE:
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C8.2

SHEET: 21 OF: 44

MATCH LINE TO UTILITY PLAN No. 6

MATCH LINE TO UTILITY PLAN No. 4

MATCH LINE TO GRADING and DRAINAGE PLAN No. 2

SMH10 | CB23 | CB24 | SMH9 | SMH8 | DMH13 | DMH12 | CB20 | CB19 | SMH2 | DMH11 | SMH3 | CB21 | CB18 | DMH15 | DMH18 | DMH25 | CO | DI2 | DI3 | CB1 | CB2

PRC=24+63.80

PC=23+74.79

PT=20+50.00

CL1 | CL3 | CL4 | B62 | A15 | A16 | A17 | A18

AREA SUBJECT TO STORM FLOWAGE

PATIO | PATIO

8"x4" TEE, GATE VALVE, AND THRUST BLOCK

HYDRANT

8"x4" TEE, GATE VALVE, AND THRUST BLOCK

REMOTE FIRE DEPARTMENT CONNECTION (TYP.)

4"x8" TEE, GATE VALVE, AND THRUST BLOCK

4"x8" TEE, GATE VALVE, AND THRUST BLOCK

45° BEND

45° BEND

CLEAN OUT (TYP.)

PROPOSED INFILTRATION SYSTEM No. 2

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

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OFFICE OF WATER RESOURCES
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M. CABRAL
4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN

SHEET No. 1 | SHEET No. 2 | SHEET No. 3 | SHEET No. 4 | SHEET No. 5 | SHEET No. 6

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 3

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R2.dwg

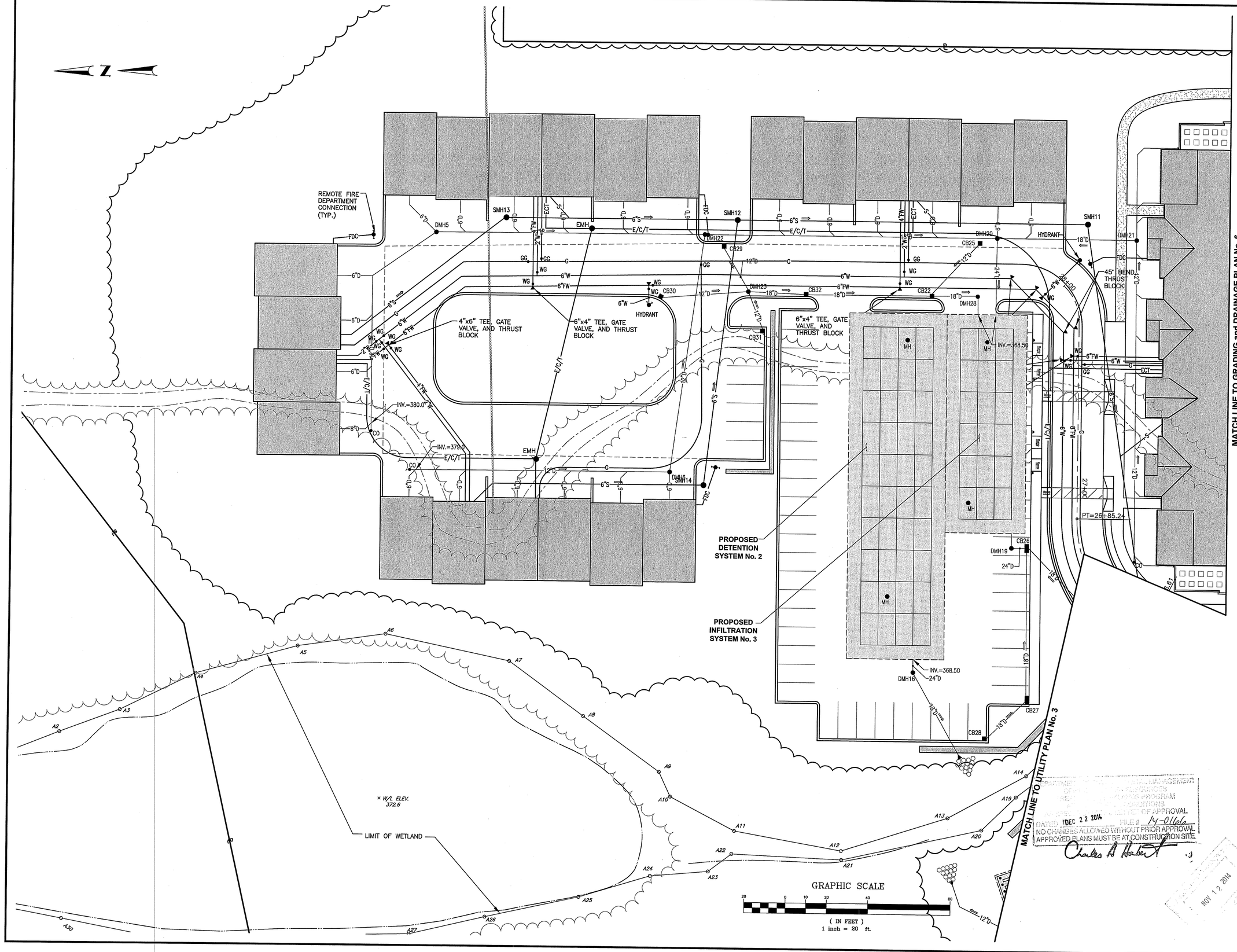
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C8.3

SHEET: 22 *OF:* 44



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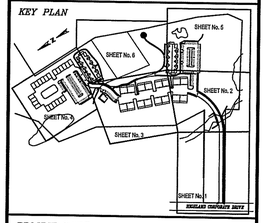
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M. CABRAL
4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

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310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R2.dwg

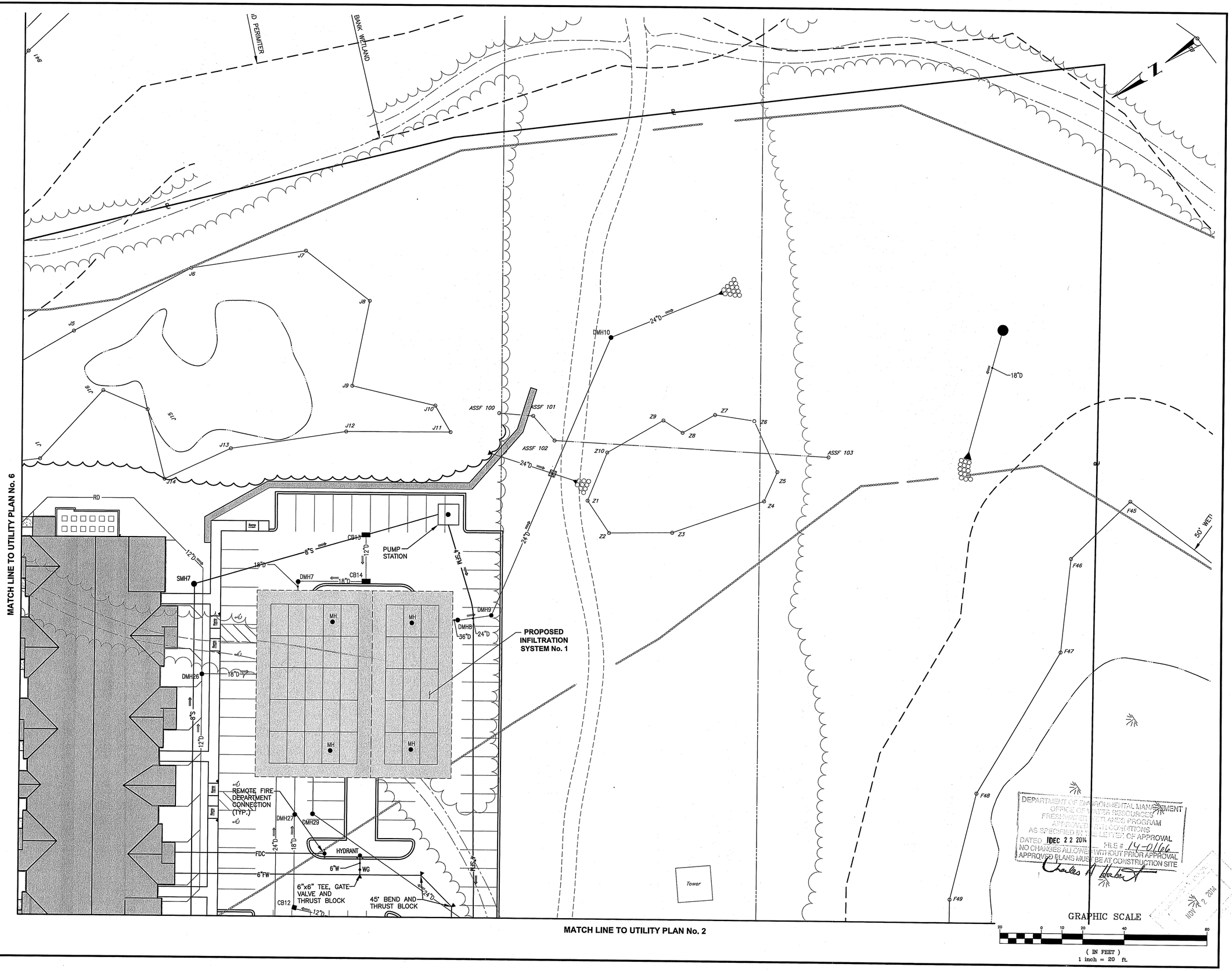
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C8.4

SHEET: 23 *OF:* 44



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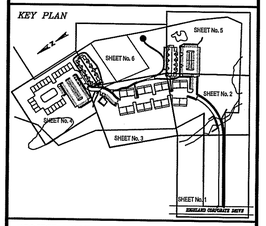
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4847
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PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

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16046

DRAWING TITLE:

UTILITY PLAN No. 5

DATE:	SCALE:
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C8.5

SHEET: 24 OF: 44



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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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JOHN M. CABRAL
4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

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310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

UTILITY PLAN No. 6

DATE:	SCALE:
AUGUST 2014	1"=20'

DWG. NAME: 2035-C08-UTILITY-R2.dwg

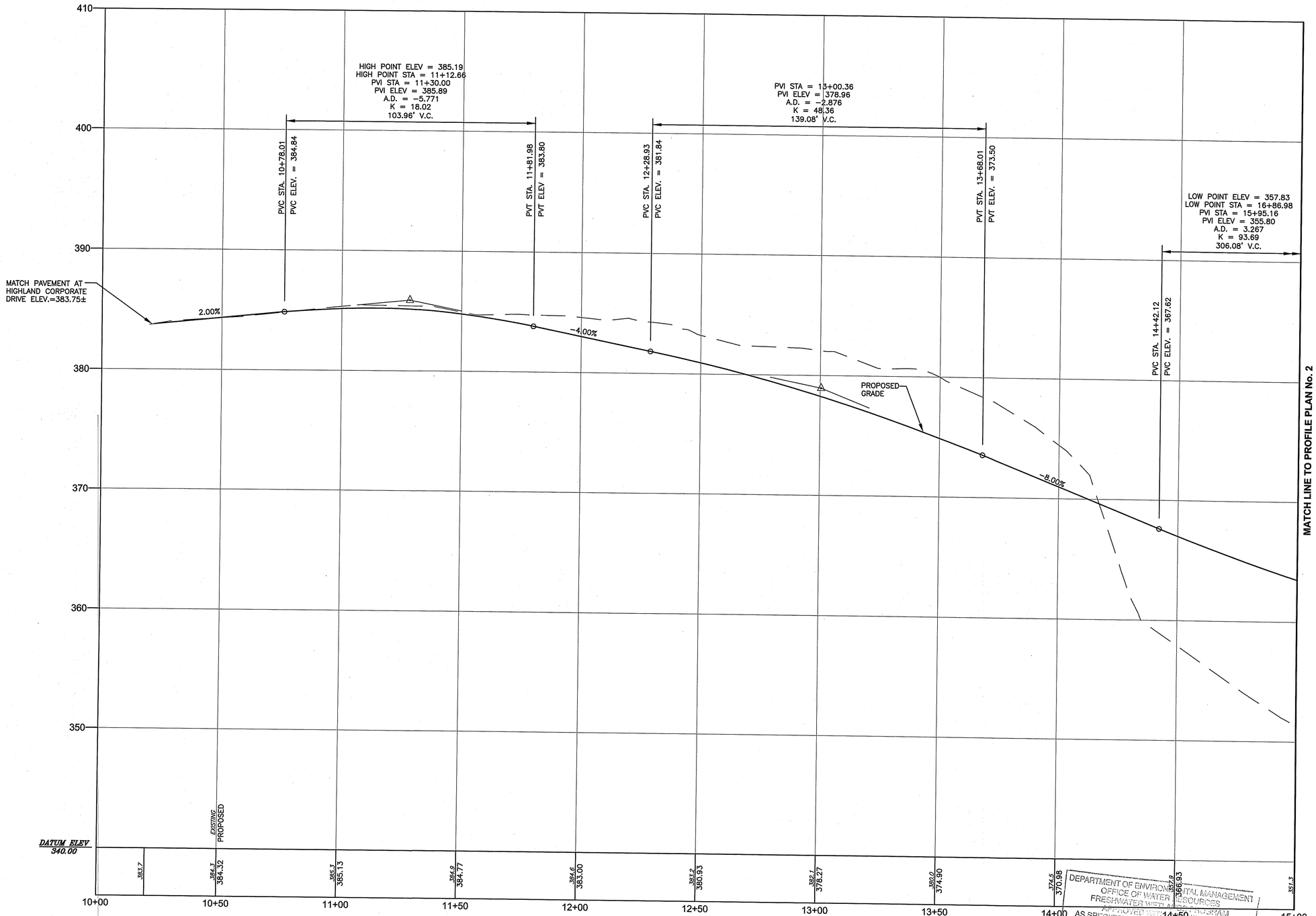
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C8.6

SHEET: 25 OF: 44



ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

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M. CABRAL
4847
11-10-14
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035–C09–PROFILE–R2.dwg

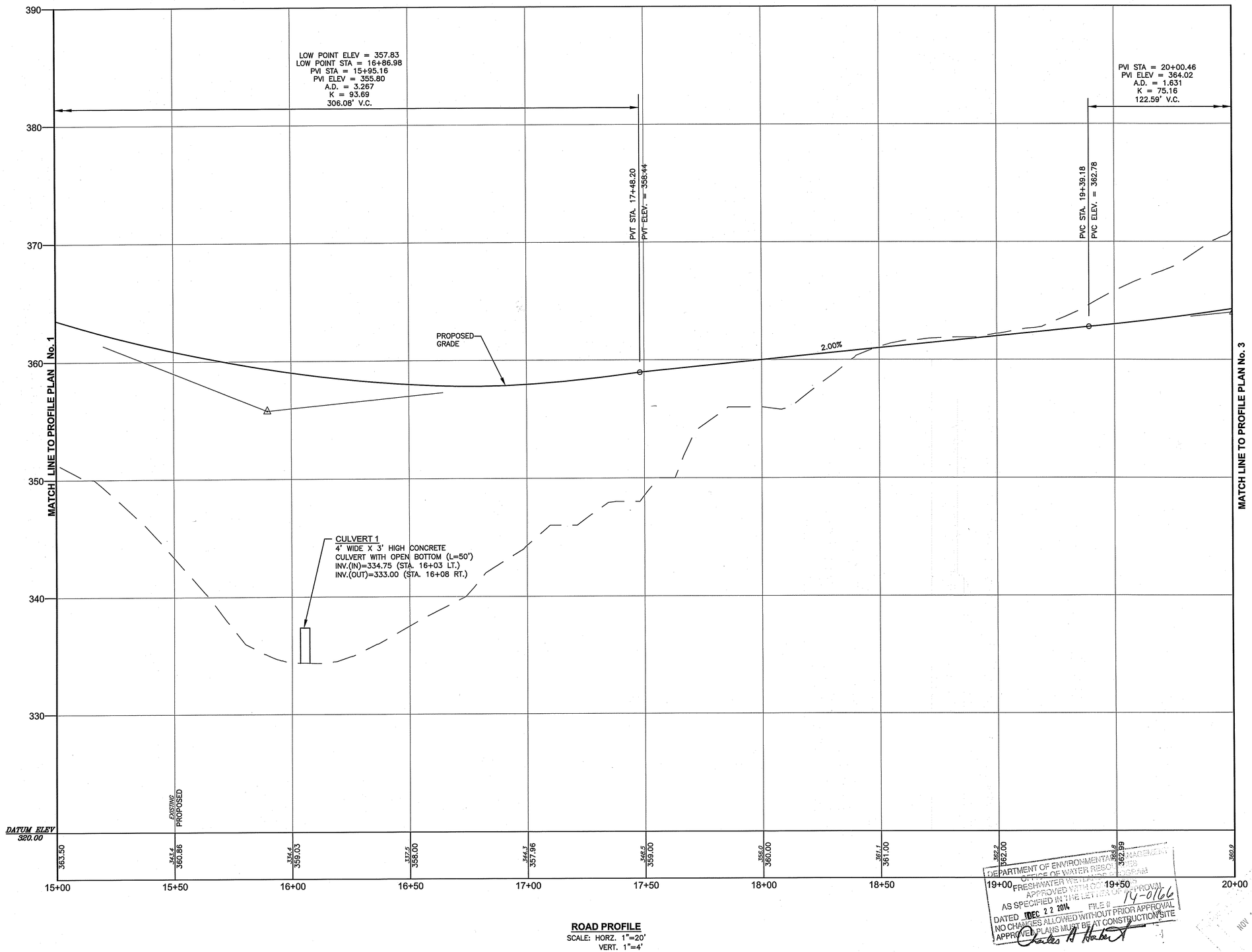
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C9.1

SHEET: 26 *OF:* 44



ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

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JOHN W. CABRAL
4847
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

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310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C09-PROFILE-R2.dwg

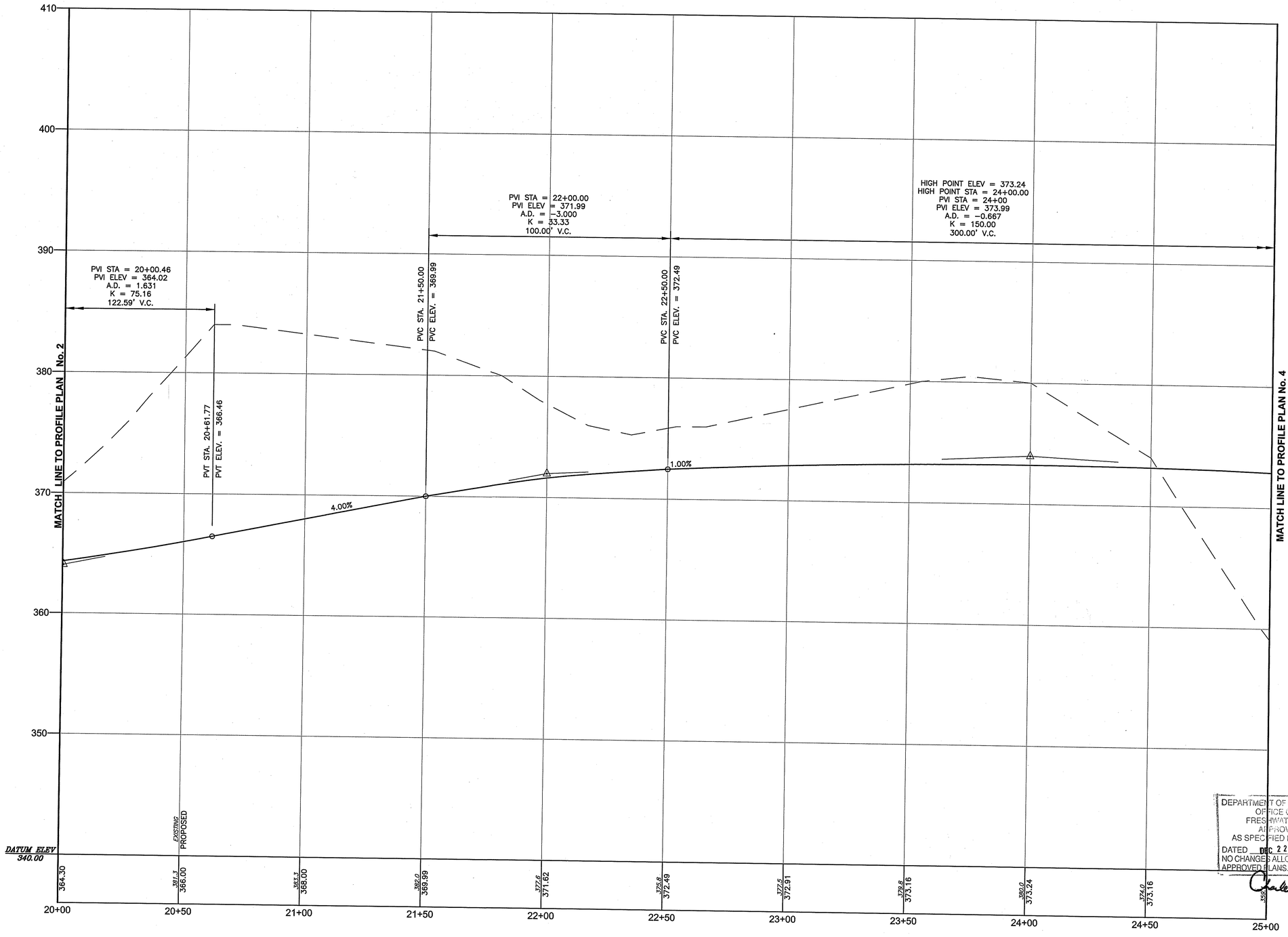
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C9.2

SHEET: 27 *OF:* 44



ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

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APPROVED WITH CONDITIONS
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M. CABRAL
4847
11-10-14
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 3

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C09-PROFILE-R2.dwg

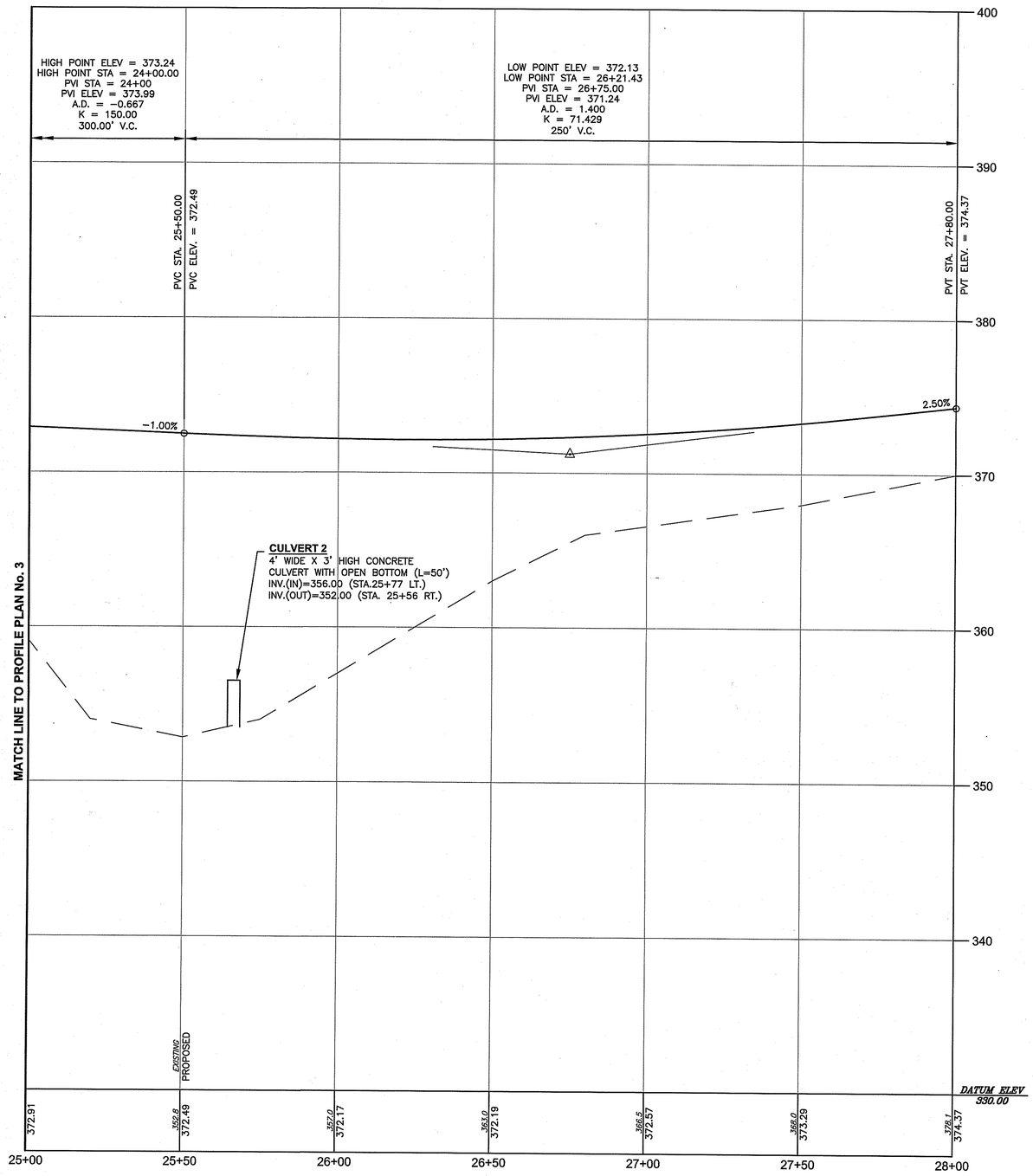
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C9.3

SHEET: 28 *OF:* 44



ROAD PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=4'

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M. CABRAL 4847 REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

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PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

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310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

PROFILE PLAN No. 4

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035–C09–PROFILE–R2.dwg

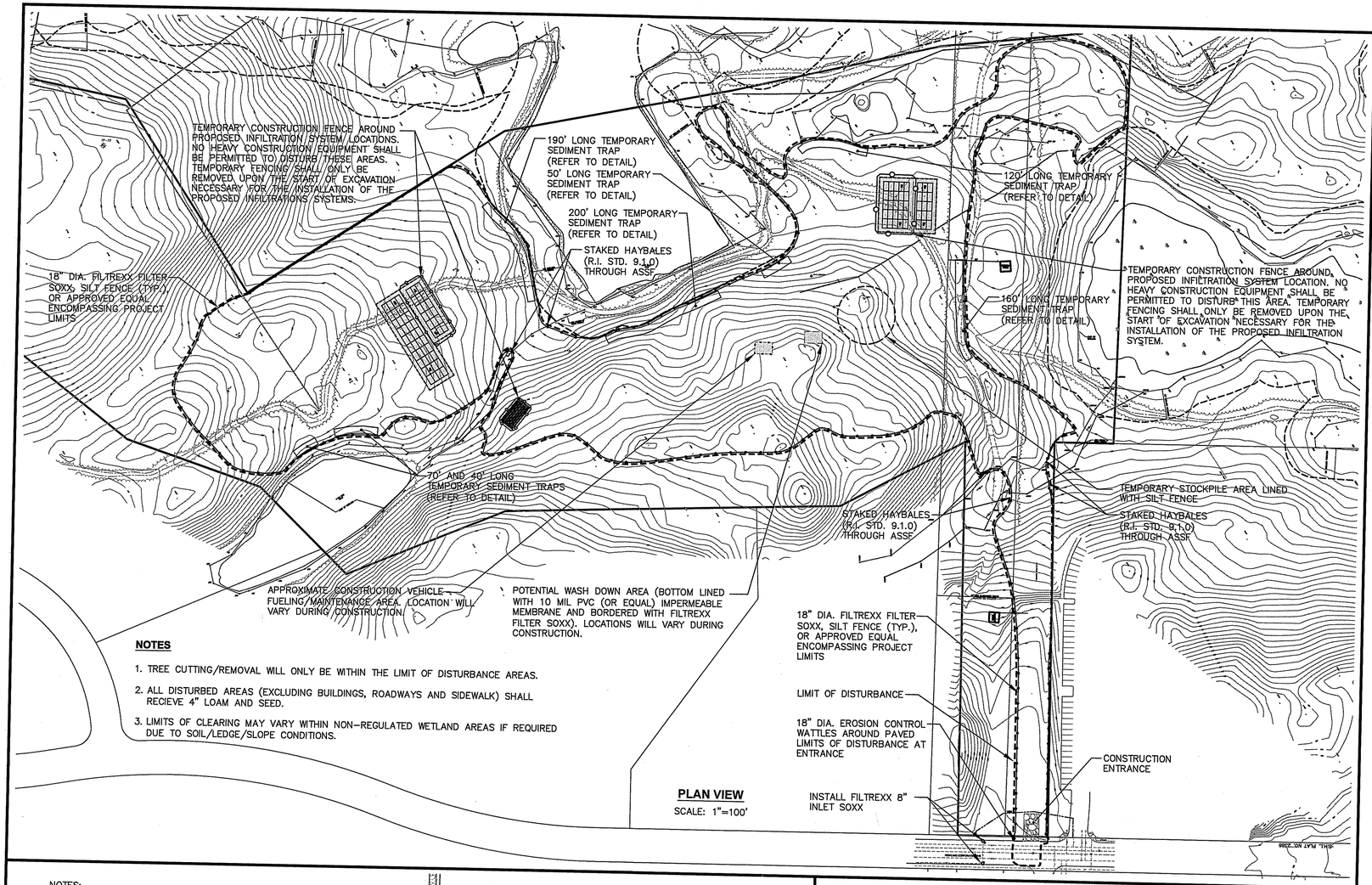
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C9.4

SHEET: 29 *OF:* 44



NOTES

1. TREE CUTTING/REMOVAL WILL ONLY BE WITHIN THE LIMIT OF DISTURBANCE AREAS.
2. ALL DISTURBED AREAS (EXCLUDING BUILDINGS, ROADWAYS AND SIDEWALK) SHALL RECIEVE 4" LOAM AND SEED.
3. LIMITS OF CLEARING MAY VARY WITHIN NON-REGULATED WETLAND AREAS IF REQUIRED DUE TO SOIL/LEDGE/SLOPE CONDITIONS.

PLAN VIEW
SCALE: 1"=100'

DUST CONTROL NOTES

ON AN AS-NEEDED BASIS OR AS DIRECTED BY THE TOWN OR OWNER, THE CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS (AS RECOMMENDED BY THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK", ISSUED 1989, REVISED 2014) TO CONTROL DUST:

A. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.

B. CALCIUM CHLORIDE SHOULD BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.

THE METHODS SHOULD BE REPEATED AS NEEDED, AND SPECIAL ATTENTION MUST BE GIVEN TO THE ACCESS DRIVES.

INSPECTION/MAINTENANCE NOTES

1. PRIOR TO COMMENCING CLEARING AND GRUBBING OPERATIONS, FILTERSOXX SHALL BE PLACED SO AS TO PREVENT SEDIMENT FROM ENTERING EXISTING ROADWAY DRAINAGE SYSTEM, WETLANDS AND ABUTTING PROPERTIES.
2. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE ROADWAY DRAINAGE SYSTEM.
3. ALL DISTURBED AREAS WHICH BECOME SUBJECT TO EROSIVE TENDENCIES WHETHER THEY BE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SLOPE PROTECTION – SUCH AS RIP-RAP.
4. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING PERIODS OF RAINFALL.
5. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT / REPLACE DAILY DURING CONSTRUCTION, FOLLOWING RAINFALL AND WEEKLY DURING NON CONSTRUCTION PERIODS.
6. ADDITIONAL FILTERSOXX OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
7. THE LATEST VERSION OF THE "R.I. SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK" PREPARED BY THE U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND FOR THE ENTIRE PROJECT DURATION, INCLUDING TEMPORARY SHUT-DOWN PERIODS, MUST MONITOR AND REPAIR, AS NEEDED, ALL SLOPES TO ENSURE A STABLE PRODUCT.
9. AFTER CONSTRUCTION THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THE INSPECTION REPORTS THAT WERE TAKED DURING THE CONSTRUCTION ACTIVITIES. THE OWNER IS TO RETAIN THE INSPECTION REPORTS FOR 5 YEARS FROM THE DATE ON THE REPORT OR APPLCIATION.

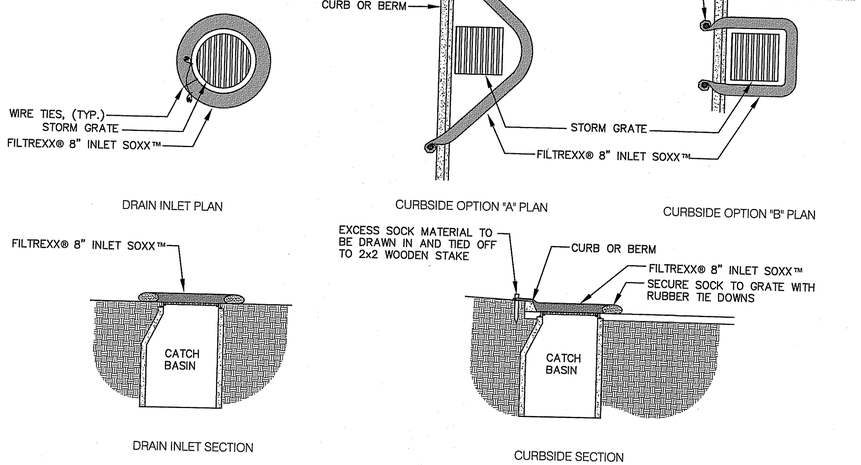
GENERAL PROJECT WIDE NOTES

1. FILTERSOXX SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, MAINTAINED ON A REGULAR BASIS, AND SHALL BE PLACED TO PREVENT SEDIMENTATION ONTO ADJACENT PROPERTY AND WETLANDS.
2. THE CONTRACTOR MUST REPLACE AND/OR RESEED ANY VEGETATION THAT DOES NOT DEVELOP/SURVIVE WITHIN THE PERIOD OF ONE YEAR AND HE SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. ALL FILTERSOXX OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND POTENTIAL SEDIMENTATION SOURCES ARE REMOVED.
4. TREES AND OTHER EXISTING VEGETATION SHALL BE RETAINED WHENEVER FEASIBLE; THE AREA BEYOND THE DROPLINE SHALL BE FENCED OR ROPED OFF TO PROTECT TREES FROM CONSTRUCTION EQUIPMENT.
5. AREAS DAMAGED DURING CONSTRUCTION SHALL BE RESODDED, RESEEDED, OR OTHERWISE RESTORED AT THE CONTRACTOR'S EXPENSE.
6. STOCKPILES SHALL HAVE NO SLOPE STEEPER THAN 2:1 AND SHALL BE SURROUNDED BY STAKED FILTERSOXX.
7. STOCKPILES EXPOSED FOR EXCESSIVE PERIODS SHALL RECEIVE TEMPORARY TREATMENT CONSISTING OF HAY, STRAW, FIBER MATTING OR APPROVED EQUAL.
8. SILT FENCE OR STAKED HAYBALES MAY BE USED IN LIEU OF THE FILTREXX FILTER SOXX.

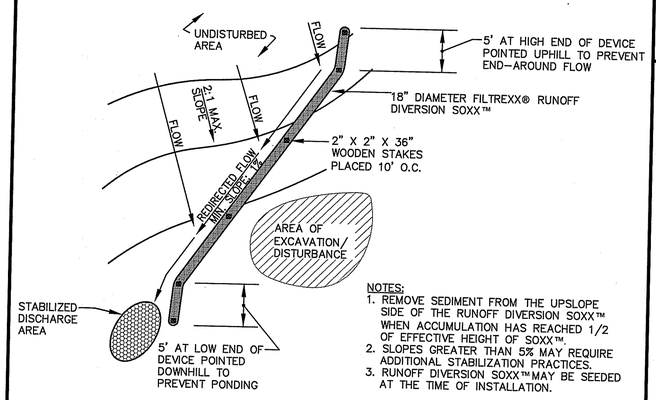
FILTREXX SOXX NOTE

CONTRACTOR IS RESPONSIBLE TO BECOME FAMILAR WITH THE FILTREXX PRODUCTS AND COORDINATE INSTALLATION SCHEDULES AND METHODS WITH THE ENGINEER PRIOR TO PLACEMENT. SILT FENCE MAY BE UTILIZED IN LIEU OF FILTREXX SOXX.

NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. SILT SOXX FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

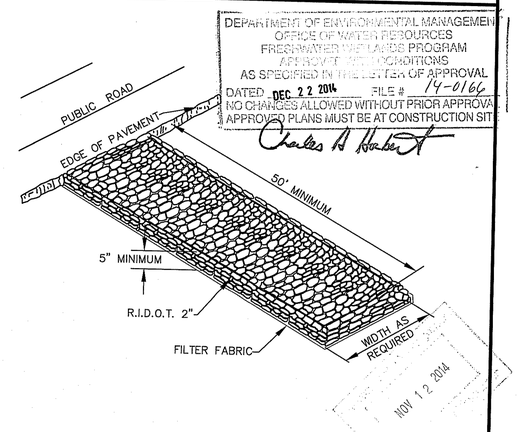


FILTREXX® INLET SOXX™ DETAILS
NOT TO SCALE



NOTES:
1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE RUNOFF DIVERSION SOXX™ WHEN ACCUMULATION HAS REACHED 1/2 OF EFFECTIVE HEIGHT OF SOXX™.
2. SLOPES GREATER THAN 5% MAY REQUIRE ADDITIONAL STABILIZATION PRACTICES.
3. RUNOFF DIVERSION SOXX™ MAY BE SEEDED AT THE TIME OF INSTALLATION.

FILTREXX® RUNOFF DIVERSION SOXX™ PLAN
NOT TO SCALE



CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

CROSSMAN ENGINEERING

Rhode Island
151 Centerville Road
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North Attleboro, MA 02763
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SOIL EROSION and SEDIMENT CONTROL PLAN

DATE: AUGUST 2014
SCALE: AS NOTED
DWG. NAME: 2035-C10-SOIL-R2.dwg

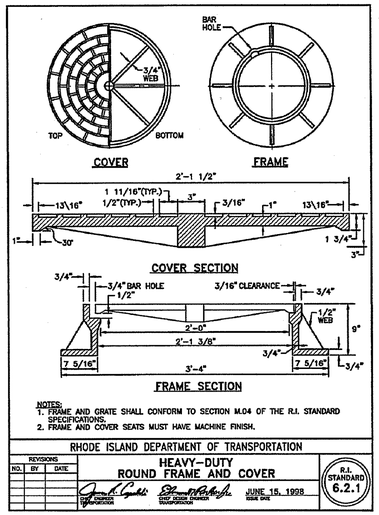
REVISIONS

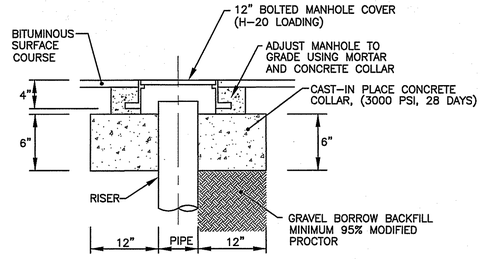
NUMBER	REMARKS	DATE
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2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

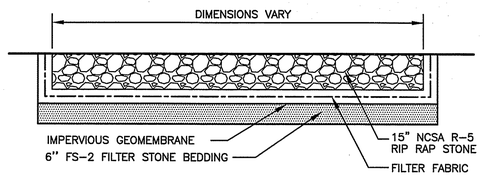
C10

SHEET: 30 *OF:* 44

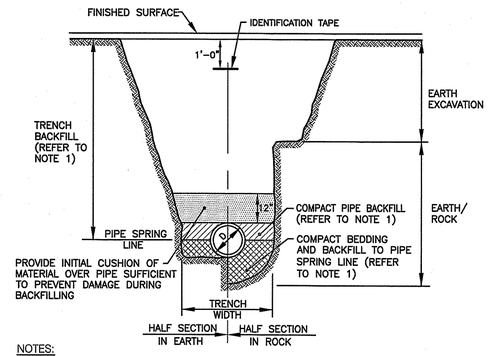




STORM DRAIN CLEAN-OUT DETAIL
NOT TO SCALE



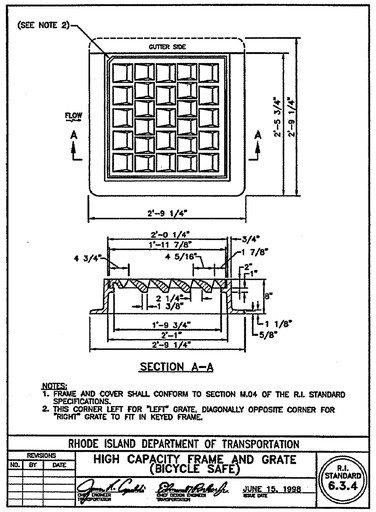
TYPICAL SECTION RIP-RAP OUTLET PROTECTION
NOT TO SCALE

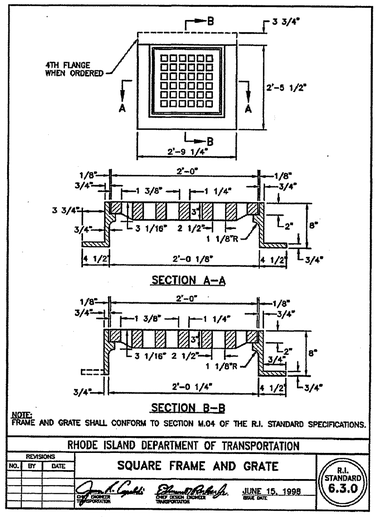


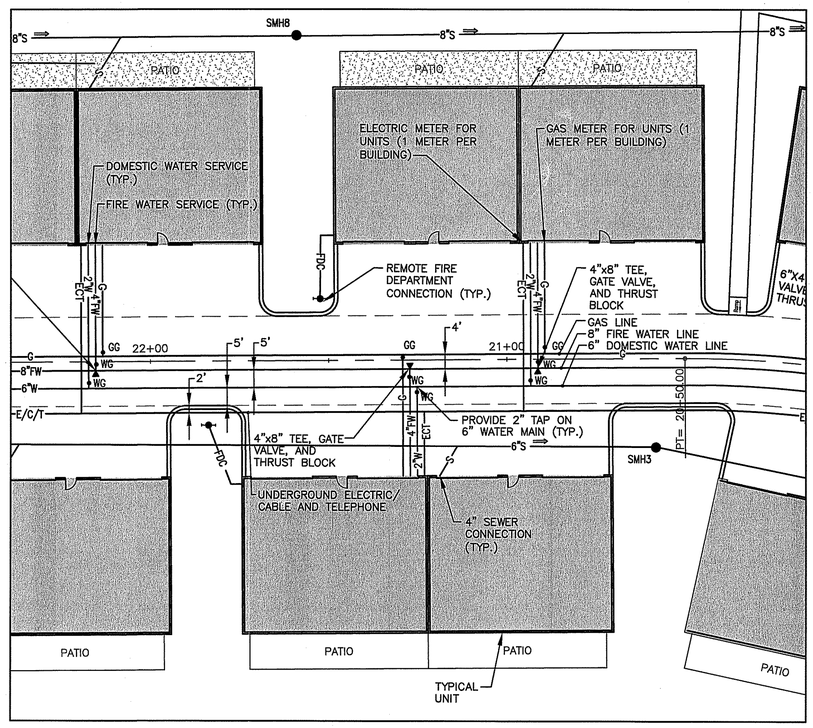
NOTES:

1. PIPE BEDDING AND BACKFILL TO SPRING LINE SHALL CONSIST OF CRUSHED STONE-3/4" MINUS. PIPE BACKFILL SHALL CONSIST OF CRUSHED STONE (WRAPPED IN FILTER FABRIC) OR GRAVEL (3" MINUS, WITH SIEVE ANALYSIS APPROVED BY ENGINEER), OR OTHER APPROVED MATERIAL. TRENCH BACKFILL SHALL CONSIST OF SUITABLE EXCAVATED MATERIAL OR OTHER APPROVED MATERIAL. ALL BEDDING/BACKFILL TO BE COMPACTED TO 95% DRY DENSITY, MODIFIED PROCTOR METHOD.
2. ALL TRENCH EXCAVATION AND ANY SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND OSHA REGULATIONS.
3. MINIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 12". MAXIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 24".

TRENCH DETAIL
NOT TO SCALE







TYPICAL UTILITY CONNECTION TO BUILDING UNITS
SCALE: 1" = 20'

NOTES

1. FINAL LOCATIONS FOR UNDERGROUND ELECTRIC, TELEPHONE AND CABLE CONDUITS SHALL BE VERIFIED BY UTILITY COMPANIES.
2. ELECTRIC CONDUITS WITHIN PAVEMENT AREAS SHALL BE ENCASED IN CONCRETE, FULL LENGTH.
3. TELEPHONE AND CABLE CONDUITS TO BE ENCASED IN CONCRETE UNDER PAVEMENT.
4. PRIOR TO CONSTRUCTION, THE ARCHITECT SHALL VERIFY THE SIZE AND LOCATION OF ALL UTILITY SERVICES FOR EACH UNIT.

LEGEND

•CS	WATER/GAS CURB STOP VALVE
•CO	CLEAN OUT
•WG	WATER GATE VALVE
——W——	WATER SERVICE
——S——	4" SDR 35 SEWER LATERAL
——G——	GAS MAIN/GAS SERVICE
——D——	DRAINAGE LINE
——E/C/T——	UNDERGROUND ELECTRIC/CABLE/TELEPHONE CONDUITS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 22 2014 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

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• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 1

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C11-DETAIL1-R2.dwg

REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C11

SHEET: 31 *OF:* 44

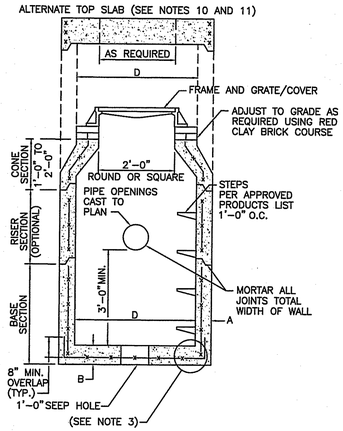
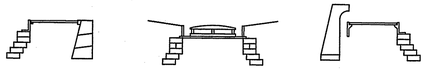


TABLE 1			
CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED *
4'-0"	5"	6"	0.12 SQ. IN./LIN. FT.
5'-0"	6"	7"	0.15 SQ. IN./LIN. FT.
6'-0"	7"	8"	0.18 SQ. IN./LIN. FT.

* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2

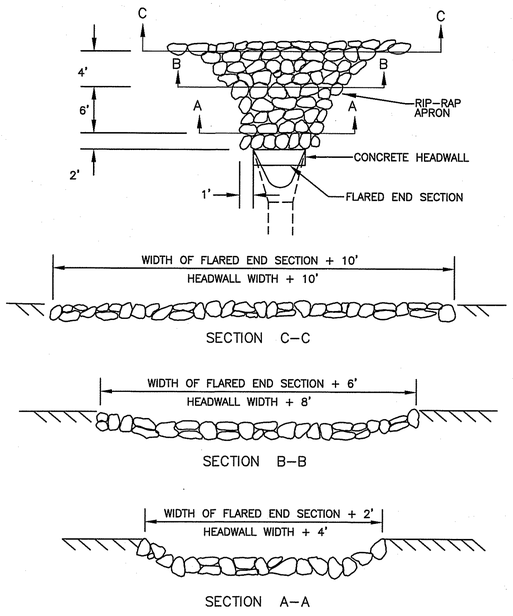


TYPE CATCH BASIN AS REQUIRED

NOTES:

1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. SEE TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./FT. (BOTH WAYS).
4. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
5. ONE POUR MONOLITHIC BASE SECTION.
6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
8. FOR CATCH BASIN TYPES "D" AND "F" STEPS MUST BE INSTALLED ON THE CURB SIDE OF THE STRUCTURE.
9. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
10. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
11. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
12. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

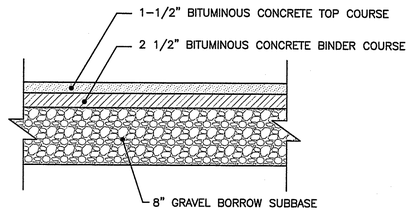
R.I. STANDARD 4.4.0
PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN
NOT TO SCALE



NOTES:

1. UNLESS OTHERWISE SPECIFIED, DUMPED RIP-RAP SHALL BE USED.
2. DIMENSIONS MAY BE MODIFIED BY ENGINEER TO MEET FIELD CONDITIONS.
3. SEE "TYPICAL SECTION RIP RAP OUTLET PROTECTION" DETAIL FOR CONSTRUCTION MATERIAL SPECIFICATIONS.

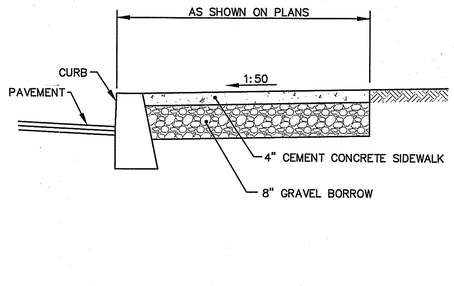
TYPICAL LAYOUT OF RIP-RAP OUTLET PROTECTION AT FLARED END SECTIONS and CONCRETE HEADWALLS
NOT TO SCALE



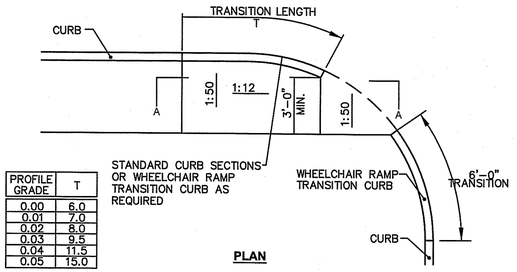
NOTE:

THE ABOVE PAVEMENT THICKNESS REPRESENTS THE MINIMUM THICKNESS FOR PASSENGER VEHICLE AREAS. PAVEMENT DEPTH TO BE BASED UPON SITE SPECIFIC SOIL CONDITIONS.

TYPICAL PAVEMENT STRUCTURE DETAIL
NOT TO SCALE

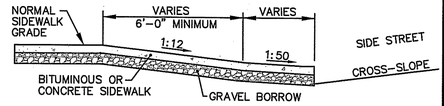


R.I. STD. 43.1.0
CEMENT CONCRETE SIDEWALK DETAIL
NOT TO SCALE



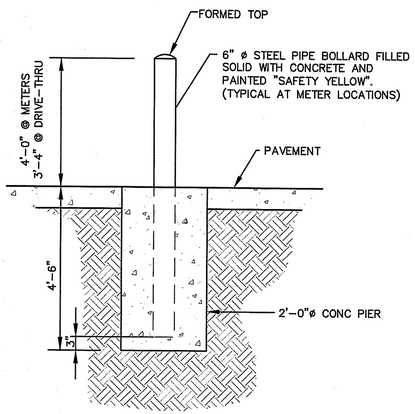
PROFILE GRADE	T
0.00	6.0
0.01	7.0
0.02	8.0
0.03	9.5
0.04	11.5
0.05	15.0

PLAN

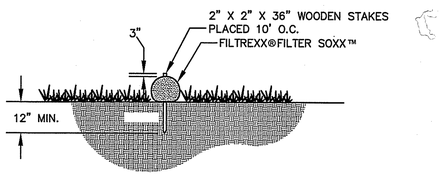


SECTION A-A

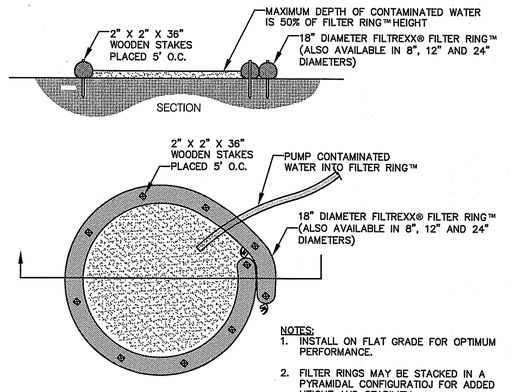
WHEELCHAIR RAMP AT ROADWAY DETAIL
NOT TO SCALE



TYPICAL BOLLARD DETAIL
NOT TO SCALE



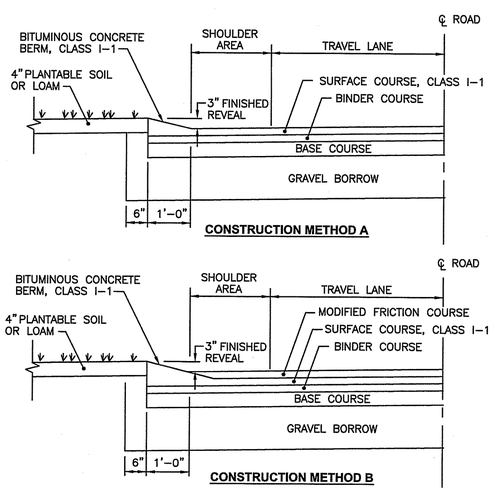
FILTREXX® FILTER SOXX™ SECTION
NOT TO SCALE



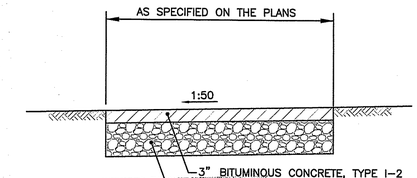
NOTES:

1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. FILTER RINGS MAY BE STACKED IN A PYRAMIDAL CONFIGURATIOJ FOR ADDED HEIGHT AND STABILITY.
3. FILTER RINGS MAY BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
4. THIS TYPICAL INSTALLATION SHALL BE USED FOR DEWATERING OPERATIONS.

FILTREXX® FILTER RING™
NOT TO SCALE



R.I. STANDARD 7.5.1 BITUMINOUS BERM
NOT TO SCALE



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 22 2014 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.
Charles A. Horbert

NOV 12 2014

R.I. STD. 43.2.0
BITUMINOUS CONCRETE SIDEWALK DETAIL
NOT TO SCALE

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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151 Centerville Road
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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C12-DETAIL2-R2.dwg

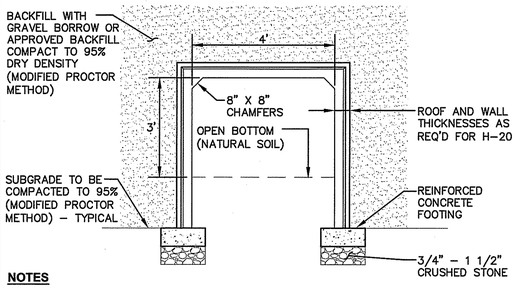
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C12

SHEET: 32 *OF:* 44



NOTES

1. CULVERT SHALL BE CAPABLE TO WITHSTAND H-20 LOADING.
2. INSTALL CULVERT FOOTING ON 12" DEEP CRUSHED STONE BED (3/4"-1 1/2" CRUSHED STONE)
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS STAMPED BY A R.I. STRUCTURAL P.E. TO DESIGN CULVERT FOR PROPOSED LOADS DUE TO DEPTH OF COVER.
4. CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ENGINEER TO SURVEY STAKE THE LOCATION AND ELEVATIONS PRIOR TO CONSTRUCTION.
5. CONCRETE: 5,000 P.S.I MINIMUM STRENGTH @ 28 DAYS, STRENGTH TO BE VERIFIED BY A R.I. STRUCTURAL P.E.
6. STEEL REINFORCING - ASTM A-615, GRADE 60.
7. COVER TO STEEL - 1" MINIMUM.
8. CULVERT SHALL BE DESIGNED TO MEET ASTM C858 AND ACI 318 WITH AASHTO HS-20 LOADING.
9. CONSTRUCTION JOINT-SEALED WITH 1" DIA. BUTYL RUBBER OR EQUIVALENT, HYDRAULIC CEMENT SHALL BE USED AT CULVERT SECTION CONNECTIONS.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS STAMPED BY A R.I. STRUCTURAL P.E. TO DESIGN CULVERT HEADWALL/WINGWALL.

CULVERT 1 and 2 TYPICAL DETAIL (4' WIDE x 3' HIGH)

NOT TO SCALE

CULVERT INSTALLATION SEQUENCE OF CONSTRUCTION

1. CONSTRUCTION TO BE CONDUCTED DURING LOW FLOW PERIODS, TYPICALLY JULY THRU SEPTEMBER.
2. SOIL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED WITHIN THE WORK AREA AS SHOWN ON THE PLAN.
3. STOCKPILE ALL MATERIAL REQUIRED FOR INSTALLATION ADJACENT TO PROPOSED CULVERT LOCATION PRIOR TO START OF CONSTRUCTION. MATERIAL STOCKPILED SHALL INCLUDE BOX CULVERT, CRUSHED STONE (3/4"-1 1/2"), GRAVEL BORROW AND HYDRAULIC CEMENT. STOCKPILE LOCATION SHALL BE WITHIN THE LIMIT OF DISTURBANCE AREAS BUT NOT WITHIN ASSF LIMITS.
4. THE PROPOSED CULVERT LOCATIONS AND GRADES SHALL BE STAKED IN FIELD.
5. WEATHER PERMITTING, (DRY WEATHER FORECAST) THE CONTRACTOR SHALL COMMENCE TREE REMOVAL WITHIN THE PROPOSED CULVERT AREA. THE DURATION FOR EXCAVATING, CULVERT INSTALLATION AND BACKFILL SHALL CONTINUE UNTIL COMPLETION AND SHALL TAKE NO LONGER THAN 3 DAYS.
6. EXCAVATION SHALL INCLUDE REMOVAL OF ORGANIC MATERIAL UNDER THE NEW CULVERT FOOTINGS. CONTRACTOR IS REQUIRED TO CONTACT THE ENGINEER FOR INSPECTION DURING THIS OPERATION.
7. REPLACE REMOVED ORGANIC MATERIAL WITH GRAVEL BORROW COMPACTED TO 95% DRY DENSITY (MODIFIED PROCTOR METHOD) AND CRUSHED STONE (12" DEPTH BELOW CULVERT FOOTINGS).
8. INSTALL CULVERT ON FOOTINGS AND MORTAR JOINTS WITH HYDRAULIC CEMENT.
9. CONTRACTOR SHALL USE SANDBAGS AS REQUIRED TO DIRECT STORMWATER INTO NEW CULVERT DURING HEADWALL CONSTRUCTION. NOTE: ALL WORK AND SANDBAGS SHALL BE INSTALLED WITHIN THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS.
10. CONSTRUCT HEADWALLS AND BACKFILL AS REQUIRED.

SOIL EVALUATION DATA

SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING INC. ON 9/24/08. (TP 1-10) and 12/1/08 (TP 11-15)

TP1

(EL=335.0)

0"–3"	ORGANIC LITTER	OI
3"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–12"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
12"–32"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
32"–45"	LIGHT YELLOWISH BROWN VERY FINE SANDY LOAM/SILT LOAM	C1 (FRIABLE)
45"–134"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C2 (FRIABLE)

NO REFUSAL
115" WATER SEEPAGE
86" DESIGN GWT
32"-45" REDOX FEATURES (HANGING IN HORIZON)
RIDEM SOIL CATEGORY = 7m

TP2

(EL=338.0)

0"–3"	ORGANIC LITTER	OI
3"–8"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
8"–18"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
18"–28"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
28"–134"	LIGHT YELLOWISH BROWN GRAVELLY LOAMY SAND	C1 (FRIABLE)

NO REFUSAL
NO WATER SEEPAGE
86" DESIGN GWT
32" ISOLATED REDOX FEATURES (AROUND STONES)
RIDEM SOIL CATEGORY = 7m

TP3

(EL=359.0)

0"–3"	ORGANIC LITTER	OI
3"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–13"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
13"–30"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
30"–122"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

122" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP4

(EL=357.0)

0"–3"	ORGANIC LITTER	OI
3"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–15"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
15"–30"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
30"–96"	LIGHT OLIVE BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

96" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
96" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP5

(EL=365.5)

0"–2"	ORGANIC LITTER	OI
2"–5"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
5"–17"	DARK YELLOWISH BROWN VERY FINE SANDY LOAM	Bw1 (VERY FRIABLE)
17"–24"	YELLOWISH BROWN SANDY LOAM/COARSE SANDY LOAM	Bw2 (VERY FRIABLE)
24"–56"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)
56"–82"	LIGHT YELLOWISH BROWN VERY STONY GRAVELLY LOAMY SAND	C2 (FRIABLE)

82" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
82" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP6

(EL=384.5)

0"–2"	ORGANIC LITTER	OI
2"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–14"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
14"–26"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
26"–86"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

86" LARGE BOULDERS/POSSIBLE LEDGE
NO WATER SEEPAGE
86" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP7

(EL=396.0)

0"–2"	ORGANIC LITTER	OI
2"–2"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
2"–12"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
12"–28"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
28"–110"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

110" LARGE BOULDERS
NO WATER SEEPAGE
110" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP8

(EL=329.0)

0"–2"	ORGANIC LITTER	OI
2"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–17"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
17"–40"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
40"–120"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP9

(EL=409.5)

0"–2"	ORGANIC LITTER	OI
2"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–16"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
16"–42"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
42"–120"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP10

(EL=408.5)

0"–2"	ORGANIC LITTER	OI
2"–3"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
3"–18"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
18"–38"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
38"–90"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

90" LARGE BOULDERS
NO WATER SEEPAGE
90" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m

TP11

(EL=359.0)

0"–2"	ORGANIC LITTER	OI
2"–2"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
2"–24"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
24"–38"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
38"–120"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

120" NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

TP12

(EL=366.0)

0"–2"	ORGANIC LITTER	OI
2"–3"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
3"–18"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
18"–36"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
36"–120"	LIGHT YELLOWISH BROWN STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

120" NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

TP13

(EL=367.0)

0"–3"	ORGANIC LITTER	OI
3"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–20"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
20"–48"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
48"–120"	LIGHT YELLOWISH BROWN VERY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

120" NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO" REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

TP14

(EL=388.0)

0"–2"	ORGANIC LITTER	OI
2"–4"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
4"–15"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
15"–30"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
30"–110"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

110" LEDGE
NO WATER SEEPAGE
110" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 10MPI (FIELD MEARURED)

TP15

(EL=425.0)

0"–2"	ORGANIC LITTER	OI
2"–3"	DARK BROWN FINE SANDY LOAM	A (VERY FRIABLE)
3"–14"	DARK YELLOWISH BROWN FINE SANDY LOAM	Bw1 (VERY FRIABLE)
14"–32"	YELLOWISH BROWN VERY FINE SANDY LOAM	Bw2 (VERY FRIABLE)
32"–120"	LIGHT BROWNISH GRAY STONY GRAVELLY LOAMY SAND	C1 (FRIABLE)

NO REFUSAL
NO WATER SEEPAGE
120" DESIGN GWT
NO REDOX FEATURES
RIDEM SOIL CATEGORY = 7m
ACTUAL PERC. RATE= 5MPI (FIELD MEASURED)

STATE OF RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 2 2 2014 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

NOV 12 2014

• Civil
• Transportation
• Environmental
• Site Planning
• Surveying
• Permitting
• Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS
PLAN No. 3

DATE:	SCALE:
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C13-DETAIL3-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C13

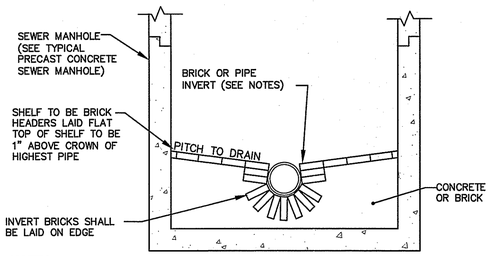
SHEET: 33 OF: 44

GENERAL SEWER NOTES

1. INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF CUMBERLAND SPECIFICATIONS AND REQUIREMENTS.
2. PRIOR TO RECEIVING AUTHORIZATION TO CONSTRUCT, ALL MATERIALS SHALL MEET THE STANDARDS AND RECEIVE THE WRITTEN APPROVAL, BASED ON MANUFACTURER'S DRAWINGS AND OTHER DATA, OF THE TOWN OF CUMBERLAND.
3. ALL SEWERAGE FACILITIES SHALL MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE.
4. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE AS-BUILT LOCATIONS PRIOR TO PIPE BACKFILL. AS-BUILT DRAWINGS SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES. PLANS SHALL INCLUDE LOCATION OF WYES.
5. NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
6. AFTER THE CONTRACTOR HAS "STAKED OUT" THE FACILITIES TO BE CONSTRUCTED AND HAS THE APPROVED MATERIALS ON THE JOB, THE TOWN OF CUMBERLAND SHALL BE NOTIFIED IN ADVANCE OF CONSTRUCTION IN ORDER FOR THEM TO ARRANGE FOR THEIR INSPECTOR. THE NOTIFICATION MUST MEET THE TOWN OF CUMBERLAND SEWER COMMISSION REQUIREMENTS.
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND MATERIALS, STANDARDS AND SPECIAL DETAILS, AND STANDARD SPECIFICATIONS, ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE IMMEDIATELY REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES FOR CONSTRUCTION WITHIN THE LIMITS OF WORK AS SHOWN ON THE DRAWINGS.
9. ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE LOAMED AND SEEDED.
10. LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY AUTHORITIES INCLUDING "DIG-SAFE" PRIOR TO STARTING WORK. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COST OF REPAIRS SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. RELATION TO WATER LINES:
    - A. HORIZONTAL SEPARATION: WHENEVER POSSIBLE, SEWERS SHOULD BE LAID AT A MINIMUM OF 10 FEET (3.0 m), HORIZONTALLY, FROM ANY EXISTING OR PROPOSED WATER LINE. SHOULD LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET, A SEWER MAY BE LAID CLOSER THAN 10 FEET TO A WATER LINE IF:
        1. IT IS LAID IN A SEPARATE TRENCH, OR IF
        2. IT IS LAID IN THE SAME TRENCH WITH THE WATER LINE LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND IF
        3. IN EITHER CASE THE ELEVATION OF THE TOP (CROWN) OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM (INVERT) OF THE WATER LINE.
    - B. VERTICAL SEPARATION: WHENEVER A SEWER MUST CROSS UNDER WATER LINES, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM OF THE WATER LINE. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER LINE SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR RECONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10 FEET (3.0 m) ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER LINE SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.
    - C. WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL AND/OR VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER LINE AND SEWER SHALL BE CONSTRUCTED OF MECHANICAL-JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT BASED ON WATER TIGHTNESS AND STRUCTURAL SOUNDNESS. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING REQUIRED IN THE SEWER INSTALLATION.
13. THE PROPOSED GRAVITY SANITARY SEWER PIPE SHALL BE PVC ASTM 3034 SDR 35, UNLESS OTHERWISE SHOWN ON PLANS. PIPE SIZE TO MATCH UTILITY PLAN.
14. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE ELEVATION OF EXISTING SEWER LINE PRIOR TO INSTALLATION.

SEWER TRENCH NOTES

1. MINIMUM WIDTH (W) OF TRENCH IS EQUAL TO THE INSIDE DIAMETER OF THE PIPE PLUS 12" EACH SIDE.
2. SOIL UNDER CRUSHED STONE FOUNDATION SHALL BE UNDISTURBED AND COMPACTED MATERIAL WITH SEVERAL PASSES OF A VIBRATORY PLATE COMPACTOR TO ATTAIN 95% MAX. DENSITY (MOD. METHOD).
3. CRUSHED STONE FOUNDATION 3/4" MAXIMUM SIZE, SHALL BE PLACED 6" UNDER THE PIPE AND UP TO THE PIPE LAID THEREON, CRUSHED STONE PULLED AGAINST THE PIPE SIDES TO FIRMLY HOLD THE PIPE IN PLACE.
4. CRUSHED STONE HAUNCHING 3/4" MAXIMUM SIZE SHALL BE BROUGHT LEVEL TO THE TOP OF THE PIPE AND OUT TO THE TRENCH WALL AT THIS ELEVATION FOR ALL PIPE.

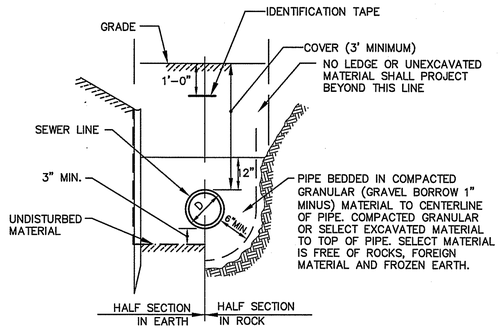


NOTES:

1. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF CEMENT CONCRETE OR BRICK IN MORTAR.
2. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST
3. NO SKIM COAT SHALL BE PLACED ON BRICK INVERTS
4. SEWER PIPE MAY BE RUN THROUGH MANHOLE AND USED AS INVERT. TOP HALF OF PIPE TO BE CUT AWAY AT THE TOWNS DISCRETION.
5. INVERTS TO BE CONSTRUCTED WITH S&H RED SEWER BRICK
6. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE REQUIREMENTS OF THE TOWN OF CUMBERLAND.

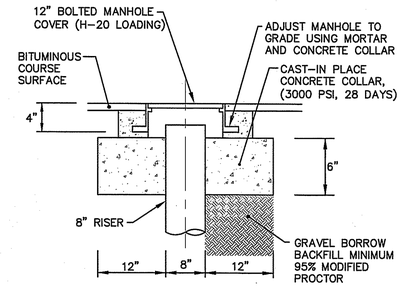
TYPICAL BRICK INVERT SECTION FOR SANITARY MANHOLES

NOT TO SCALE



TYPICAL SEWER LINE TRENCH DETAIL

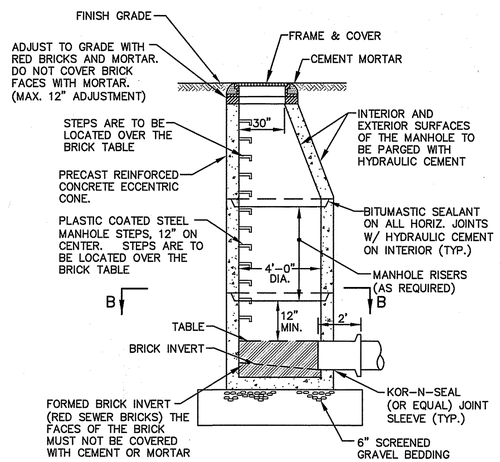
NOT TO SCALE



NOTE:
CONCRETE COLLAR IS NOT REQUIRED IN LANDSCAPE AREAS.

ROOF DRAIN CLEAN-OUT DETAIL IN PAVEMENT

NOT TO SCALE

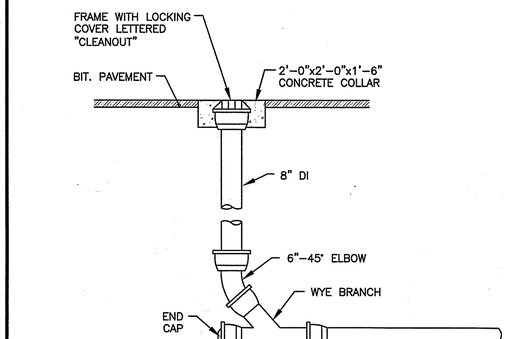


NOTES:

1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I.D.O.T. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.12 SQ. IN. / LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN/LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE SECTION.
5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
6. STEPS SHALL CONFORM TO R.I.D.O.T. STD. 5.3.0 (OR AS SPECIFIED IN THE CONTRACT) AND SHALL BE INSTALLED AT THE CASTING PLANT.
7. ALTERNATE FLAT TOP SLAB CAN BE USED WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
8. ALTERNATE FLAT TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE R.I.D.O.T. STD. 4.7.2).
9. ALL JOINTS AND PINHOLES TO BE PLUGGED INSIDE AND OUTSIDE WITH HYDRAULIC CEMENT.

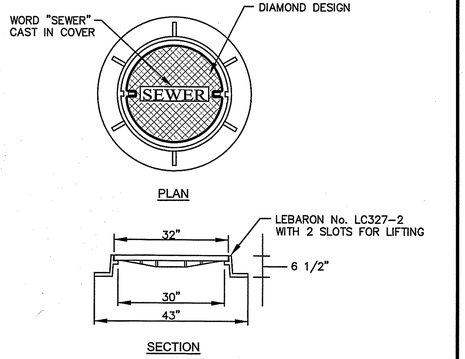
SANITARY MANHOLE DETAIL - TYPICAL

NOT TO SCALE



CLEANOUT DETAIL IN PAVEMENT

NOT TO SCALE

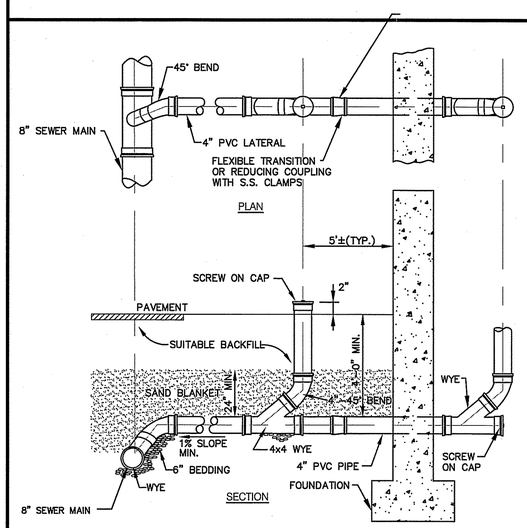


NOTES

1. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.
2. THE WORD "SEWER" SHALL BE CAST IN THE COVER.
3. VENTILATION HOLES OF ANY SIZE ARE NOT ALLOWED.

SANITARY MANHOLE FRAME AND COVER DETAIL

NOT TO SCALE



STANDARD BUILDING CONNECTION DETAIL IN LAWN

NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 22 2014 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

NOV 12 2014

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STEPHEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 4

DATE:	SCALE:
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C14-DETAIL4-R2.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

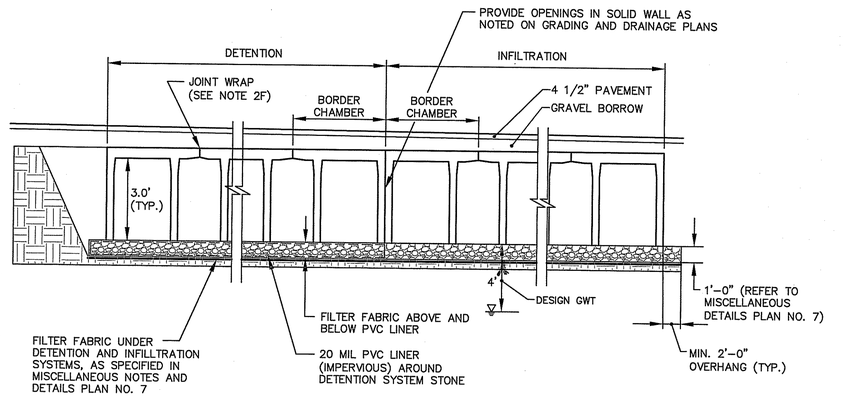
DRAWING NUMBER

C14

SHEET: 34 *OF:* 44

INFILTRATION SYSTEM CONSTRUCTION NOTE

1. WITHIN THE INFILTRATION SYSTEM, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SUBSOIL AREAS (A AND B HORIZONS) AND ANY EXISTING SOILS THAT YIELD A PERMEABILITY RATE <2.41 INCHES/HOUR. CONTRACTOR SHALL COORDINATE A BOTTOM BED INSPECTION WITH OWNER AND ENGINEER. IF NECESSARY THE AREA SHALL BE PREPARED WITH SAND FILL SOIL MEETING THE MEDIA REQUIREMENTS OF SAND FILTERS, AS DESCRIBED IN THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, DECEMBER 2010, SECTION 5.5 (ASTM C–33 SAND). THE DEPTH OF EXISTING SOIL REMOVAL SHALL BE VERIFIED BY THE ENGINEER. PLACEMENT OF THE SAND FILL (ASTM C–33 SAND), SHALL BE USED TO BRING THE BOTTOM OF BASIN TO THE DESIGN ELEVATIONS.
2. INFILTRATION SYSTEM CONSTRUCTION AND MATERIALS SHALL CONFORM TO RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL. DECEMBER 2010, APPENDIX F.3 CONSTRUCTION STANDARDS/SPECIFICATIONS FOR INFILTRATION BMP'S. AFTER CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE FINAL INSPECTIONS WITH THE OWNER IN ACCORDANCE WITH TABLE F–5 IN APPENDIX F.3.
3. THE CONTRACTOR IS REQUIRED TO SUBMIT A LIST OF MATERIALS, GRADATIONS AND THE NAME AND ADDRESS OF THE SUPPLIERS TO THE ENGINEER FOR APPROVAL PRIOR TO BRINGING MATERIAL ON SITE. MATERIAL CERTIFICATIONS SHALL ALSO BE REQUIRED FOR REVIEW AND APPROVAL.
4. THE CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE ABOVE REFERENCED MANUAL. THE MANUAL CAN BE FOUND AT: http://www.dem.ri.gov/pubs/regs/water/swmanual.pdf.
5. GREAT CARE MUST BE TAKEN TO PREVENT THE INFILTRATION AREA FROM COMPACTION; BY MARKING OFF THE INFILTRATION BASIN AND UNDERGROUND INFILTRATION LOCATION BEFORE THE START OF CONSTRUCTION, AND BY CONNECTING UPSTREAM DRAINAGE AREAS ONLY AFTER CONSTRUCTION IS COMPLETE AND THE CONTRIBUTING AREA IS STABILIZED.
6. IF LARGE ROCKS OR BOULDERS ARE FOUND WITHIN 36" BELOW THE INFILTRATION SYSTEMS, OR WITHIN A 10' PERIMETER AROUND SYSTEM, THE CONTRACTOR SHALL REMOVE THE ROCKS/BOULDERS AND REPLACE WILL GRAVEL BORROW. CONTRACTOR SHALL COORDINATE WITH ENGINEER.

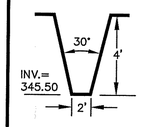


TYPICAL DETAIL REFERENCING UNDERGROUND INFILTRATION AND DETENTION SYSTEM STORMTRAP 3-0 INSTALLATION DETAIL

NOT TO SCALE

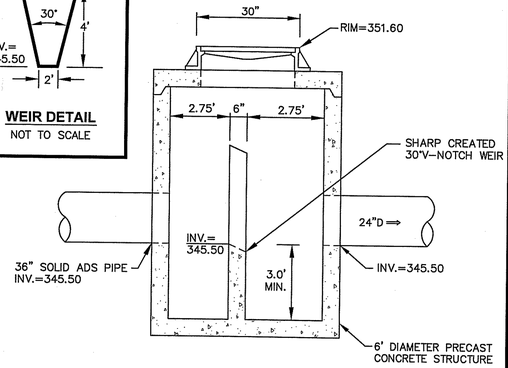
NOTE: CONTRACTOR TO COORDINATE INSTALLATION WITH MANUFACTURER AND ENGINEER.

REFER TO MISCELLAENOUS DETAILS PLAN NO. 7 FOR SPECIFIC STORMTRAP INSTALLATION NOTES AND DETAILS



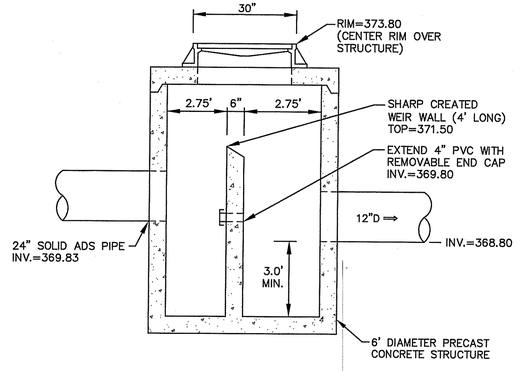
WEIR DETAIL

NOT TO SCALE



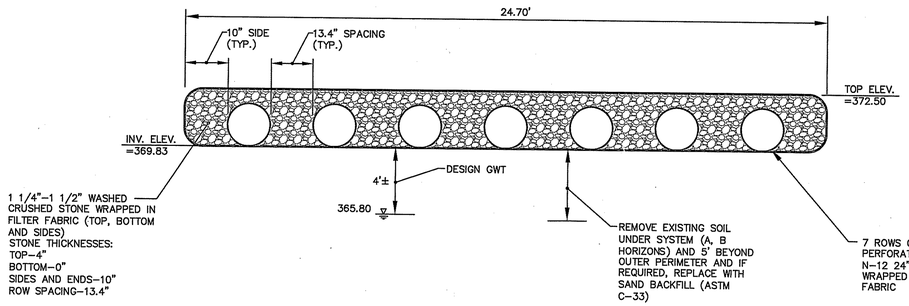
UNDERGROUND DETENTION SYSTEM NO. 1 OUTLET CONTROL STRUCTURE DETAIL (DMH 8)

NOT TO SCALE



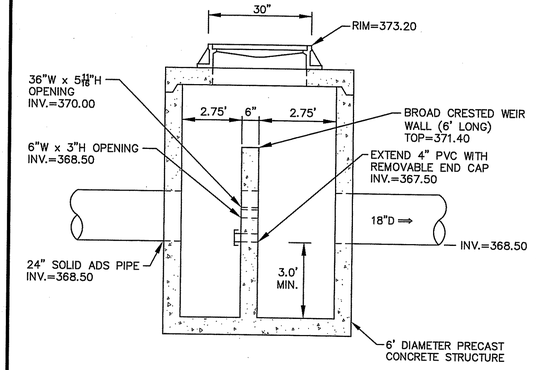
UNDERGROUND INFILTRATION SYSTEM NO. 2 OUTLET CONTROL STRUCTURE DETAIL (DMH 25)

NOT TO SCALE



UNDERGROUND INFILTRATION SYSTEM NO. 2 SECTION

NOT TO SCALE

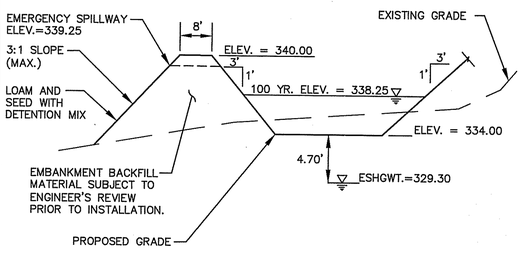


UNDERGROUND DETENTION SYSTEM NO. 2 OUTLET CONTROL STRUCTURE DETAIL (DMH 16)

NOT TO SCALE

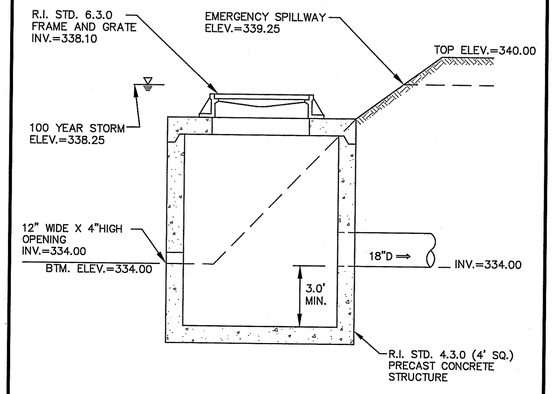
EMBANKMENT NOTES

1. THE DETENTION BASIN EMBANKMENT IS TO BE CONSTRUCTED WITH APPROVED COMMON BORROW. NO SOIL/ROCK GRATER THAN 2" SHALL BE UTILIZED. COMMON BORROW SHALL MEET OR EXCEED AN IN–PLACE DENSITY OF 100 lb./cf. ALL MATERIAL SHALL BE PLACED IN 8 TO 12 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY. FILL MATERIAL WILL NOT CONTAIN FROZEN MATERIALS OR BE PLACED ON FROZEN SURFACES. COMMON BORROW SHALL MEET SPECIFICATION SECTION 202.20 IN THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 OR LATEST EDITION.
2. UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, THE EMBANKMENT AREAS ARE TO BE EXCAVATED. IF ANY ORGANIC OR UNSUITABLE MATERIAL IS ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR REVIEW OF EXCAVATION AREA. THE DEPTH OF EXCAVATION WILL BE DETERMINED BY THE ENGINEER BASED UPON THE LOCAL CONDITIONS. NO FILL MATERIAL SHALL BE PLACED UNTIL THE FOUNDATION PREPARATION HAS BEEN COMPLETED. ALL WATER SHALL BE REMOVED FROM THE FOUNDATION PRIOR TO PLACING THE EMBANKMENT.
3. THE FILL MATERIAL MUST BE SPREAD IN UNIFORM LAYERS AND FALL WITHIN THE SPECIFIED OPTIMUM WATER CONTENT RANGE IN ORDER TO ACHIEVE THE REQUIRED COMPACTION. EACH LAYER IS TO BE COMPACTED PRIOR TO LAYING AN ADDITIONAL LAYER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER HIS SELECTED METHOD OF COMPACTION, COMPACTION EQUIPMENT AND THE SEQUENCE OF OPERATIONS NECESSARY TO OBTAIN THE REQUIRED DENSITY. THE WATER CONTENT AT COMPACTION SHOULD BE IN THE RANGE BETWEEN ONE PERCENTAGE POINT BELOW AND TWO PERCENTAGE POINTS ABOVE STANDARD AASHTO OPTIMUM WATER CONTENT. THE MATERIAL SHALL BE PROCESSED TO A UNIFORM WATER CONTENT BY ADDING WATER TO THE MATERIAL IN ADVANCE OF THE FILL PLACEMENT.
4. BACKFILL MATERIAL AROUND STRUCTURES AND PIPE IS TO BE PLACED TO PREVENT THE MOVEMENT OF WATER. THE OPTIMUM WATER CONTENT MUST BE MAINTAINED IN THE SAME RANGE AS IN THE EMBANKMENT. THE BACKFILL MUST BE PLACED IN LAYERS LESS THAN 4 INCHES IN THICKNESS AND DISTRIBUTED UNIFORMLY AROUND THE STRUCTURE/PIPE. ALL COMPACTION WILL BE TO 95% MAXIMUM DENSITY AND MAY REQUIRE HAND TAMPERS OR SMALL POWER EQUIPMENT.
5. EMBANKMENT DAMAGE COMMONLY RESULTS FROM IMPROPER CONSTRUCTION OF CONDUIT AND STRUCTURAL BACKFILL WITHIN THE EMBANKMENT BECAUSE SEEPAGE WILL OCCUR WITH IMPROPER BACKFILL AND COMPACTION. THEREFORE, STRUCTURES AND PIPES ARE TO BE CONSTRUCTED AS THE EMBANKMENT CONSTRUCTION RISES TO THE RESPECTIVE PIPE OR STRUCTURE. THIS WILL PREVENT THE DISTURBANCE OF CONSTRUCTED EMBANKMENT MATERIAL. PIPES FROM THE OUTLET STRUCTURE TO THE OUTFALL SHALL HAVE AN ANTI–SEEP COLLAR.



DETENION BASIN DETAIL

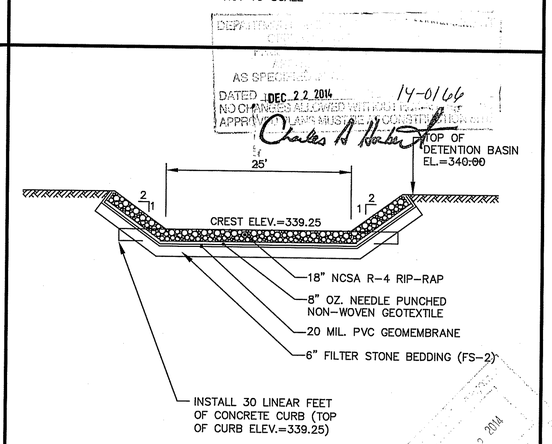
NOT TO SCALE



* USE TRASH RACK ENCLOSURE (SEE MISCELLANEOUS DETAILS PLAN NO. 8)

DETENION BASIN OUTLET CONTROL STRUCTURE DETAIL

NOT TO SCALE



EMERGENCY OVERFLOW WEIR DETAIL

NOT TO SCALE

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CROSSMAN ENGINEERING

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS PLAN No. 5

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035–C15–DETAIL5–R2.dwg

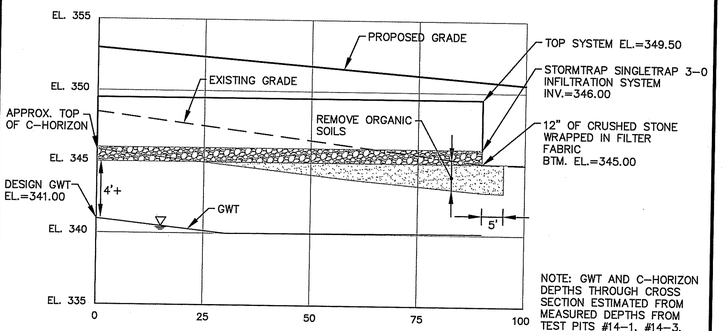
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

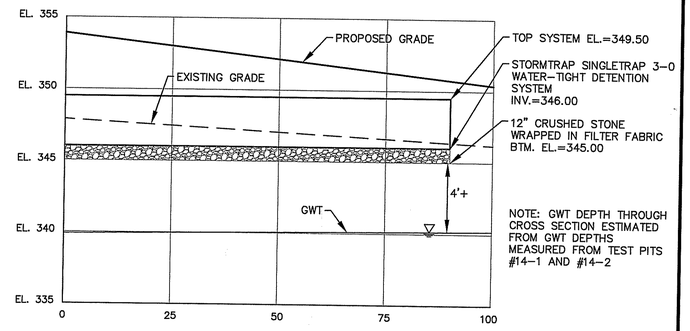
C15

SHEET: 35 *OF:* 44



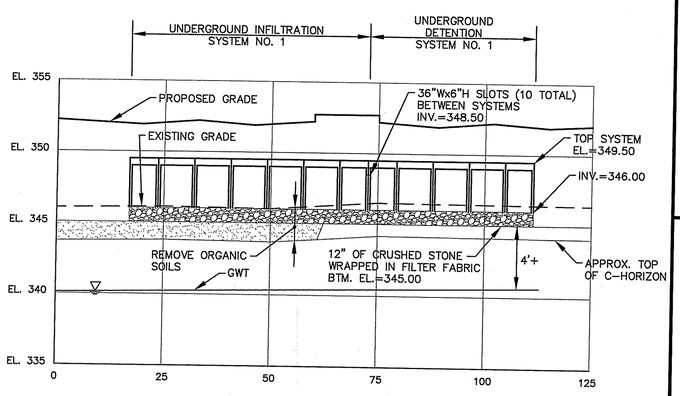
UNDERGOUND INFILTRATION SYSTEM No. 1
CROSS-SECTION A-A (LOOKING NORTH EAST)
NOT TO SCALE

NOTE: GWT AND C-HORIZON DEPTHS THROUGH CROSS SECTION ESTIMATED FROM MEASURED DEPTHS FROM TEST PITS #14-1, #14-3, AND #14-4



UNDERGOUND DETENTION SYSTEM No. 1
CROSS-SECTION B-B (LOOKING NORTH EAST)
NOT TO SCALE

NOTE: GWT DEPTH THROUGH CROSS SECTION ESTIMATED FROM GWT DEPTHS MEASURED FROM TEST PITS #14-1 AND #14-2

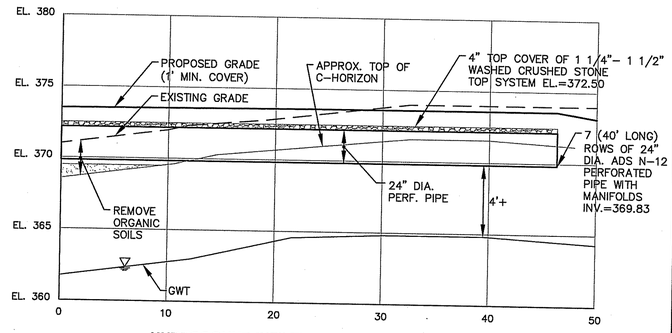


UNDERGOUND INFILTRATION SYSTEM No.1
and UNDERGROUND DETENTION SYSTEM No. 1
CROSS-SECTION C-C (LOOKING EAST)
NOT TO SCALE

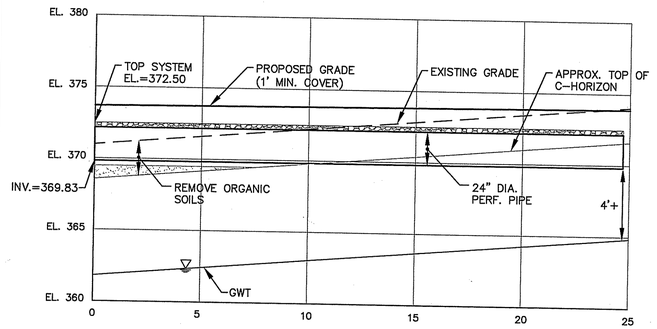
NOTE: GWT AND C-HORIZON DEPTHS THROUGH CROSS SECTION ESTIMATED FROM MEASURED DEPTHS FROM TEST PITS #14-1, #14-2, AND #14-3

TEST PIT DATA

TEST PIT #	SURFACE EL.	ESHWT DEPTH	ESHWT EL.	C-HORIZON DEPTH	C-HORIZON EL.
14-1	346.20	72"	340.20	24"	344.20
14-2	348.30	96"	340.30	32"	345.63
14-3	347.00	84"	340.00	32"	344.33
14-4	350.00	90"	342.50	31"	347.42



UNDERGOUND INFILTRATION SYSTEM No. 2
CROSS-SECTION D-D (LOOKING SOUTH WEST)
NOT TO SCALE



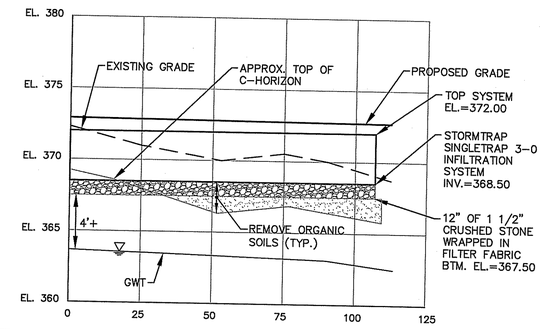
UNDERGOUND INFILTRATION SYSTEM No. 2
CROSS-SECTION E-E (LOOKING SOUTH EAST)
NOT TO SCALE

TEST PIT DATA

TEST PIT #	SURFACE EL.	ESHWT DEPTH	ESHWT EL.	C-HORIZON DEPTH	C-HORIZON EL.
14-9	375.00	110"	365.83	29"	372.58

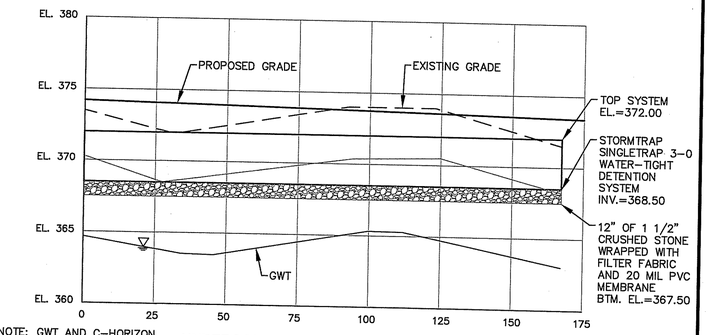
NOTES:

1. CRUSHED STONE SHALL BE 1 1/2" DIAMETER, DOUBLE WASHED STONE
2. REMOVE EXISTING ORGANIC SOIL A & B HORIZONS UNDER SYSTEM AND 5' BEYOND OUTER PERIMETER AND REPLACE WITH SAND BACKFILL (ASTM C-33)



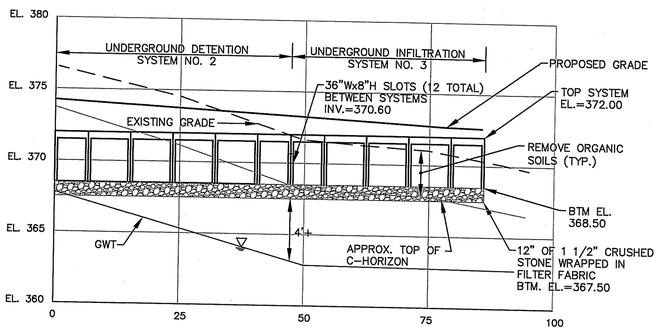
NOTE: GWT AND C-HORIZON DEPTHS THROUGH CROSS SECTION ESTIMATED FROM MEASURED DEPTHS FROM TEST PITS #14-5 AND #14-8

UNDERGOUND INFILTRATION SYSTEM No. 3
CROSS-SECTION F-F (LOOKING SOUTH)
NOT TO SCALE



NOTE: GWT AND C-HORIZON DEPTHS THROUGH CROSS SECTION ESTIMATED FROM MEASURED DEPTHS FROM TEST PITS #14-6 AND #14-7

UNDERGOUND DETENTION SYSTEM No. 2
CROSS-SECTION G-G (LOOKING SOUTH)
NOT TO SCALE



UNDERGOUND INFILTRATION SYSTEM No. 3
and UNDERGROUND DETENTION SYSTEM No. 2
CROSS-SECTION H-H (LOOKING EAST)
NOT TO SCALE

TEST PIT DATA

TEST PIT #	SURFACE EL.	ESHWT DEPTH	ESHWT EL.	C-HORIZON DEPTH	C-HORIZON EL.
14-5	370.00	80"	363.33	26"	367.83
14-6	372.00	102"	363.50	43"	368.43
14-7	373.40	101"	365.00	36"	370.40
14-8	366.50	117"	356.75	40"	363.17

CITY OF CUMBERLAND
PRESENTED FOR APPROVAL
AS SPECIFIED
DATED DEC 22 2014
NO CHANGES ALLOWED WITHOUT
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
14-0166
Charles A. Horbert

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STEVEN M. CABRAL
No. 14847
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and
PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS
PLAN No. 6

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035-C16-DETAIL6-R2.dwg

REVISIONS

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1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C16

SHEET: 36 *OF:* 44

STORMTRAP INSTALLATION SPECIFICATION

1. STORMTRAP MODULES SHALL BE MANUFACTURED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE OPENINGS.

2. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891-09, STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRE-CAST CONCRETE UTILITY STRUCTURES. THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

   A. SPECIFICATIONS ON THE ENGINEER'S DRAWINGS SHALL TAKE PRECEDENCE.

   B. THE STONE FOUNDATION HAS BEEN DESIGNED BASED ON THE FOLLOWING ASSUMPTIONS. THESE ASSUMPTIONS WILL NEED TO BE VERIFIED BY A GEOTECHNICAL ENGINEER WHICH WILL NEED TO BE EMPLOYED BY THE OWNER.

      1. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS AT THE ELEVATION THE STONE FOUNDATION IS TO BE PLACED. IF A STONE FOUNDATION IS TO BE USED FOR THIS CONDITION, THE BEARING PRESSURE OF THE SOILS AT THIS LEVEL WILL NEED TO MEET OR EXCEED 3500 PSF ALLOWABLE CAPACITY. IF THIS IS NOT POSSIBLE, THE GEOTECHNICAL ENGINEER MUST MAKE REMEDIAL RECOMMENDATIONS IN ORDER TO REACH THIS CAPACITY. IF THIS IS NOT POSSIBLE, THE STONE FOUNDATION MAY NOT BE AN OPTION FOR THIS LOCATION.

      2. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO EVALUATE A SOURCE OF STONE AGGREGATES THAT WILL BE PLACED ON THE PROPERLY COMPACTED 3500 PSF ALLOWABLE CAPACITY SOILS. THE STONE BASE COURSE FOR WHICH THE STORMTRAP SYSTEM WILL BEAR DIRECTLY ON WILL NEED TO ATTAIN A MINIMUM 20,000 PSF ALLOWABLE BEARING CAPACITY. STORMTRAP HAS RECOMMENDED A MINIMUM BED OF 3/4" DIAMETER ANGULAR STONE, WELL COMPACTED AND SEATED, WITH NO FINES AT A 3 INCH THICKNESS AND AN ADDITIONAL 3 INCH DIAMETER CRUSHED ANGULAR STONE, WELL COMPACTED AND SEATED, WITH NO FINES AT A 15 INCH THICKNESS. PLEASE NOTE THAT THESE ARE ONLY MINIMUM RECOMMENDATIONS AND A QUALIFIED GEOTECHNICAL ENGINEER SHALL BE USED TO DETERMINE THE EXACT REQUIREMENTS FOR THE LOCATIONS THAT THE STORMTRAP SYSTEM IS TO BE LOCATED.

      3. THE CONTRACTOR SHALL REMOVE ANY AND ALL EXPANDABLE OR COLLAPSIBLE SOILS AT THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER.

      4. THE STONE SHALL BE INSTALLED A MINIMUM OF 2'-0" BEYOND THE LIMITS OF THE STORMTRAP MODULES PERIMETER.

      5. USE CRUSHED ANGULAR STONE AND COMPACT THE STONE USING A VIBRATING ROLLER WITH IT'S FULL DYNAMIC FORCE APPLIED TO ACHIEVE A FLAT SURFACE.

      6. DISK, DRY, AND COMPACT THE TOP 8" OF THE SUBGRADE SOILS TO 95% OF THE STANDARD DRY DENSITY AND 110% OPTIMUM MOISTURE CONTENT.

   C. AGGREGATE SHALL BE GRADED TO WITHIN +/- 1/4" OF THE GRADE SHOWN ON THE PLANS

   D. MINIMUM 3500 PSF SOIL BEARING CAPACITY. SOIL STRENGTHS TO BE VERIFIED IN FIELD BY OTHERS.

   E. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 3/4". IF THE SPACE EXCEEDS 3/4", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

   F. ALL EXTERIOR JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN BONDED TO A WOVEN HIGHLY PUNCTURE RESISTANT POLYMER WRAP CONFORMING TO ASTM C891-09 AND SHALL BE 9"-0" WIDE WITH INTEGRATED PRIMER SEALANT AS APPROVED BY STORMTRAP. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

      1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE THE JOINT WRAP IS TO BE APPLIED.

      2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

   G. THE FILL PLACED AROUND THE STORMTRAP UNITS MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY OR OTHERWISE SPECIFIED BY ENGINEER. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES BOUNDING OR WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGE ACTION. (REFERENCE ARTICLE 502.10 I.D.O.T. S.S.R.B.C.) CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MATERIAL SHALL BE CLEAN, CRUSHED, ANGULAR No.5 (AASHTO M43) AGGREGATE.

   H. DISTRIBUTE THE FILL OVER THE SYSTEM WITH A TRACKED CONSTRUCTION VEHICLE, DO NOT EXCEED THE MAXIMUM ALLOWABLE GROUND PRESSURE SHOWN IN TABLE 1.

   TABLE 1.

FILL DEPTH	TRACK WIDTH	MAX GROUND PRESSURE
12"	12"	1690 psf
	18"	1219 psf
	24"	1111 psf
	30"	1000 psf
	36"	924 psf

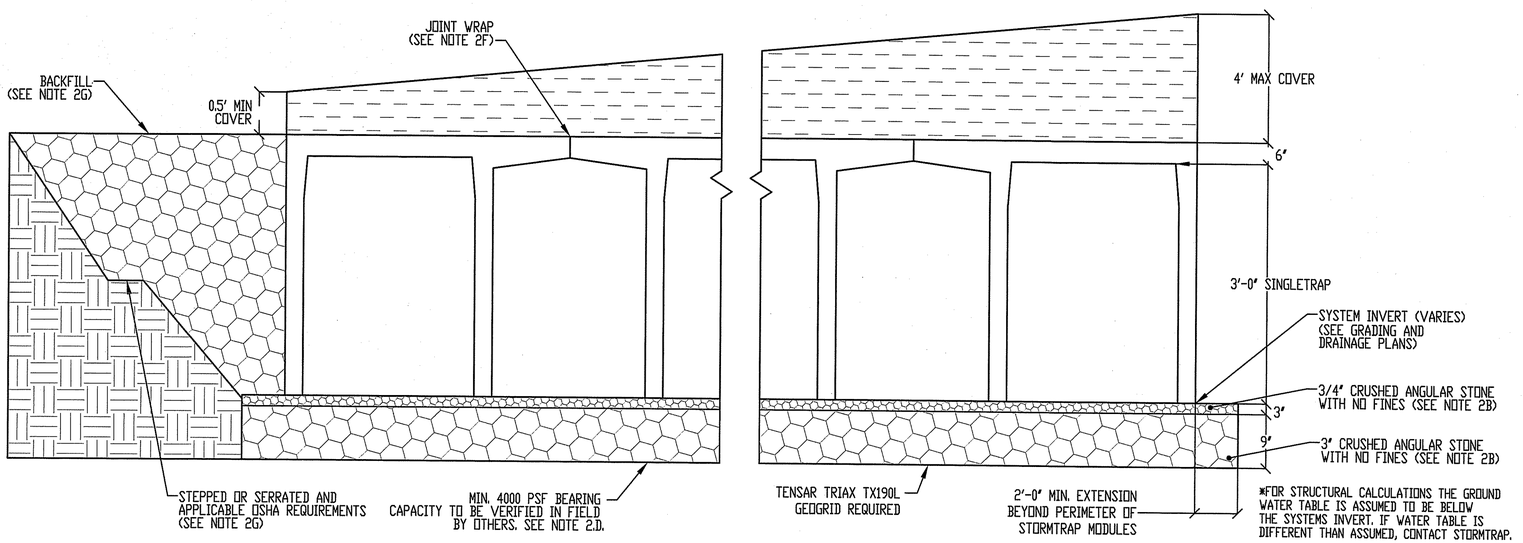
   MAXIMUM ALLOWABLE GROUND PRESSURE IS THE VEHICLE OPERATING WEIGHT DIVIDED BY THE TOTAL VEHICLE TRACK-GROUND CONTACT AREA, FOR BOTH TRACKS.

   USE A WALK-BEHIND OR VIBRATORY ROLLER, NOT TO EXCEED A MAXIMUM GROSS VEHICLE WEIGHT OF 12,000# AND A MAXIMUM DYNAMIC FORCE OF 20,000#, WITH A MINIMUM OF 12" OF COMPACTED FILL OVER THE SYSTEM.

   FULL DUMP TRUCKS MUST NOT BE DRIVEN OR DUMP STONE OVER THE SYSTEM. RAISING THE BODY TO DUMP STONE SIGNIFICANTLY INCREASES THE REAR WHEEL LOADS.

STORMTRAP SPECIFICATION

1. TOTAL COVER: MIN. 0.5' MAX. 4' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
2. CONCRETE CHAMBER DESIGNED FOR AASHTO HS-20 HIGHWAY LOADING. MIN. SOIL PRESSURE 3500 PSF.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW THE SYSTEMS INVERT. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. FOR STRUCTURAL CALCULATIONS THE SOIL DENSITY IS ASSUMED TO BE 120 PCF.



RECOMMENDED ACCESS OPENING SPECIFICATION

1. TYPICAL ACCESS OPENINGS FOR THE STORMTRAP SYSTEM ARE 2'-0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 2'-0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'-0" OF CLEARANCE IN ALL DIRECTIONS FROM THE EDGE OF THE STORMTRAP UNITS.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3-PFC (SEE DETAIL TO THE RIGHT) ARE PROVIDED INSIDE ANY UNIT WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE UNIT IS TO BE PLACED A DISTANCE OF 1'-0" FROM THE INSIDE EDGE OF THE STORMTRAP UNITS. ALL ENSUING STEPS SHALL BE PLACED WITH A MAXIMUM DISTANCE OF 1'-4" BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE UNIT.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO COINCIDE WITH THE ACCESS OPENING OR THE CENTER OF GRAVITY OF THE UNIT AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST ONE ACCESS OPENING PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (BY OTHERS)

RECOMMENDED PIPE OPENING SPECIFICATION

1. PIPE OPENINGS SHALL MAINTAIN A MINIMUM 1'-0" OF CLEARANCE FROM A VERTICAL EDGE OF THE STORMTRAP UNIT.
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY UNIT HEIGHT. PREFERRED OPENING SIZE ø 36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'-0" CONCRETE COLLAR, AND A AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH, AS SHOWN. A STRUCTURAL GRADE CONCRETE OR GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH NON-SHRINK GROUT.

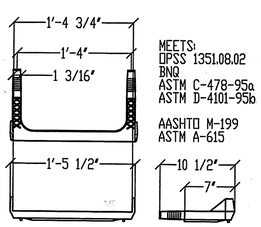
RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

1. CLEAN AND LIGHTLY LUBRICATE ALL OF PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

SPLASH PAD & GEOWEB SPECIFICATION

1. THE APPROVED GEOWEB SHALL BE PRESTO GEOWEB (GW30V3). THE GEOWEB NOMINAL DIMENSIONS SHALL BE 9-FT x 25-FT.
2. SPLASH PAD AND GEOWEB SHALL BE INSTALLED PRIOR TO INSTALLATION OF THE STORMTRAP UNITS
3. THE GEOWEB INFILL MATERIAL SHALL BE AASHTO M43 #5 AGGREGATE(SEE DETAIL A).
4. THE CONCRETE SPLASH PAD SHALL BE INSTALLED WITHIN THE GEOWEB AND IS REQUIRED AT ALL PIPE ENTRY LOCATIONS. SEE DETAIL B & C.
5. THE GEOWEB EDGE SHALL BE INSTALLED 1-FT BEYOND THE OUTER PERIMETER OF THE STORMTRAP SYSTEM.
6. THE GEOWEB LONGITUDAL DIMENSION (25-FT) SHALL BE INSTALLED PARALLEL TO THE STORMTRAP LEGS.
7. THE CONCRETE SPLASH PAD AND GEOWEB SHALL BE CENTERED AT THE PIPE PENETRATION.
8. SPLASH PAD DIMENSIONS COULD VARY IN UNITS THAT ARE LESS THAN 15'-4" IN LENGTH.

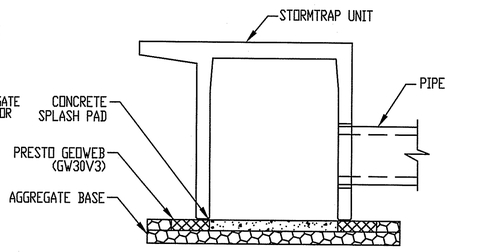
3'-0" SINGLETRAP



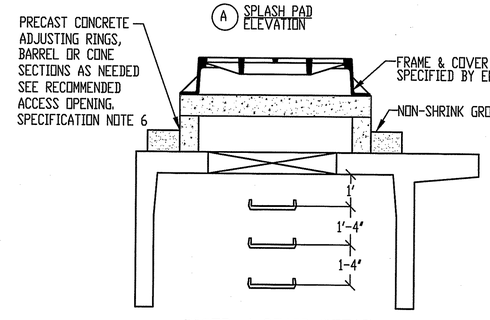
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DPSS 1351.08.02
BNQ
ASTM C-478-95a
ASTM D-4101-95b

AASHTO M-199
ASTM A-615

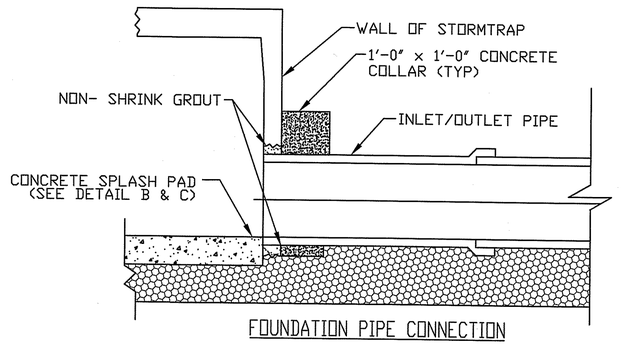
STEP DETAIL



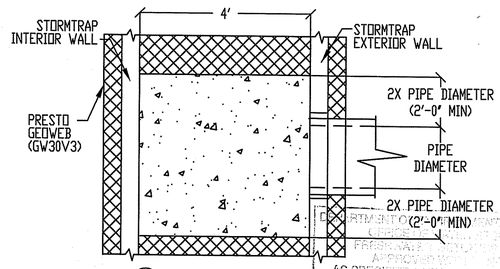
A SPLASH PAD
ELEVATION



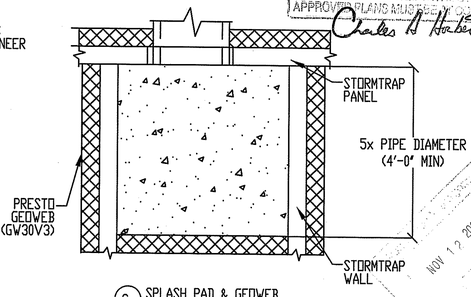
RISER / STAIR DETAIL



FOUNDATION PIPE CONNECTION



B SPLASH PAD & GEOWEB
PLAN VIEW - SIDE WALL



C SPLASH PAD & GEOWEB
PLAN VIEW - END PANEL

AS SPECIFIED IN
APPROVAL LETTER
DATED: DEC 22 2014 14-0166
NO CHANGES ALLOWED WITHOUT
APPROVAL PLANS MUST BE
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STEVEN M. CABRAL
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PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and
PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS
PLAN No. 7

DATE:	SCALE:
AUGUST 2014	NOT TO SCALE

DWG. NAME: 2035-C17-DETAIL7-R2.dwg

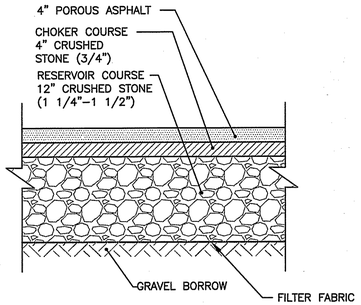
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C17

SHEET: 37 OF: 44



NOTES:
1. POROUS PAVEMENT MATERIALS AND INSTALLATION SHALL BE IN CONFORMANCE WITH SECTION 5.4 OF THE RI STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, 2010.
2. POROUS PAVEMENT SHALL HAVE AT LEAST 15% OPEN SURFACE AREA. PAVEMENT MIX SHALL BE SUBMITTED TO ENGINEER PRIOR TO PAVING.

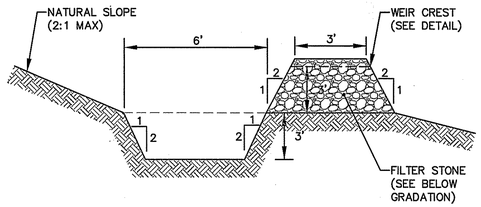
TYPICAL POROUS PAVEMENT STRUCTURE DETAIL

NOT TO SCALE

GRADATIONS AND COMPACTION OF CHOKER AND RESERVOIR COURSE MATERIAL

US STANDARD SIEVE SIZE (INCHES)	PERCENT PASSING: CHOKER COURSE (AASHTO No. 57)	PERCENT PASSING: RESERVOIR COURSE (AASHTO No. 3)
6	–	–
2 1/2	–	100
2	–	90–100
1 1/2	100	35–70
1	95–100	0–15
3/4	–	–
1/2	25–60	0–5
3/8	–	–
#4	0–10	–
#8	0–5	–
#200	–	–
% COMPACTION ASTM D698 / AASHTO T99	95	95

SOURCE:
RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, DECEMBER 2010



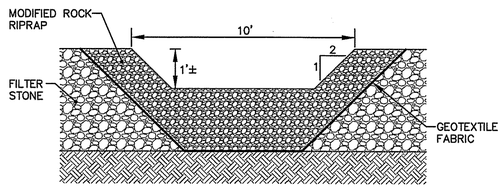
TEMPORARY SEDIMENT TRAP DETAIL

NOT TO SCALE

NOTES:
1. FILTER STONE SHALL MEET THE REQUIREMENTS OF R.I.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.01.09 TABLE 1, COLUMN V FILTER STONE.

US STANDARD SIEVE SIZE (INCHES)	FILTER STONE
1	100
3/4	70–85
1/2	10–40
3/8	0–20
#4	0–5

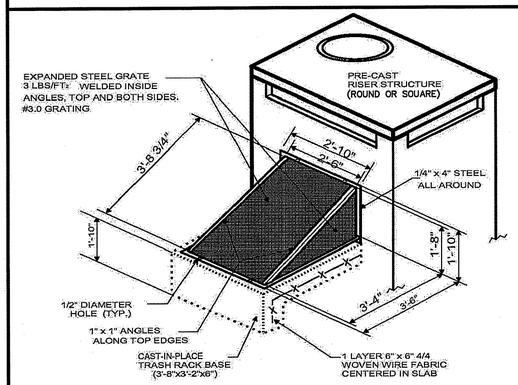
GRADATION OF FILTER STONE MATERIAL



TEMPORARY SEDIMENT TRAP OUTLET DETAIL

NOT TO SCALE

NOTES:
1. THE TEMPORARY SEDIMENT TRAPS MUST OUTLET ONTO UNDISTURBED, STABILIZED GROUND.
2. CONTRACTOR SHALL INSTALL 1 OUTLET PER 100' LENGTH OF TEMPORARY SEDIMENT TRAP (1 OUTLET MIN. PER TEMPORARY SEDIMENT TRAP).
3. THE MODIFIED ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF THE R.I.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.10.0.3.2.
4. CONTRACTOR MUST REFER TO THE INSTALLATION, INSPECTION, MAINTENANCE, AND REMOVAL REQUIREMENTS PROVIDED IN THE R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, AS AMENDED.



NOTES:
1. BRACING TO BE ADJUSTED TO CREATE FLUSH SEAL AGAINST CIRCULAR RISER STRUCTURES.
2. DIMENSIONS SHALL BE ADJUSTED TO FIT ORIFICE CONFIGURATIONS.

TYPICAL TRASH RACK DETAIL

NOT TO SCALE

PATIO NOTE

PROPOSED PATIO AREAS SHALL BE CONSTRUCTED WITH PAVER BLOCKS HAVING SPACING APPROPRIATE TO ALLOW INFILTRATION BETWEEN BLOCKS. FINE STONE/FILTER STONE BASE (OR EQUAL) SHALL BE USED BELOW BLOCKS.

Insert Note Here

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE ATTACHED LETTER
DATED DEC 22 2014 FILE # 14-0166
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

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JOHN M. CABRAL
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PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11 and
PLAT MAP 52 LOT 360
ZONING DISTRICT I-1/PDO

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

MISCELLANEOUS DETAILS
PLAN No. 8

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

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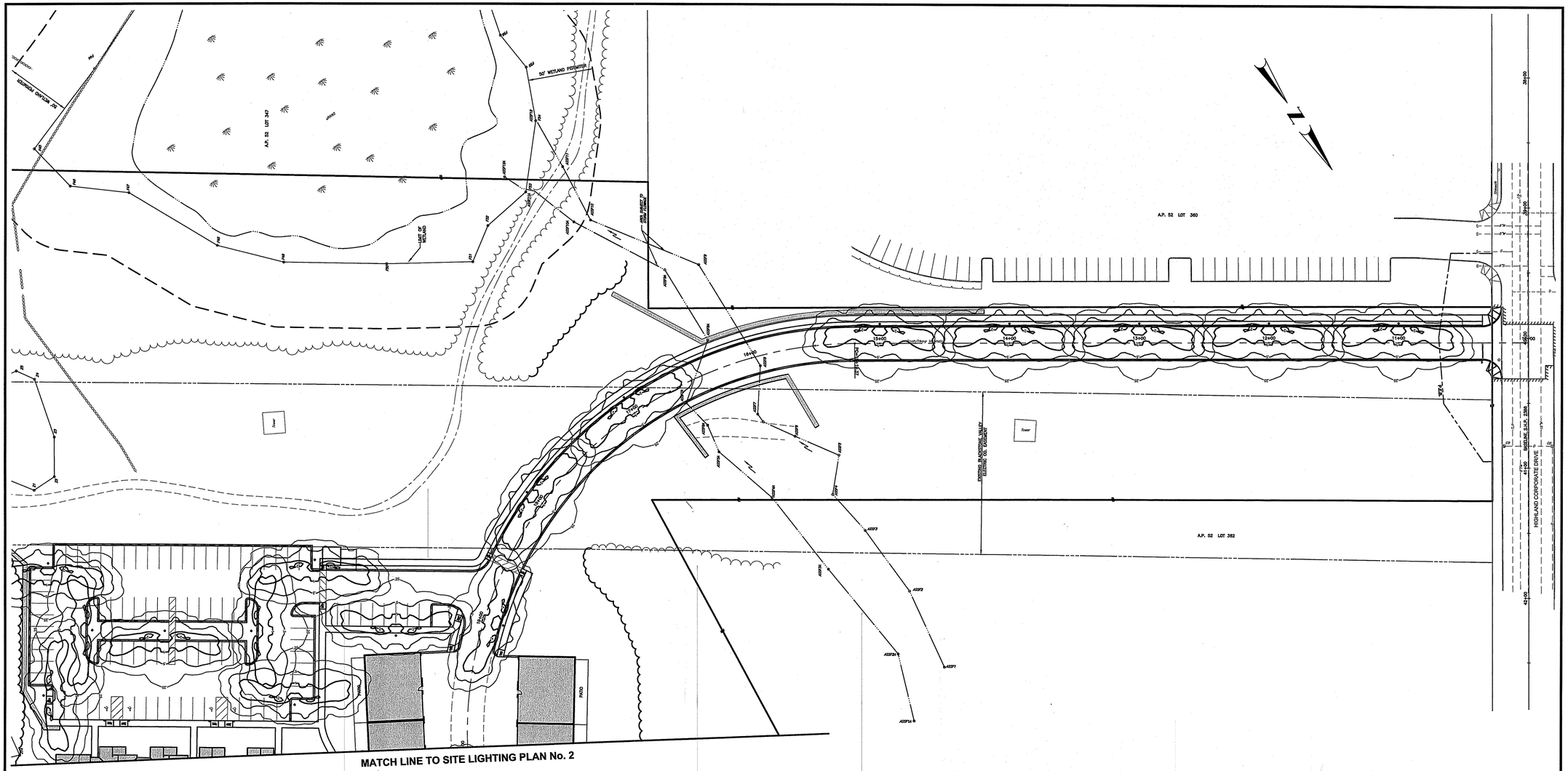
REVISIONS

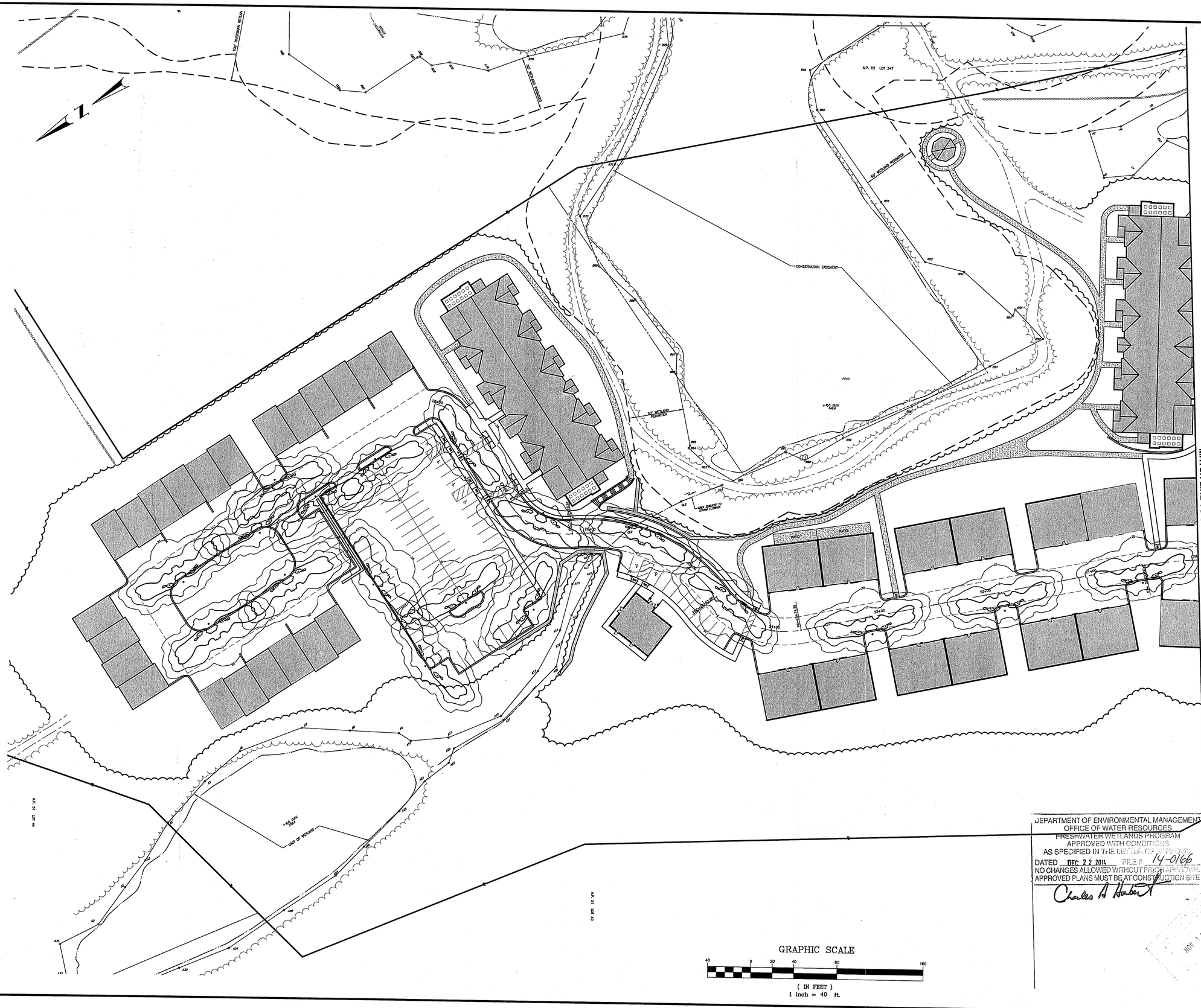
NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

C18

SHEET: 38 *OF:* 44


A.P. 52 LOT 347
A.P. 52 LOT 360
A.P. 52 LOT 382
50' WETLAND PERIMETER
LIMIT OF WETLAND
EXISTING BLACKSTONE VALLEY ELECTRIC CO. EASEMENT
HIGHLAND CORPORATE DRIVE
PROPOSED BUILDING 51A/C 23360
PROPOSED BUILDING 51A/C 23370
PROPOSED BUILDING 51A/C 23380
PROPOSED BUILDING 51A/C 23390
PROPOSED BUILDING 51A/C 23400
PROPOSED BUILDING 51A/C 23410
PROPOSED BUILDING 51A/C 23420
PROPOSED BUILDING 51A/C 23430
PROPOSED BUILDING 51A/C 23440
PROPOSED BUILDING 51A/C 23450
PROPOSED BUILDING 51A/C



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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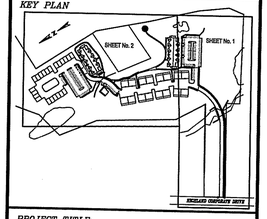
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JOHN M. CABRAL
4847
11-10-14
REGISTERED
PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

SITE LIGHTING PLAN No. 2

DATE:	*SCALE:*
AUGUST 2014	1"=40'

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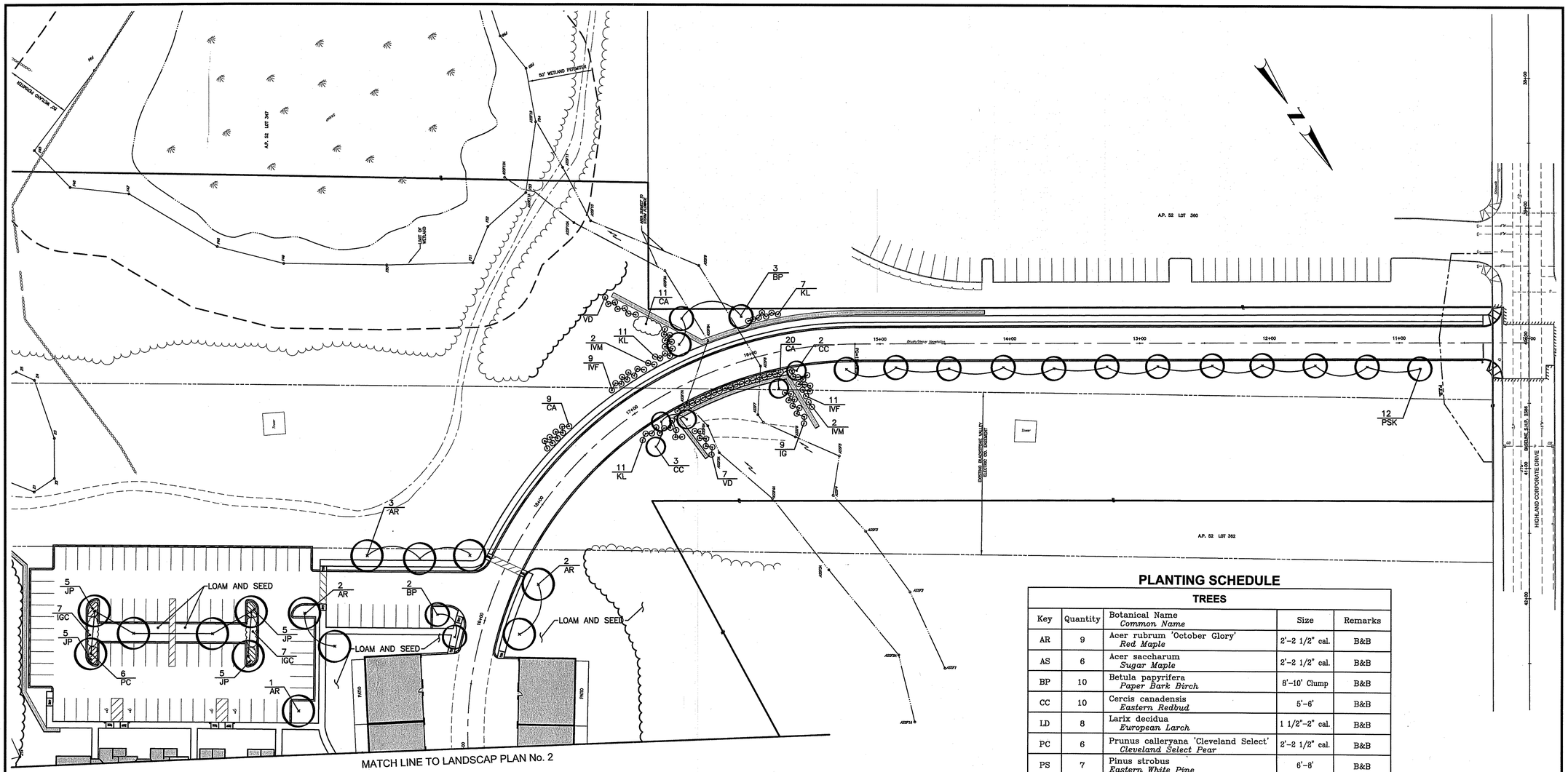
REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

E1.2

SHEET: 40 *OF:* 44



PLANTING SCHEDULE

Key	Quantity	Botanical Name / Common Name	Size	Remarks
TREES				
AR	9	Acer rubrum 'October Glory' / *Red Maple*	2'–2 1/2" cal.	B&B
AS	6	Acer saccharum / *Sugar Maple*	2'–2 1/2" cal.	B&B
BP	10	Betula papyrifera / *Paper Bark Birch*	8'–10' Clump	B&B
CC	10	Cercis canadensis / *Eastern Redbud*	5'–6'	B&B
LD	8	Larix decidua / *European Larch*	1 1/2"–2" cal.	B&B
PC	6	Prunus calleryana 'Cleveland Select' / *Cleveland Select Pear*	2'–2 1/2" cal.	B&B
PS	7	Pinus strobus / *Eastern White Pine*	6'–8'	B&B
PSK	12	Prunus serrulata 'Kwanzan' / *Kwanzan Cherry*	2'–2 1/2" cal.	B&B
QP	5	Quercus palustus / *Pin Oak*	2'–2 1/2" cal.	B&B
TT	9	Thuja occidentalis 'Techney' / *Techney Arborvitae*	6'–8'	B&B
TC	5	Tilia cordata 'Greenspire' / *Greenspire Littleleaf Linden*	2'–2 1/2" cal.	B&B
SHRUBS				
AV	15	Azalea viscosum / *Swamp Azalea*	3 gallon	cont.
CA	40	Clethra alnifolia / *Summersweet Clethra*	3 gallon	cont.
HM	9	Hydrangea macrophylla 'Nikko Blue' / *Nikko Blue Hydrangea*	5 gallon	cont.
IG	9	Ilex glabra / *Inkberry*	24"–30"	B&B
IGC	19	Ilex glabra 'Compacta' / *Compact Inkberry*	5 gallon	cont.
IVF	39	Ilex verticillata–female / *Winterberry–female*	5 gallon	cont.
IVM	7	Ilex verticillata–male / *Winterberry–male*	2 gallon	cont.
JP	33	Juniperus procumbens 'Nana' / *Japanese Garden Juniper*	2 gallon	cont.
KL	29	Kalmia latifolia / *Mountain Laurel*	5 gallon	cont.
R	10	Rosa Double Knockout / *Double Knockout Rose*	3 gallon	cont.
VD	14	Viburnum dentatum / *Arrowwood Viburnum*	5 gallon	cont.

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OFFICE OF WATER RESOURCES
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DATED DEC 22 2014 FILE 14-0166
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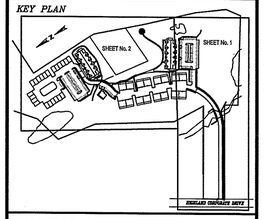
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JOHN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN



PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

LANDSCAPE PLAN No. 1

DATE: AUGUST 2014

SCALE: 1"=40'

DWG. NAME: 2035–L01–LAND–R2.dwg

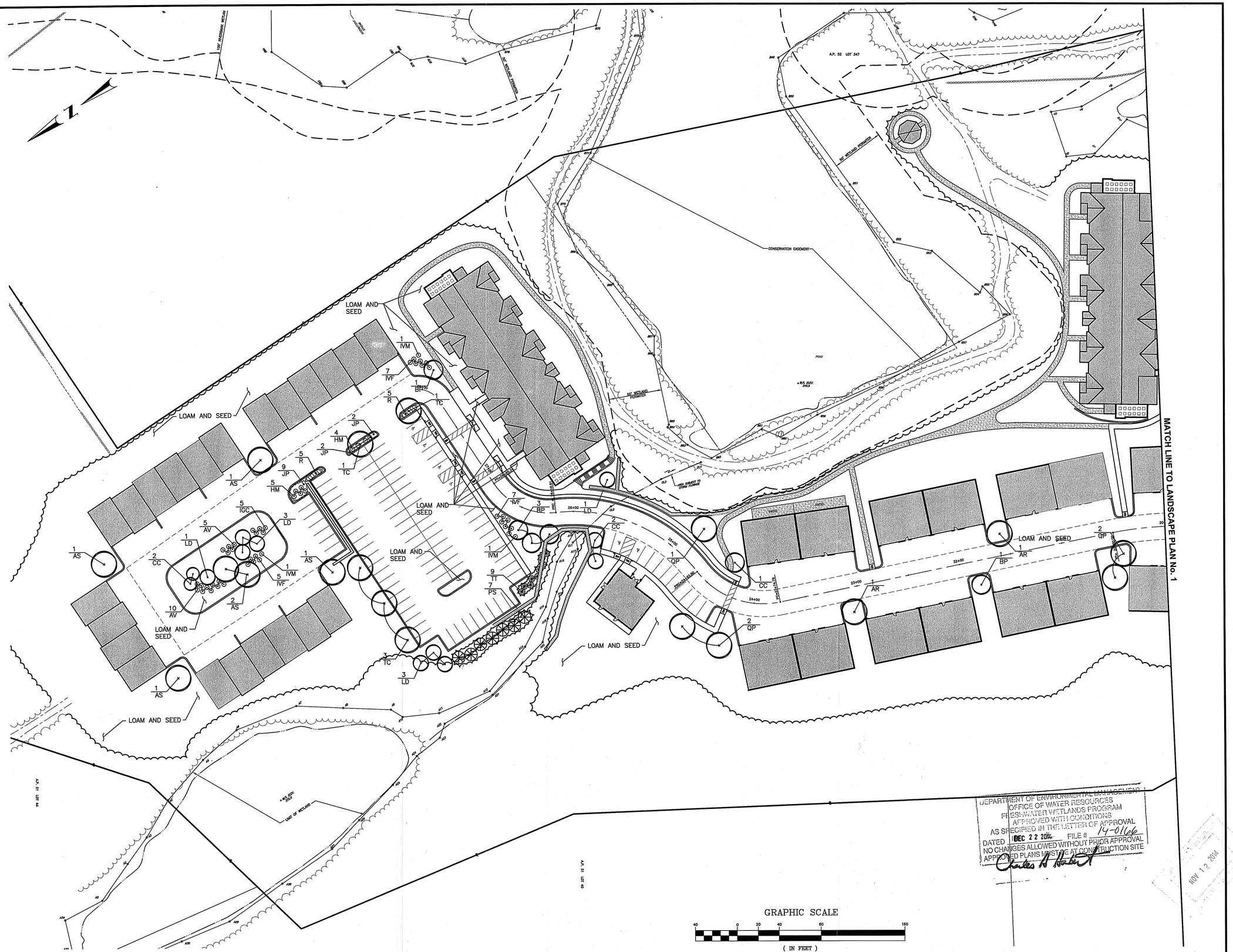
REVISIONS

NUMBER	REMARKS	DATE
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

DRAWING NUMBER

L1.1

SHEET: 41 *OF:* 44



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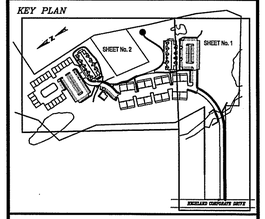
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PLAT MAP 51 LOT 11
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HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

LANDSCAPE PLAN No. 2

DATE: AUGUST 2014
SCALE: 1"=40'

DWG. NAME: 2035-L01-LAND-R2.dwg

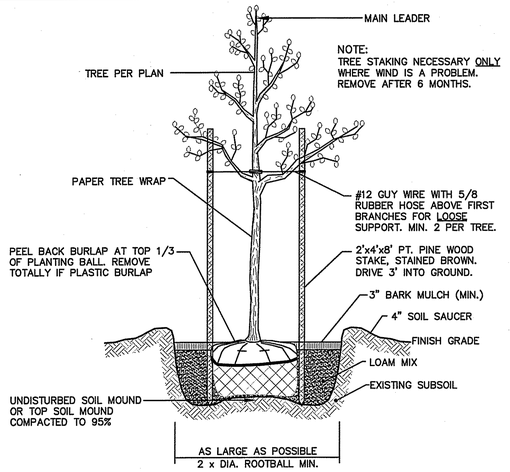
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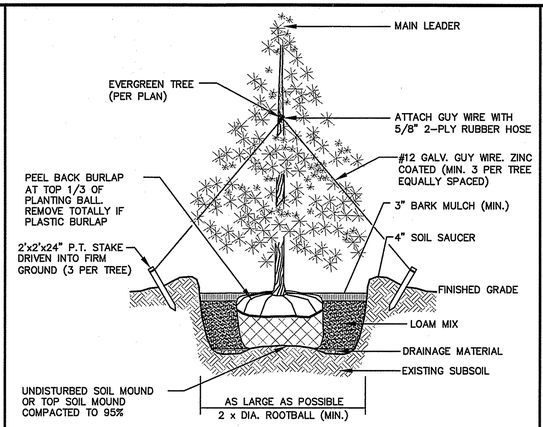
L1.2

SHEET: 42 *OF:* 44



DECIDUOUS TREE PLANTING DETAIL

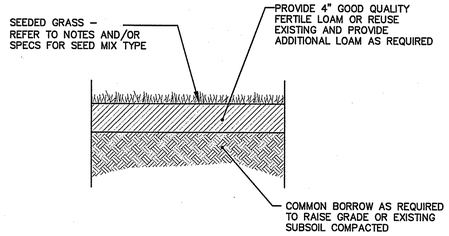
NOT TO SCALE



NOTE:
TREE STAKING OR SUPPORT NECESSARY ONLY WHERE WIND IS A PROBLEM, REMOVE AFTER SIX (6) MONTHS.

EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

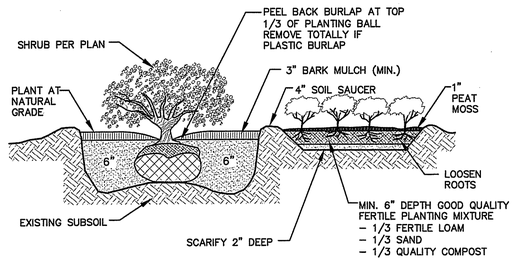


NOTE:

THE CONTRACTOR WILL BE RESPONSIBLE FOR WATERING LAWN DURING THE COURSE OF THE GROWING SEASON FOR A PERIOD OF ONE (1) YEAR.

LOAM-SEED DETAIL

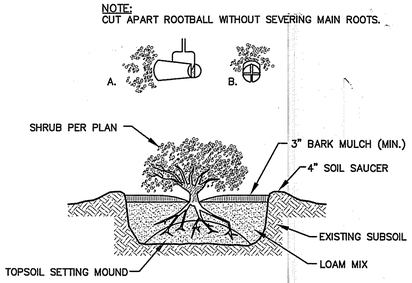
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BALL and BURLAP

SHRUB and GROUNDCOVER PLANTING DETAIL

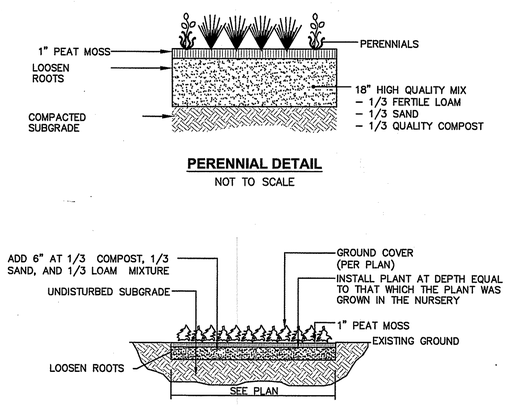
NOT TO SCALE



REMOVE CONTAINER AND BUTTERFLY ROOTBALL TO SPREAD ROOTS OVER SETTING MOUND. PLANT SHRUBS 1"–2" ABOVE EXISTING GRADE.

CONTAINER GROWN PLANTING DETAIL

NOT TO SCALE



PERENNIAL DETAIL

NOT TO SCALE

PERENNIAL and GROUNDCOVER PLANTING DETAIL

NOT TO SCALE

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
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SEEDING NOTES

1. LOAM SHALL BE SPREAD TO A MINIMUM DEPTH OF 4" OVER ALL AREAS DESIGNATED ON PLANS.
2. SHAPE AND SMOOTH THE SURFACE TO THE LINES AND GRADES AS SHOWN ON PLANS.
3. FERTILIZE WITH 10–10–10 OR EQUIVALENT ANALYSIS. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN A SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 3 TO 4 INCHES OF THE PLANTING SOIL. APPLY AT THE RATE OF 8 POUNDS PER 1,000 SQUARE FEET AT SEEDING.
4. LIME: SPREAD EVENLY AND WORK INTO THE SOIL DURING PREPARATION OF SEED BED AT THE RATE OF ONE TON PER ACRE. INCORPORATE INTO THE SOIL BY DICING OR OTHER APPROVED METHOD. DISTRIBUTE LIME UNIFORMLY AND WORK INTO TOP 4 INCHES OF TOP SOIL (MINIMUM) AND UNIFORMLY BLEND BY DICING OR ROTOTILLING.
5. APPLICATION OF SEED:
   A. RATE OF APPLICATION OF SEED SHALL BE 8 POUNDS PER 1,000 SQUARE FEET OR AS INDICATED ON PLANS.
   B. SEEDING SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS, AND ONLY DURING THE FOLLOWING DATES:
      SPRING SEEDING: MARCH 15 TO MAY 31
      FALL SEEDING: AUGUST 15 TO OCTOBER 15
   C. THE CONTRACTOR SHALL KEEP ALL SEEDED AREAS WATERED AND IN GOOD CONDITION, RESEEDING IF AND WHEN NECESSARY FOR AN 8 WEEK PERIOD OR UNTIL A GOOD, HEALTHY, UNIFORM GROWTH IS ESTABLISHED OVER THE ENTIRE AREA. THE CONTRACTOR SHALL ALSO MAINTAIN THESE AREAS IN AN APPROVED CONDITION UNTIL PROVISIONAL ACCEPTANCE.
   D. DURING THIS PERIOD, WATER TURF AS NECESSARY TO MAINTAIN AN ADEQUATE SUPPLY OF MOISTURE WITHIN THE ROOT ZONE. AN ADEQUATE SUPPLY OF MOISTURE IS EQUIVALENT OF ONE INCH OF ABSORBED WATER PER WEEK THAT IS DELIVERED AT WEEKLY INTERVALS IN THE FORM OF NATURAL RAIN OR IS AUGMENTED AS REQUIRED BY PERIODIC WATERING.
   E. OVERSEED WHEN NECESSARY TO PROMOTE GRASS GROWTH.
   F. REPLANT AREAS VOID OF TURF ONE SQUARE FOOT OR LARGER.
   G. SEED:
      a. SEED ALL AREAS DESIGNATED ON PLAN AS WELL AS ALL DISTURBED EXISTING AREAS WITH THE FOLLOWING SEED MIX:

SEED MIX No. 1

(SLOPES, MEADOWS AND GENERAL RESTORATION AREA)

TYPE	% BY WEIGHT
CREEPING RED FESCUE	70
ASTORIA BENTGRASS	5
BIRDSFOOT TREFOIL	15
PERENNIAL RYE GRASS	10

APPLICATION RATE = 200 lbs. / ACRE

SEED MIX No. 2

(ENDOPHYTE SEED MIX) (MOWED AREAS)

TYPE		% BY WEIGHT
PERENNIAL RYE	TURF	30
TYPE TALL FESCUE		30
CHEWINGS FESCE		30
KENTUCKY BLUEGRASS		10

APPLICATION RATE = 250 lbs. / ACRE

SEED MIX No. 3

(DETENTION/RETENTION AREAS)

TYPE	% BY WEIGHT
CREEPING RED FESCUE	28
TALL FESCUE	24
PERENNIAL RYE GRASS	18
LITTLE BLUESTEM	15
REDTOP	4
NORTHEAST WILDFLOWER MIX	4

APPLICATION RATE = 220 lbs. / ACRE OR 5 LBS. PER 1,000 S.F.

SEED MIX No. 4

(BIO–DETENTION AREAS)

TYPE	% BY WEIGHT
HARD FESCUE	60
SHEEP FESCUE	40

APPLICATION RATE =25–50 LBS./ACRE

SEED MIX No. 5

(WETLAND AREAS)

TYPE	% BY WEIGHT
REDTOP (AGROSTIS STOLONIFERA)	25
DEET TONGUE (PANICUM CLANDESTINUM)	20
BLUEJOINT GRASS (CALAMAGROSTIS CANAD.)	20
ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	10
SWITCHGRASS (PANICUM VGATUM)	10
JOE PYE WEED (EUPATORIUM FISTULOSUM)	5
YELLOW FLAG IRIS (IRIL VERSICOLOR)	5
RICEGRASS (LEERSIA ORYZOIDES)	5

APPLICATION RATE = 60 lbs. / ACRE

LANDSCAPE CONSTRUCTION NOTES

1. FURNISH AND INSTALL ALL PLANTS SHOWN ON THE DRAWINGS SPECIFIED HEREIN, AND IN THE QUANTITIES LISTED ON THE PLANT LIST. NO SUBSTITUTIONS WILL BE PERMITTED, UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.
2. LOAM TO BE SCREENED, GOOD QUALITY, FERTILE, FREE OF WEEDS, STICKS, STONES OVER 3/4", AND ROOTS. SPREAD TO A MINIMUM OF 4" OVER ALL PLANTED AREAS.
3. BIO–DETENTION AREAS–PLANTING SOIL AND MULCH: LOAMY SAND TO A SANDY LOAM–80% SAND <20% SILT, <2% CLAY. WELL AGED GRADED COMPOST (25% OF SOIL MIX). WELL AGED, AERATED DARK BROWN HARD–WOOD MULCH (AGED 6 MONTHS).
4. NURSERY STOCK SHALL MEET THE STANDARDS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION AS TO GRADING AND QUALITY.
5. ONLY NURSERY–GROWN PLANTS, GROWN IN ACCORDANCE WITH ACCEPTED HORTICULTURAL PRACTICES, AND GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST TWO (2) YEARS, WILL BE ACCEPTED.
6. SET PLANTS PLUMB AND AT A LEVEL THAT AFTER SETTLEMENT THEY BEAR THE SAME RELATION TO THE SURROUNDING GROUND AS THEY BORE TO THE GROUND FROM WHICH THEY WERE DUG. SETTLE BACKFILL MATERIAL FOR PLANTS, THOROUGHLY AND PROPERLY BY FIRMING OR TAMPING. FORM SAUCERS, CAPABLE OF HOLDING WATER ABOUT INDIVIDUAL PLANTS, BY PLACING RIDGES OF PLANTING SOIL AROUND EACH.
7. STAKE ALL TREES OVER 5 FEET AS SHOWN ON PLANS. REMOVE STAKES AT THE END OF THE GUARANTEE PERIOD.
8. WATERING: WATER ALL PLANTS WITHIN 48 HOURS AFTER PLANTING. IF CONDITIONS WARRANT, AND AS MANY TIMES THEREAFTER TO SUSTAIN HEALTHY CONDITIONS UNTIL LANDSCAPE INSTALLATION IS COMPLETED. SATURATE THE SOIL AROUND EACH PLANT THOROUGHLY AT EACH WATERING.
9. PRUNING: PRUNE PLANTS, AS DIRECTED BY OWNER, AT THE PROJECT SITE BEFORE OR IMMEDIATELY AFTER PLANTING IN ACCORDANCE WITH THE BEST HORTICULTURAL PRACTICE. CUT BROKEN, DEAD OR INJURED BRANCHES IMMEDIATELY ABOVE THE STEM COLLAR ON THE TRUNK OR LIMB. PRUNE ALL BROKEN ROOTS ON THE PLANT SIDE OF THE BREAK. PAINT CUTS OVER 3/4" IN DIAMETER WITH TREE WOUND PAINT. PRUNING SHALL NOT DEFORM OR OTHERWISE DESTROY THE TYPICAL SHAPE OR SYMMETRY OF THE PLANT, AND SHALL NOT REDUCE THE HEIGHT BY MORE THAN ONE–THIRD. DO NOT CUT BACK THE LEADER OF THE PLANT UNLESS DIRECTED BY THE LANDSCAPE ARCHITECT.
10. FERTILIZING: FERTILIZE SHRUB BEDS WITH 10–6–4 FERTILIZER BROADCAST AT A RATE OF THREE POUNDS PER 100 SQUARE FEET OF SURFACE AREA BROADCAST. APPLY THE FERTILIZER UNIFORMLY TO THE SURFACE BEDS AND WORK INTO THE UPPER TWO INCHES OF SOIL. FERTILIZE INDIVIDUAL TREES AT A RATE OF ONE AGRIFORM PELLET PER INCH OF TRUNK DIAMETER (FOLLOW MANUFACTURER'S WRITTEN INSTRUCTIONS). APPLY A SECOND APPLICATION OF FERTILIZER TO ALL PLANT ITEMS AT THE SAME SPECIFIED RATES OVER THE MULCH AT THE END OF AN EIGHT WEEK PERIOD.
11. LIMING: ADD POWDERED LIME EVERY SIX MONTHS – OR SLOW RELEASE GRANULAR LIME–AS PER MANUFACTURER'S INSTRUCTION.
12. MULCHING: WITHIN A 72 HOUR PERIOD AFTER PLANTING, COVER ALL PLANTED AREAS WITH 3" DARK HEMLOCK MULCH. NO RED OR DYED MULCH IS TO BE USED. MULCH SHOULD BE PULLED ONE INCH AWAY FROM PLANT TRUNK OR STEM, AND NOT ALLOWED TO REST DIRECTLY AGAINST THE TRUNK OR STEM.
13. GUARANTEE: ALL PLANTS FURNISHED BY THE CONTRACTOR SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER PRELIMINARY INSPECTION AND SHALL BE ALIVE AND IN SATISFACTORY GROWTH AT THE END OF THE GUARANTEE PERIOD. ALL DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED AT ONCE BY THE CONTRACTOR, FREE OF CHARGE.

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STEVEN M. CABRAL
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REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

HIGHLAND HILLS

PLAT MAP 51 LOT 11
ZONING DISTRICTS
A-2, I-1 , OS and R-3

HIGHLAND CORPORATE DRIVE
CUMBERLAND, RHODE ISLAND

PREPARED FOR:

A.R. BUILDING COMPANY
310 SEVEN FIELDS BOULEVARD
SEVEN FIELDS, PA
16046

DRAWING TITLE:

LANDSCAPE DETAIL PLAN

DATE:	*SCALE:*
AUGUST 2014	AS SHOWN

DWG. NAME: 2035–L02–LAND DETAIL–R2.dwg

REVISIONS

NUMBER	*REMARKS*	*DATE*
1	R.I.D.E.M. SUBMITTAL	09/10/14
2	R.I.D.E.M. COMMENTS	11/10/14

NOV 2 2014

DRAWING NUMBER

L2

SHEET: 43 *OF:* 44

HIGHLAND HILLS

Precedent Multi-Family Unit Types for Highland Hills



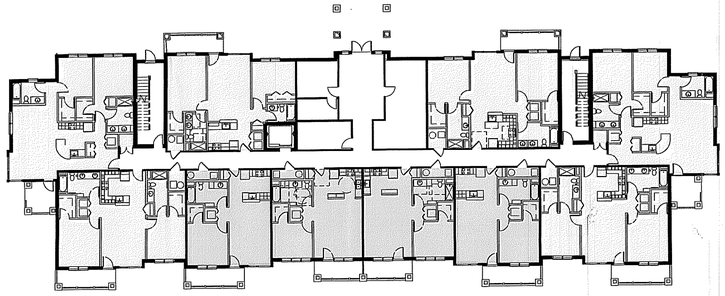
Perspective of Precedent Apartment Building



Typical Representative Parking Elevation

Typical Representative "View Side" Elevation

45-UNIT APARTMENT BUILDING PRECEDENT

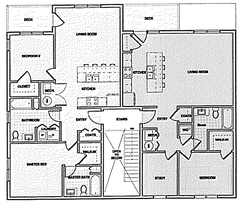


Typical Entry Level Floorplan
1/16" = 1'-0"

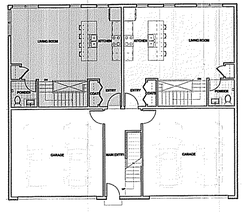


Typical Upper Level Floorplan
1/16" = 1'-0"

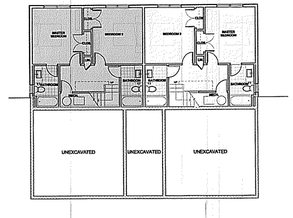
MULTI-FAMILY ATTACHED UNIT FLOORPLAN



Upper Level Floorplan
1/16" = 1'-0"



Street Level Floorplan
1/16" = 1'-0"



Lower Level Floorplan
1/16" = 1'-0"

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No. 484
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PROFESSIONAL ENGINEER

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NOV 1 - 2014

Rothschild COLLABORATIVE Doyno
ARCHITECTURE AND URBAN DESIGN

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