STATE OF CONNECTICUT

QUI TRANSTULIT SUSTINET

DANNEL P. MALLOY
GOVERNOR

DEPARTMENT OF ADMINISTRATIVE SERVICES
Melody A. Currey
COMMISSIONER

CONNECTICUT STATE COLLEGES & UNIVERSITIES BOARD OF REGENTS
Dr. Gregory W. Gray
PRESIDENT

CAMPUS SITE IMPROVEMENTS
NAUGATUCK VALLEY COMMUNITY COLLEGE
WATERBURY, CT

PROJECT NO. BI-CTC-436

CONTRACT DOCUMENTS
JANUARY 15, 2015

TRAFFIC AND M.E.P. ENGINEER:

TIGHE AND BOND
213 COURT STREET
MIDDLETOWN, CT 06457
(860) 704-4760

LEAD CONSULTANT:

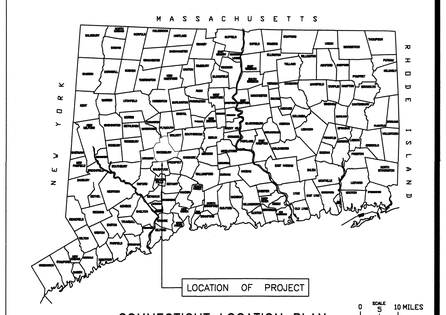
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105
(860) 549-6190
www.macchiengineers.com

LANDSCAPE ARCHITECT:

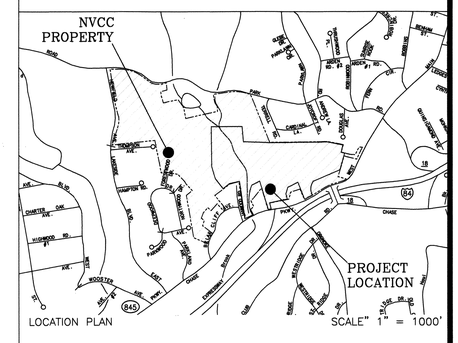
THE S/L/A/M COLLABORATIVE
80 GLASTONBURY BOULEVARD
GLASTONBURY, CT 06033
(860) 657-8077

100% CONTRACT DOCUMENTS: 11-18-14

SHEET NO.	TITLE
	TITLE SHEET
G 0.1	CODES AND PERMIT INFORMATION SHEET
EC 1	TOPOGRAPHIC AND BOUNDARY SURVEY (INDEX SHEET AND NOTES)
EC 2	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 3	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 4	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 5	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 6	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 7	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 8	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 9	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 10	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 11	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 12	TOPOGRAPHIC AND BOUNDARY SURVEY
EC 13	TOPOGRAPHIC AND BOUNDARY SURVEY
B 1.1	CAMPUS BORING LOCATION PLAN – SOUTHWEST CAMPUS
B 1.2	CAMPUS BORING LOCATION PLAN – NORTHWEST CAMPUS
B 1.3	CAMPUS BORING LOCATION PLAN – EAST CAMPUS
B 1.4	CAMPUS BORING LOCATION PLAN – EAST ENTRANCE DRIVE
C 0.0	OVERALL SITE PLAN
C 0.1	PHASING PLAN
C 1.1	SOUTHWEST CAMPUS EXIST. COND. STORMWATER POLLUTION CONTROL PLAN
C 1.2	NORTHWEST CAMPUS EXISTING CONDITIONS SWPCP
C 1.3	EAST CAMPUS EXISTING CONDITIONS SWPCP
C 1.4	EAST ENTRANCE DRIVE EXISTING CONDITIONS SWPCP
C 1.5	SOUTHWEST CAMPUS PROPOSED CONDITIONS SWPCP
C 1.6	NORTHWEST CAMPUS PROPOSED CONDITIONS SWPCP
C 1.7	EAST CAMPUS PROPOSED CONDITIONS SWPCP
C 1.8	EAST ENTRANCE DRIVE PROPOSED CONDITIONS SWPCP
C 1.9	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
C 1.10	EROSION AND SEDIMENT CONTROL DETAILS
C 2.1	SOUTHWEST CAMPUS SITE PREPARATION PLAN
C 2.2	NORTHWEST CAMPUS SITE PREPARATION PLAN
C 2.3	EAST CAMPUS SITE PREPARATION PLAN
C 2.4	EAST ENTRANCE DRIVE SITE PREPARATION PLAN
C 3.1	SOUTHWEST CAMPUS MATERIAL AND LAYOUT PLAN
C 3.2	NORTHWEST CAMPUS MATERIAL AND LAYOUT PLAN
C 3.3	EAST CAMPUS MATERIAL AND LAYOUT PLAN
C 4.1	SOUTHWEST CAMPUS GRADING AND UTILITY PLAN
C 4.2	NORTHWEST CAMPUS GRADING AND UTILITY PLAN
C 4.3	EAST CAMPUS GRADING AND UTILITY PLAN
C 5.1	EAST DRIVEWAY TYPICAL SECTIONS
C 5.2	EAST DRIVEWAY ROADWAY CONSTRUCTION PLAN
C 5.3	EAST DRIVEWAY GRADING AND DRAINAGE PLAN
C 5.4	EAST DRIVEWAY ROADWAY PROFILE
C 5.5	EAST DRIVEWAY SIGN AND MARKING PLAN
C 5.6	EAST DRIVEWAY TRAFFIC SIGNAL PLAN
C 5.7	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.8	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.9	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.10	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.11	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.12	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.13	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.14	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 5.15	EAST DRIVEWAY MISCELLANEOUS DETAILS
C 6.1	SITE ROADWAY AND SIGNAGE DETAILS
C 6.2	SIDEWALK, RAMPS, CURB, AND FENCE DETAILS
C 6.3	STORM MANHOLE, END WALL, AND FLARED END DETAILS
C 6.4	STORM DRAINAGE, WATER, AND MISCELLANEOUS DETAILS
C 6.5	UNDERGROUND STORM DRAINAGE CHAMBER DETAILS
L 0.0	SITE PLANTING OVERALL
L 1.1	SITE PLANTING SOUTHWEST CAMPUS
L 1.2	SITE PLANTING NORTHWEST CAMPUS
L 1.3	SITE PLANTING EAST CAMPUS
L 1.4	PLANTING ENLARGEMENTS PLANT LIST AND DETAILS
E 1.1	CAMPUS LIGHTING PLAN
E 1.2	CAMPUS LIGHTING PLAN
E 1.3	CAMPUS LIGHTING PLAN
E 1.4	CAMPUS LIGHTING PLAN
E 1.5	CAMPUS ELECTRICAL MISCELLANEOUS DETAILS
S 1.1	EAST ENTRY MAIN SIGN
S 1.2	DIRECTIONAL SIGNS



CONNECTICUT LOCATION PLAN



APPROVALS

DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) — DATE 1/20/15

AGENCY — DATE 1/21/15

CONNECTICUT STATE BUILDING CODE

1.0 EXISTING BUILDING		☐ YES	☐ NO	☑ N/A
1.1	CONTINUATION OF EXISTING USE	☐ YES	☐ NO	☑ N/A
1.2	CHANGE OF USE	☐ YES	☐ NO	☑ N/A
1.3	COMPLYING W/ INTERNATIONAL EXISTING BUILDING CODE (BASEMENT: ALTERATIONS-LEVEL 3)	☐ YES	☐ NO	☑ N/A
1.4	COMPLYING W/ INTERNATIONAL BUILDING CODE for New Construction (MAIN, SECOND, AND THIRD FLOORS)	☐ YES	☐ NO	☑ N/A
2.0 NEW BUILDING OR ADDITIONS:		☐ YES	☐ NO	☑ N/A
2.1	EXCEEDS THRESHOLD BUILDING LIMITS	☐ YES	☐ NO	☑ N/A
3.0 OCCUPANCY CLASSIFICATION		N/A		
3.1	MIXED OCCUPANCIES	N/A		

4.0 HEIGHT AND AREA COMPUTATION + CONSTRUCTION TYPE

AREA MODIFICATIONS TO TABLE 503: N/A

% OF ALLOWABLE TABULAR AREA, *At* (TABLE 503) _____
% INCREASE OF FRONTAGE, *If* (TABLE 506.2) _____
% INCREASE FOR AUTOMATIC SPRINKLERS, *Is* (TABLE 506.3) _____
TOTAL PERCENTAGE FACTOR _____
CONVERSION FACTOR _____

CASE 1 - SINGLE OCCUPANCY OR NON-SEPARATED USES - N/A

DETERMINE CONSTRUCTION TYPE **ALLOWABLE AREA**

ACTUAL BUILDING AREA ____ ft² ALLOWABLE AREA PER FL (*Aa*)
ADJUSTED BUILDING AREA _____ ft² (ACTUAL BUILDING AREA / CONVERSION FACTOR) ____ x _____ = ____ ft² (CONVERSION FACTOR; TABULAR AREA (TABLE 503))

ACTUAL BUILDING HEIGHT _____ FT _____ STORIES TOTAL FLOOR AREA (ALL STORIES) _____ ft²
ALLOWABLE BUILDING HEIGHT _____ FT _____ STORIES ALLOWABLE FLOOR AREA (ALL STORIES) _____ ft²
PERMITTED CONSTRUCTION TYPES _____ _____ x _____ = _____ ft² (ALLOWABLE AREA PER FLOOR (*Aa*); NUMBER OF STORIES (MAX 3))

TYPE OF CONSTRUCTION ASSUMED FOR REVIEW _____

CONSTRUCTION INFORMATION

6.0 MEANS OF EGRESS

6.1	TOTAL OCCUPANT LOAD (ENTIRE BLDG)	N/A
6.2	TOTAL OCCUPANT LOAD (LARGEST FLOOR)	N/A
6.3	TOTAL CAPACITY OF EXITS	N/A
6.4	TOTAL NUMBER OF EXITS	N/A

7.0 FIRE RESISTANT RATING OF STRUCTURE ELEMENTS (TABLE 602)
REFER TO CONSTRUCTION DOCUMENTS FOR THE FOLLOWING: N/A

7.1	EXTERIOR WALLS	
	7.1.1 LOAD BEARING	____ HRS
	7.1.2 NON-LOAD BEARING	____ HRS
7.2	FIRE WALLS & PARTY WALLS	____ HRS
7.3	FIRE SEPARATION ASSEMBLIES:	
	7.3.1 FIRE ENCLOSURE OF EXITS	____ HRS
	7.3.2 SHAFTS	____ HRS
	7.3.3 MIXED USE SEPARATION	____ HRS
	7.3.4 OTHER SEPARATION ASSEMBLIES	____ HRS
7.4	FIRE PARTITIONS	____ HRS
7.5	DWELLING UNIT SEPARATIONS	____ HRS
7.6	SMOKE BARRIERS	____ HRS
7.7	OTHER NON BEARING PARTITIONS	____ HRS
7.8	INTERIOR BEARING WALLS, BEARING PARTITIONS, COLUMNS, GIRDERS, TRUSSES AND FRAMING:	
	7.8.1 SUPPORTING MORE THAN 1 FL	____ HRS
	7.8.2 SUPPORTING 1 FL ONLY OR ROOF	____ HRS
	7.8.3 STRUCTURAL MEMBERS SUPPORTING WALL	____ HRS
7.9	FLOOR CONSTRUCTION INCLUDING BEAMS	____ HRS
7.10	ROOF CONSTRUCTION	____ HRS
	7.10.1 *15 ft OR LESS;	____ HRS
	7.10.2 *15 ft OR MORE;	____ HRS
	7.10.3 *20 ft OR MORE;	____ HRS

8.0 FIRE PROTECTION SYSTEM

8.1	FIRE SUPPRESSION SYSTEM	N/A
8.2	ALARMS	N/A
8.3	AUTOMATIC FIRE DETECTION SYSTEM	N/A
8.4	SMOKE CONTROL SYSTEM	N/A
8.5	SUPERVISION	N/A

CONNECTICUT STATE FIRE SAFETY CODE

1.0	**CLASSIFICATION OF OCCUAPANCY:**	N/A
2.0	**CONSTRUCTION CLASSIFICATION:**	N/A
3.0	**MINIMUM CONSTRUCTION TYPE REQUIRED:**	N/A
4.0	**ACTUAL CONSTRUCTION TYPE PROVIDED:**	N/A
5.0	**NOTIFICATION/ALARMS:**	N/A
6.0	**DETECTION:**	N/A
7.0	**EXTINGUISHMENT REQUIREMENTS:**	N/A

9.0 MODIFICATIONS – NONE

10.0 ACCESSIBLE BUILDING DESIGNATED _____
NON-DESIGNATED _____

11.0 MINIMUM PLUMBING FIXTURE COUNT (IPC Chapter 4) N/A

	USE GROUP A2 (REQ'D FIXTURES)			USE GROUP A3 (REQ'D FIXTURES)			USE GROUP B (REQ'D FIXTURES)		
	WC'S	LAVS	DF/EWC	WC'S	LAVS	DF/EWC	WC'S	LAVS	DF/EWC
MALE									
FEMALE									

	TOTAL FACILITY REQ'D FIXTURES			PROVIDED FIXTURES			
	WC'S	LAVS	DF/EWC		WC'S	LAVS	DF/EWC
MALE							
FEMALE							
TOTAL				UNISEX			
				TOTAL			

12.0 ENTIRE BUILDING SPRINKLERED: N/A YES____ NO____

13.0 THRESHOLD BUILDING CONDITIONS : N/A YES____ NO____

14.0 EGRESS (CHAPTER 10)
BUILDING AREAS FOR GRANT CALCULATIONS: N/A

	ASSEMBLY	B-BUSINESS	E-DUCATION
MAX ALLOWABLE TRAVEL DISTANCE TO EXITS MAX PROPOSED TRAVEL DISTANCE TO EXITS			
MAX ALLOWABLE COMMON PATH OF TRAVEL MAX PROPOSED COMMON PATH OF TRAVEL			
MAX DEAD END ALLOWABLE MAX DEAD END PROPOSED			

CODES TO WHICH THIS PROJECT WAS DESIGNED

	DATED
STATE BUILDING CODE	2003 IBC, 2005 CT SUPPLEMENT, 2009 AMENDMENT, 2011 AMENDMENT, 2013 AMENDMENT
STATE FIRE CODE	2003 IFC, 2005 CT SUPPLEMENT
STATE HEALTH CODE	-
EXISTING BUILDING CODE	IEBC 2003
ACCESSIBILITY	2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, ICC-ANSI A117.1 2003
OTHER	NATIONAL ELECTRICAL CODE - 2011 INTERNATIONAL PLUMBING CODE - 2003 INTERNATIONAL MECHANICAL CODE - 2003 INTERNATIONAL ENERGY CONSERVATION CODE - 2009

NOTE:
INCIDENTAL USE AREAS: WHERE AUTOMATIC SPRINKLER SYSTEM WITHOUT A FIRE BARRIER IS PERMITTED, THE PARTITIONS SHALL BE SMOKE RESISTANT; DOORS SHALL BE SELF OR AUTOMATIC CLOSING AND THEY SHALL NOT HAVE LOUVERS AND/OR GRILLES OR UNDERCUTS IN EXCESS OF THE CLEARANCE PERMITTED BY NFPA 80.

100% CONTRACT DOCUMENTS

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing title: CODES AND PERMIT INFORMATION SHEET

REVISIONS

mark	date	description
-	-	-

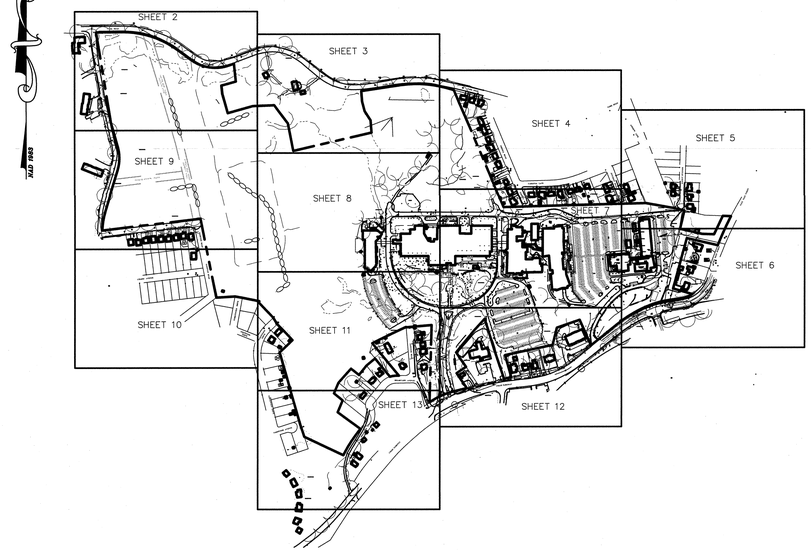
drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

STATE OF CONNECTICUT MICHAEL A. PITONZO No. 17284 LICENSED PROFESSIONAL ENGINEER

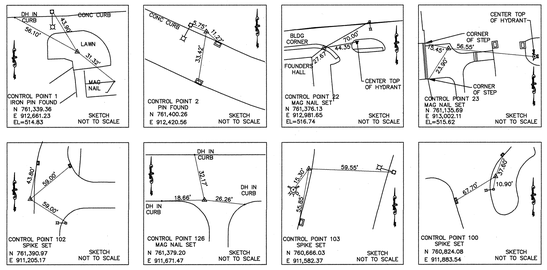
project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. G0.1.dwg
project no. BI-CTC-436

date 1/15/2015
scale N.T.S.
drawn by HSM
approved by MRP
drawing no. G0.1



INDEX SHEETS
SCALE: 1"=400'±



NOTES:

1. THIS SURVEY AND MAP HAVE BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20–300b–1 THROUGH 20–300b–20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.
2. THE TYPE OF SURVEY PERFORMED IS A PROPERTY AND TOPOGRAPHIC SURVEY.
3. THE BOUNDARY DETERMINATION/OPINION IS BASED UPON A RESURVEY OF MAP REFERENCES 1, 2, 3, 4, 5, AND 7; INTENDED TO DEPICT ALL THE PROPERTIES COMPRISING NAUGATUCK VALLEY COMMUNITY COLLEGE LANDS AS A FIRST SURVEY.
4. THIS SURVEY CONFORMS TO HORIZONTAL ACCURACY CLASS A–2, VERTICAL ACCURACY CLASS V–3, AND TOPOGRAPHIC ACCURACY CLASS T–2 AND T–3.
5. THE ELEVATIONS DEPICTED HEREON ARE BASED UPON NGVD 1929 DATUM: CITY DATUM +136.755=N.G.V.D. 1929 DATUM. 1929 DATUM –0.925=N.A.V.D. 1983 DATUM.
6. THE BEARINGS DEPICTED HEREON ARE BASED UPON THE CONNECTICUT STATE COORDINATE SYSTEM N.A.D. 1983, DERIVED FROM VRS GNSS SURVEY OF DECEMBER 2012.
7. THE SUBJECT PARCEL APPEARS TO LIE WITHIN FLOOD ZONE A AS DEPICTED ON FEMA'S FLOOD INSURANCE RATE MAP (FIRM) ENTITLED: NEW HAVEN COUNTY, CONNECTICUT (ALL JURISDICTIONS); PANEL 112 OF 635; MAP NUMBER 09009C0112H; EFFECTIVE DATE: DECEMBER 17, 2010; SCALE: 1"=<???>. ANY FEMA FLOODPLAIN AND/OR FLOODWAY INFORMATION DEPICTED HEREON IS APPROXIMATE ONLY AND DOES NOT IN ANY WAY CONSTITUTE AN OPINION OR REPRESENTATION OF ACTUAL FLOODPLAIN AND/OR FLOODWAY INFORMATION BY PEREIRA ENGINEERING, LLC (PE). PE DOES NOT WARRANT THE ACCURACY OF THIS INFORMATION, AND MAKES NO REPRESENTATIONS UPON WHICH THE CLIENT SHOULD RELY IN CONNECTION WITH THE FLOOD ZONE OF THE SUBJECT PARCEL OR ANY FEMA FLOODPLAIN AND/OR FLOODWAY INFORMATION DEPICTED HEREON.
8. UTILITY INFORMATION DEPICTED HEREON IS APPROXIMATE AND IS BASED ON VISIBLE EVIDENCE OF SURFACE AND OVERHEAD STRUCTURE LOCATIONS AND AS COMPILED FROM EXISTING RECORD MAPPING AVAILABLE DURING THE PREPARATION OF THE SURVEY. ALL CONTRACTORS SHOULD CONTACT "CALL BEFORE YOU DIG" AT 1(800)922–4455 FOR VERIFICATION OF UTILITY INFORMATION PRIOR TO START OF ANY WORK.

MAP REFERENCES:

1. "LAND TO BE ACQUIRED BY THE STATE OF CONNECTICUT FROM CITY OF WATERBURY WATERBURY, CONN. PROJ. NO. BI–HE–1" SCALE: 1"=100'; DATED: FEBRUARY 1970; PREPARED BY: C. E. DAVIES; W.L.R.: DR. 5 PG. 35.
2. "STATE OF CONNECTICUT PUBLIC WORKS DEPARTMENT T. J. MURPHY, JR., COMMISSIONER MAP SHOWING PROPERTIES OF VERA G. BLANSFIELD, HYMAN HELFAND, AND MADLYN & FRANK McCANN CITY OF WATERBURY, CONN. TO BE CONVEYED TO STATE OF CONNECTICUT, PROJ. NO. BI–R–186A" SCALE:1"=100'; DATED: DECEMBER 13, 1960; PREPARED BY: JAMES P. PURCELL ASSOCIATES; W.L.R.: BK. 29 PG. 74–75.
3. "BRIER CLIFF MAP SHOWING PROPERTY OF EDWIN J. ARCHER WATERBURY, CONN." SCALE: 1"=100'; DATED: FEBRUARY 20, 1931; PREPARED BY: FRANK J. SMYTH; W.L.R.: BK. 2 PG. 12.
4. "MAP OF PROPERTY BELONGING TO ESTATE OF IRVING E. PRIOR WATERBURY, CT." SCALE:1"=100'; DATED: JANUARY 1957; PREPARED BY: ARTHUR A. WOOD; W.L.R.: BK. 26 PG. 39.
5. "LAND TO BE ACQUIRED BY STATE OF CONNECTICUT FROM ALBERT J. SKROBLES & JEAN S. BLACKBURN WATERBURY, CONN." SCALE: 1"=100'; DATED: MARCH 1970; PREPARED BY: DAVIES AND HOWES; W.L.R.: DR. 2 PG. 164.
6. "PROPERTY TO BE CONVEYED BY PARKLAND ACRES, INC. TO EMMET NICHOLS PARK ROAD, WATERBURY, CONN." SCALE: 1"=100'; DATED: NOVEMBER 7, 1968; PREPARED BY: RUSSELL BOYCE; W.L.R.: DR. 1 PG. 76.
7. "LAND TO BE ACQUIRED BY STATE OF CONNECTICUT FROM PARKLAND ACRES, INC. WATERBURY, CONN. PROJ. NO. BI–HE–1" SCALE: 1"=100'; DATED: FEBRUARY 1970; PREPARED BY: DAVIES AND HOWES; W.L.R.: DR. 2 PG. 82.
8. "SCHEDULE A–4 AS–BUILT PLAN FOR (650 CHASE) 650 CHASE PARKWAY WATERBURY, CONNECTICUT" SCALE: 1"=20'; DATED: JULY 2, 1997; REVISED TO JUNE 23, 1998; PREPARED BY: MEYERS ASSOCIATES P. C.; W.L.R.: DR. 36 PG. 10.
9. "AS–BUILT CITY OF WATERBURY, CONNECTICUT CHASE PARKWAY SEWAGE PUMPING STATION SITE PLAN, ELEVATION AND SECTIONS DRAWING NO. 976–10–1" SCALE: AS NOTED; DATED: OCTOBER 16, 1975; PREPARED BY: GOODKIND & O'DEA, INC.; MAP COURTESY OF WATERBURY ENGINEERING DEPARTMENT.
10. "EXISTING CONDITIONS SURVEY & PROPERTY TO BE CONVEYED TOWN OF WATERBURY MAP SHOWING THE PASSWAY FOR THE STATE OF CONNECTICUT DEPARTMENT OF PUBLIC WORKS NAUGATUCK COMMUNITY COLLEGE CHASE PARKWAY & WEST MAIN STREET" SCALE: 1"=20'; DATED: MAY 2009; PREPARED BY: JONATHAN KULA; MAP NOT FILED.
11. "EASEMENT SURVEY TOWN OF WATERBURY MAP SHOWING EASEMENT GRANTED TO DIMI LLC OF 1392 & 1404 WEST MAIN STREET BY THE STATE OF CONNECTICUT DEPARTMENT OF PUBLIC WORKS ON BEHALF OF BOARD OF TRUSTEES OF COMMUNITY COLLEGES–TECHNICAL COLLEGES" SCALE: 1"=30'; DATED: JANUARY 2008; PREPARED BY: JONATHAN KULA; W.L.R.: DR. 45 PG. 15.
12. "RIGHT OF WAY SURVEY TOWN OF WATERBURY MAP SHOWING EASEMENT ACQUIRED FROM 678 CHASE PARKWAY ASSOCIATES, LLC BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION CHASE PARKWAY–PROJECT NO. 151–000 SERIAL NO. 92 SHEET 1 OF 1: SCALE: 1"=20'; DATED: JANUARY 2008; PREPARED BY: JONATHAN KULA; W.L.R.: DR. 44 PG. 60.
13. "RIGHT OF WAY SURVEY TOWN OF WATERBURY MAP SHOWING EASEMENT ACQUIRED FROM 650 CHASE ASSOCIATION, INC. BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION CHASE PARKWAY–SR–845–PROJECT NO. 151–000 SERIAL NO. 91 SHEET 1 OF 1: SCALE: 1"=20'; DATED: JANUARY 2008; PREPARED BY: JONATHAN KULA; W.L.R.: DR. 44 PG. 59.
14. "DIVISION OF LAND–LOT 30 INTO LOTS 30A AND 30B PREPARED FOR BACKBONE, LLC CHASE PARKWAY (CT RT 845) WATERBURY, CONNECTICUT" SCALE: 1"=40'; DATED: MARCH 31, 2005; PREPARED BY: MEYERS ASSOCIATES P.C.; W.L.R.: DR. 42 PG. 84.
15. "PROPERTY SURVEY PROPERTY N/F OF MICHAEL FERRARA LOTS 130 THRU 139 & LOTS 144 THRU 150 SECTION THREE WESTSIDE MANOR CHAPIN AVE. WATERBURY, CONNECTICUT: SCALE: 1"=40'; DATED: MARCH 30, 2005; REVISED TO: AUGUST 19, 2005; PREPARED BY: COMPASS ENGINEERING GROUP, LLC; W.L.R.: DR. 41 PG. 49.
16. "COMPILATION PLAN MAP SHOWING EASEMENT AREA TO BE GRANTED TO YANKEE GAS SERVICES COMPANY ACROSS THE PROPERTY OF PARK WEST LLC 1320 WEST MAIN STREET WATERBURY, CONNECTICUT; SCALE: 1"=20'; DATED: MAY 28, 2003; PREPARED BY: MEYERS ASSOCIATES P.C.; W.L.R.: DR. 39 PG. 98.
17. "IMPROVEMENT LOCATION SURVEY SHOWING 'MIDDLEBURY CROSSING APARTMENTS' NEWFIELD AVENUE & PARK ROAD WATERBURY, CONNECTICUT" SCALE: 1"=60'; DATED: JUNE 2, 2000; PREPARED BY: RIORDAN LAND SURVEYING; W.L.R.: DR. 37 PG. 57.
18. "SITE PLAN PREPARED FOR DR. RONALD RITUCCI CHASE PARKWAY WATERBURY, CONNECTICUT" SCALE: 1"=20'; DATED: JULY 2, 1997; REVISED TO APRIL 2, 1998; PREPARED BY: MEYERS ASSOCIATES P.C.; W.L.R.: DR. 36 PG. 9.
19. "ROAD TAKING MAP OF ANDREW LANE BY HE CITY OF WATERBURY PREPARED FOR SUSAN A. MACDONALD & CHRISTOPHER M. ARMSTRONG ANDREW LANE AND PARK ROAD WATERBURY, CONNECTICUT" SCALE:1"=40'; DATED: JANUARY 9, 1996; PREPARED BY: NOWAKOWSKI–O'BYMACHOW–KANE; W.L.R.: DR. 35 PG. 47.
20. "ALTA/ACSM LAND TITLE SURVEY HEALTH CARE AND RETIREMENT CORPORATION OF AMERICA SITE NO. 4" SCALE: 1"=20'; DATED: DECEMBER 13, 1990; PREPARED BY: CARROCCIO–COVILL & ASSOCIATES, INC.; W.L.R.: DR. 31 PG. 61.
21. "IMPROVEMENT LOCATION SURVEY SHOWING WESTLEDGE APARTMENTS NEWFIELD AVE. & PARK ROAD WATERTOWN, CONNECTICUT" SCALE: 1"=60; DATED: AUGUST 5, 1998; PREPARED BY: RIORDAN SURVEYING; W.L.R.: DR. 36 PG. 61.
22. "MAP SHOWNG REVISION OF LOT #161 WITH EXISTING FOUNDATION ON PROPERTY OF CORBO ASSOCIATES, INC THOMPSON AVENUE WATERBURY, CONN." SCALE: 1"=20'; DATED: JULY 12, 1988; PREPARED BY: RICHARD MATTSON; W.L.R.: DR. 25 PG. 53.
23. "MAP SHOWNG EASEMENT AREA TO BE GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY ACROSS THE PROPERTY OF A. RALPH CORBO, JR. THOMPSON AVENUE, WATERBURY, CONN." SCALE: 1"=40'; DATED: NOVEMBER 19, 1987; PREPARED BY: CARL G. MATTSON; W.L.R.: DR. 22 PG. 73.
24. "MAP OF LAND OF CATHERINE NAPOLI MASCOLO WATERBURY, CONN. SHOWING REVISION OF PROPERTY LINE BETWEN LOTS 31 & 32" SCALE: 1"=20'; DATED: MAY 9, 1984; REVISED TO: MAY 21, 1984; PREPARED BY: THE A. J. PATTON COMPANY; W.L.R.: DR. 13 PG. 86.
25. "TOWN OF WATERBURY MAP SHOWING LAND RELEASED TO CITY OF WATERBURY BY THE STATE OF CONNECTICUT INTERSTATE ROUTE 84 (LIMITED ACCESS HIGHWAY); PROJECT NO. 151–78; SERIAL NO. 158A" SCALE: 1"=40'; DATED: APRIL 1983; REVISED TO: APRIL 29, 1985; PREPARED BY: OLIVER PAQUETTE; W.L.R.: DR. 8 PG. 79.
26. "PROPOSED CONSTRUCTION LOT #69 PARKLAND ACRES SECTION V SUBDIVISION OF LAND N/F PATRICK BOSTA (V595 P279) PARKWOOD AVENUE, WATERBURY, CONNECTICUT BELONGING TO MICHAEL O'CONNOR AND RICHARD RICCIARDI" SCALE: 1"=20'; DATED: AUGUST 7, 1979; REVISED TO: AUGUST 27, 1979' PREPARED BY: PAUL ASSOCIATES; W.L.R.: DR. 9 PG. 52.
27. "THE CONNECTICUT LIGHT AND POWER COMPANY ELECTRIC FACILITIES OVER PROPERTY OF CITY OF WATERBURY CHASE PARKWAY PUMPING STATION" SCALE: 1"=20'; DATED: JANUARY 28, 1976; W.L.R.: DR. 6 PG. 29.
28. "MAP SHOWING EASEMENT AREA TO BE GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY ACROSS THE PROPERTY OF THE STATE OF CONNECTICUT CHASE PARKWAY (ROUTE 14) WATERBURY, CONNECTICUT" SCALE: 1"=60'; DATED: SEPTEMBER 26, 1968; PREPARED BY: CLOSE, JENSEN & MILLER; W.L.R.: DR. 31 PG. 1.
29. "CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY TOWN OF WATERBURY YANKEE EXPRESSWAY FROM THE MIDDLEBURY–WATERBURY TOWN LINE TO 1900 FEET EAST OF WEST MAIN STREET, PROJECT 151–11, SHEETS 2, 3, AND 4 OF 4" SCALE: 1"=80'; DATED: FEBRUARY 2, 1968; W.L.R.: DR. 2 PG. 144.
30. "YOUR PARK LAND OF ANDREW & MARY YURKOVSKY WATERBURY, CONN." SCALE: 1"=40'; DATED: JUNE 1965; PREPARED BY: SAMUEL FRANK; W.L.R.: BK. 41 PG. 46.
31. "MAP OF PORTION OF LAND BELONGING TO CHARLOTTE K. JANES WATERBURY, CONN." SCALE: 1"=40'; DATED: JUNE 25, 1962; PREPARED BY: THE A. J. PATTON CO.; W.L.R.: BK 34 PG. 10.
32. "TOWN OF WATERBURY MAP SHOWNG LAND TRANSFERRED FROM STATE DEPARTMENT OF EDUCATION TO STATE OF CONNECTICUT PROJECT NO. 151–78, SERIAL NO. 145" SCALE: 1"=40' DATED: AUGUST 1961; W.L.R.: BK 41 PG. 22.
33. "TOWN OF WATERBURY MAP SHOWNG LAND ACQUIRED FROM ROSE M. GAGNON TO STATE OF CONNECTICUT PROJECT NO. 151–78, SERIAL NO. 137" SCALE: 1"=40' DATED: JULY 1961; W.L.R.: BK 36 PG. 14.
34. "REVISED PLAN OF 'MAP OF PROPERTY BELONGING TO BENEDICT A. JOY SECTION 4 AS SHOWN ON MAP ENTITLED MAP OF JOYCROFT OWNED AND DEVELOPED BY EDWARD P. JOY WATERBURY, CONNECTICUT" SCALE: 1"=40'; DATED: MAY 1957; PREPARED BY: JOHN DONAHUE; W.L.R.: BK. 27 PG. 72.
35. "REVISED MAP OF LAND BELONGING TO SEYMOUR I. ZONN AND GENEVIEVE TANNER VOL. 731 P. 445 LOTS NO'S 19–20–21 AS SHOWN ON 'MAP OF LAND BELONGING TO GEORGE NORTON WATERBURY CONN. 1927' IN MAP BK 14 P. 66–67 REVISED LOTS TO BE KNOWN AS A & B" SCALE: 1"=20'; DATED: JULY 1956; PREPARED BY: JOHN DONAHUE.
36. "AMENDED MAP PARKLAND ACRES SEC. #4 PROPERTY SUBDIVISION OF PARKLAND ACRES INC. NORTHWOOD DRIVE WATERBURY, CONN." SCALE: 1"=40'; DATED: JULY 5, 1955; PREPARED BY: CARL G. MATTSON; W.L.R.: BK. 26 PG. 18.
37. "SECTION III PARKLAND ACRES LAND SUBDIVISION" SCALE: 1"=40'; DATED: MARCH 20, 1954; PREPARED BY: ARTHUR F. HOFFMAN; W.L.R.: BK. 24 PG. 95.
38. "SECTION ONE CATHERINE C. McDONALD LAND WATERBURY, CONN." SCALE: 1"=40'; DATED: DECEMBER 17, 1947; PREPARED BY: THE A. J. PATTON CO.; W.L.R.: BK. 18 PG. 5.
39. "MAP SHOWNG LOTS ON CARDINAL LANE SECTION THREE OF JOYCROFT DEVELOPMENT" SCALE: 1"=40'; DATED: SEPTEMBER 1946; PREPARED BY: JOHN DONAHUE; W.L.R.: BK. 17 PG. 9.
40. "MAP OF PROPERTY BELONGING TO BENEDICT A. JOY SECTION 4 AS SHOWN ON A MAP ENTITLED 'MAP OF JOYCROFT OWNED AND DEVELOPED BY EDWARD P. JOY WATERBURY, CONN. JULY 1942'" SCALE: 1"=40 ';DATED: MARCH 1954; PREPARED BY: JOHN DONAHUE; W.L.R.: BK. 24 PG. 1.
41. "PROPERTY OF GEORGE W. CASSIDY WATERBURY, CONN." SCALE: 1"=20'; DATED: FEBRUARY 1942; PREPARED BY: WILLIAM B. REYNOLDS; W.L.R.: BK. 15 PG. 12.
42. "MAP OF JOYCROFT OWNED AND DEVELOPED BY EDWARD P. JOY WATERBURY, CONN. SECTION ONE" SCALE: 1"=40'; DATED: SEPTEMBER 1940; PREPARED BY: JOHN DONAHUE; W.L.R.: BK. 14 PG. 61.
43. MAP WITH NO TITLE; SCALE: 1"=20'; DATED: NOVEMBER 10, 1933; PREPARED BY: ARTHUR N. WOOD; W.L.R.: BK. 14 PG. 56.
44. "MAP OF LAND BELONGING TO GEORGE NORTON WATERBURY, CONN." SCALE: 1"=30'; DATED: 1927; PREPARED BY: THE A. J. PATTON CO.; W.L.R.: BK. 14 PG. 66.
45. "MAP SHOWNG PROPERTY OF PETER A. LECOUR PARK ROAD WATERBURY, CONN." SCALE: 1"=40'; DATED: JULY 1924; PREPARED BY: FRANK J. SMYTH; W.L.R.: BK. 7 PG. 35.
46. "MAP OF SECTION THREE WEST SIDE MANOR BELONGING TO JOSEPH A. KUKENIS WATERBURY, CONN." SCALE: 1"=100'; DATED: MAY 1920; PREPARED BY: UNKNOWN; W.L.R.: BK PG 90–91.
47. "MAP OF LAND OF DOMENIC F. CASTELANO WATERBURY, CONN." SCALE: 1"=50'; DATED: APRIL 4, 1945; PREPARED BY: THE A. J. PATTON CO.; W.L.R.: BK. 16 PG. 2–3.
48. LAYOUT OF PARK ROAD 1914 WATERBURY ENGINEERING FILE NUMBER 5–16–2 AND 5–16–3; MAP COURTESY OF THE WATERBURY ENGINEERING DEPARTMENT.
49. "ZONE CHANGE MAP FROM RS TO RM #1404 WEST MAIN STREET WATERBURY, CONNECTICUT PREPARED FOR MICHAEL ROKOSKI" SCALE: 1"=20'; DATED: MAY 14, 1992; PREPARED BY: MEYERS ASSOCIATES P.C.; W.L.R.: DR. 31 PG. 98.
50. "REVISION OF LOTS #1, #2, #3, #4, #5, #6, #7 & #57 SECTION #3 PARKLAND ACRES WATERBURY, CONN." SCALE: 1"=40'; DATED" FEBRUARY 21, 1956; PREPARED BY: CARL G. MATTSON; W.L.R.: BK 24 PG. 42.
51. "REVISED PLAN OF LOT NO. 60 SECTION #3 PARKLAND ACRES DEEPWOOD DRIVE, WATERBURY, CONN." SCALE" 1"=20'; DATED: JULY 27, 1956; PREPARED BY: RUSSELL BOYCE; W.L.R.: BK. 25 PG. 53.
52. "REVISION OF LOTS 8–9–10–11–12–12–14–15 PARKLAND ACRES–SECTION THREE WATERBURY, CONN." SCALE:1"=40'; DATED: DECEMBER 1, 1955; PREPARED BY: RUSSELL BOYCE; W.L.R.: BK. 25 PG. 16.
53. "PLAN SHOWNG REVISED LAYOUT OF LOTS 2, 3, 4 AND 6 PARK–LAND ACRES SECTION ONE WATERBURY, CONN." SCALE: 1"=40'; DATED: JUNE 1952; PREPARED BY: WILLIAM B. REYNOLDS; W.L.R.: BK. 21 PG. 33.
54. "PLOT PLAN LOT #55 PARKLAND ACRES SEC. #4 NORTHWOOD DRIVE WATERBURY, CONN." SCALE: 1"=20'; DATED: SEPTEMBER 5, 1957; PREPARED BY: BOYCE ENGINEERING ASSOCIATES; W.L.R.: BK. 27 PG. 86–87.
55. "TOWN OF WATERBURY MAP SHOWNG LAND EASEMENT & RIGHTS OF ACCESS ACQUIRED FROM FRANK McCANN ET AL BY THE STATE OF CONNECTICUT RELOCATION OF ROUTE U.S. 6 –I–84, PROJECT NO. 151–78, SERIAL NO. 144" SCALE: 1"=40' DATED" AUGUST 1961; PREPARED BY: THE STATE OF CONNECTICUT; W.L.R.: BK. 33 PG. 102–103.
56. "STATE OF CONNECTICUT PUBLIC WORKS DEPARTMENT T. J. MURPHY, JR., COMMISSIONER MAP SHOWING PROPOSED DRAINAGE EASEMENTS TO BE CONVEYED BY FRANK McCANN ET AL TO STATE OF CONNECTICUT (DEPARTMENT OF EDUCATION) AND LAND TO BE EXCHANGED, PROJECT NO. BI–R–186" SCALE: 1"=40'; DATED: JANUARY 12, 1962; PREPARED BY: WALTER B. DUNBAR; W.L.R.: BK. 33 PG. 33.
57. "SECTION TWO OF PARK–LAND ACRES LAND OF PATRICK A. BASTA WATERBURY, CONN." SCALE:1"=40'; DATED: JANUARY 1955; PREPARED BY: E. H. CHRISTOPHERSON; W.L.R.; BK. 24 PG. 40.
58. "CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF WATERBURY–MIDDLEBURY–WATERBURY ROAD FROM THE MIDDLEBURY TOWN LINE EASTERLY TO HIGHLAND AVE. ROUTE NO. 14 PROJECT NO. 151–03 SHEETS 1 & 2 OF 4" SCALE: 1"=40'; DATED: JANUARY 31, 1931; MAP COURTESY OF CONNDOT DISTRICT IV.
59. "SITE PLAN LOTS 38 & 40 BRIER CLIFF SUBDIVISION JANWOOD ROAD WATERBURY, CONNECTICUT PREPARED FOR JOHN W. & KATHLEEN M. HARRIS" SCALE: 1"=10'; DATED: JULY 10, 2000; PREPARED BY: LAND–DATA; MAP NOT FILED.
60. "CITY OF WATERBURY MAP SHOWNG EASEMENT TRANSFERRED FROM THE STATE OF CONNECTICUT (DEPARTMENT OF HIGHER EDUCATION) BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION WIDENING AND RECONSTRUCTION OF WEST MAIN STREET" SCALE: 1:250; DATED: SEPTEMBER 1998; PREPARED BY: LAWRENCE R. GEISSLER; W.L.R.: DR. 38 PG. 40.
61. "CITY OF WATERBURY MAP SHOWNG EASEMENT ACQUIRED FROM RITA FRANCISCO BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION WIDENING AND JANUARY 1999; PREPARED BY: LAWRENCE R. GEISSLER; W.L.R.: DR. 38 PG. 53.
62. "REVISED MAP OF SECTION ONE OF PARK–LAND ACRES WATERBURY, CONN." SCALE: 1"=40'; DATED: JUNE 1952; PREPARED BY: WILLIAM B. REYNOLDS; W.L.R.: BK. 21 PG. 70.

LEGEND

	SUBJECT PROPERTY LINE	650	CONTOURS
	RIGHT OF WAY & ABUTTING PROPERTY LINE	X 621.5	SPOT ELEVATION
	EASEMENT LINE		CONIFEROUS TREE
	STONE WALL		DECIDUOUS TREE
	ROCK OUTCROP		BUSH
	WETLAND BOUNDARY		CHAIN LINK FENCE
	WETLAND		WOOD FENCE
	STRUCTURE		GUIDERAIL
	EDGE OF PAVEMENT		LIGHT POLE
	TEST BORING		UTILITY POLE
	CATCH BASIN		HYDRANT
	STORM MANHOLE		WATER VALVE
	SANITARY MANHOLE		GAS VALVE
W	WATER		MONUMENT FOUND
G	GAS		IRON PIPE OR PIN FOUND
E	ELECTRIC		DRILL HOLE FOUND
T	TELEPHONE		
FO	FIBER OPTIC LINE		
OHW	OVERHEAD WIRES		

TOTAL PARCEL AREA :
4,995,219 S.F. (114.674 AC.)

MAP/BLOCK/LOT:
339 / 65 / 12
314 / 65 / 8

DEED REFERENCE:
VOL. 805 / PG. 405
VOL. 805 / PG. 410
VOL. 967 / PG. 568
VOL. 967 / PG. 570
VOL. 973 / PG. 460
VOL. 982 / PG. 81
VOL. 985 / PG. 113
VOL. 1158 / PG. 281

THIS MAP IS VALID AND AUTHORIZED BY THE BELOW SIGNATORY WHEN AND ONLY WHEN ACCOMPANIED WITH A RED LIVE SIGNATURE, A STAMPED SEAL IN RED INK AND A LIVE EMBOSSED SEAL OVER THE SIGNATURE'S NAME. ANY OTHER REPRODUCTIONS SHALL BE CONSIDERED UNAUTHORIZED

To my knowledge and belief, this map is substantially correct as noted hereon.

Edward S. Ruchin, P.L.S. Conn. # 15460

STATE OF CONNECTICUT · EDWARD S. RUCHIN · NO. 15460 · LICENSED LAND SURVEYOR

100% CONTRACT DOCUMENTS

drawing title: TOPOGRAPHIC AND BOUNDARY SURVEY	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES		
REVISIONS			
mark / date / description	drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105	date: 11/18/2014	
	project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT	scale: 1" = 40'-0"	
		drawn by: ESR	
		approved by: JB	
	CAD no.: 0950SURV.dwg / project no.: BI-CTC-436	drawing no.: EC-1	

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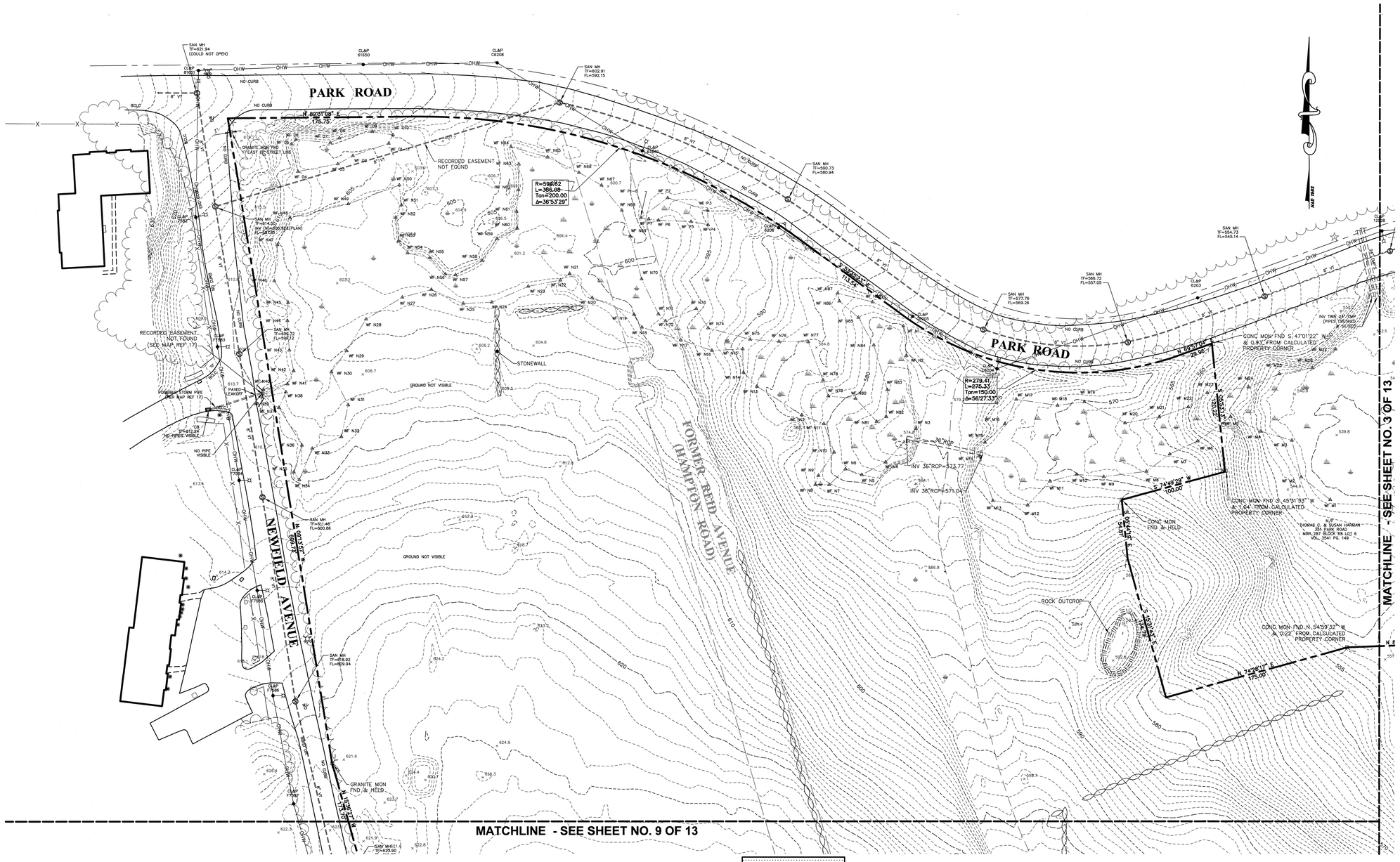

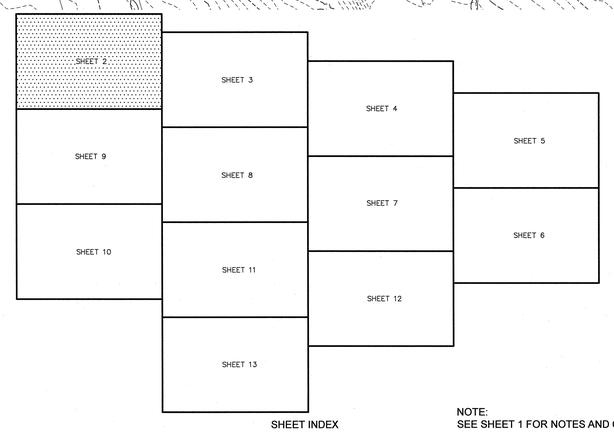

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NOTE:
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40 0 40 80
SCALE: 1" = 40'

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drawing title
TOPOGRAPHIC AND BOUNDARY SURVEY

REVISIONS

mark	date	description

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. 0950SURV.dwg
project no. BI-CTC-436

date 11/18/2014
scale 1" = 40'-0"
drawn by ESR
approved by JB
drawing no. EC-2

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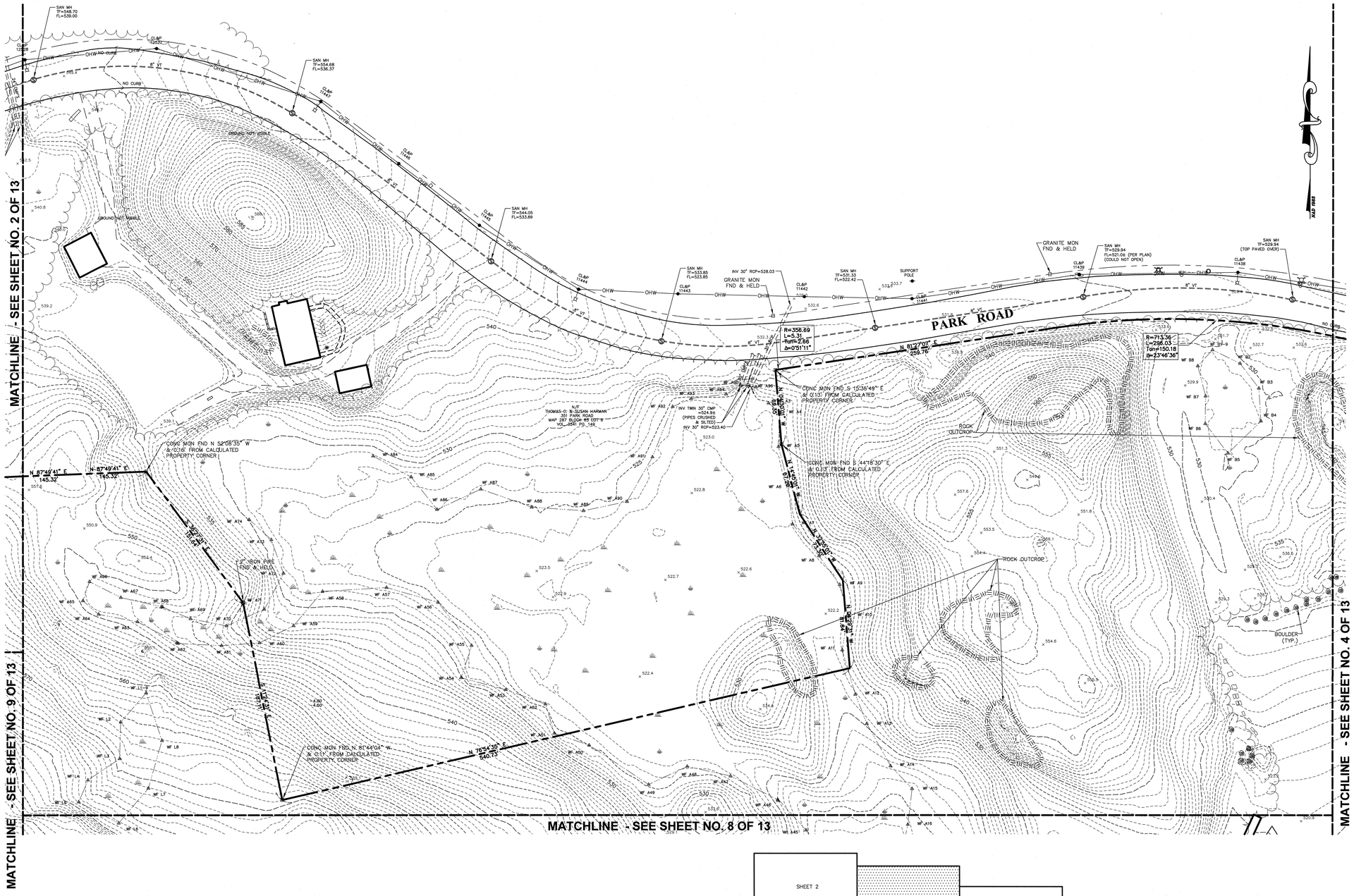

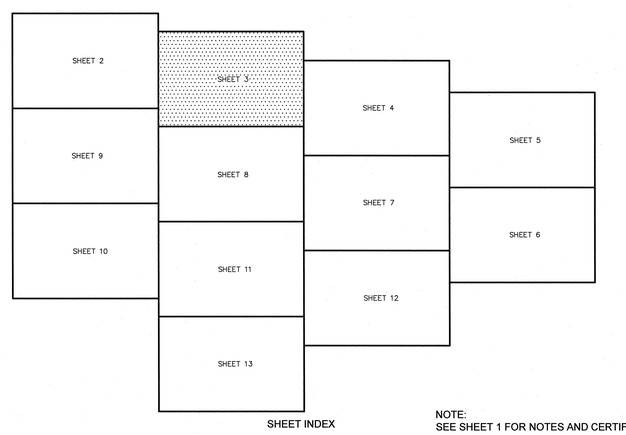

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NOTE:
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SCALE: 1" = 40'

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drawing title
TOPOGRAPHIC AND BOUNDARY SURVEY

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STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

date 11/18/2014
scale 1" = 40'-0"

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

drawn by ESR
approved by JB
drawing no. EC-3

CAD no. 0950SURV.dwg
project no. BI-CTC-436

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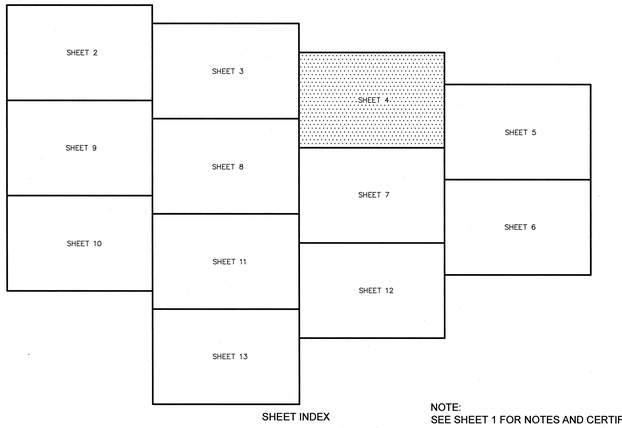

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NOTE:
SEE SHEET 1 FOR NOTES AND CERTIFICATION.

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SCALE: 1" = 40'

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drawing title: TOPOGRAPHIC AND BOUNDARY SURVEY	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES		
REVISIONS			
mark / date / description	drawing prepared by: MACCHI ENGINEERS, LLC 44 GILLETT STREET HARTFORD, CT 06105	date: 11/18/2014	
		scale: 1" = 40'-0"	
	project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT WATERBURY, CONNECTICUT	drawn by: ESR	
		approved by: JB	
	CAD no.: 0950SURV.dwg / project no.: BI-CTC-436	drawing no.: EC-4	

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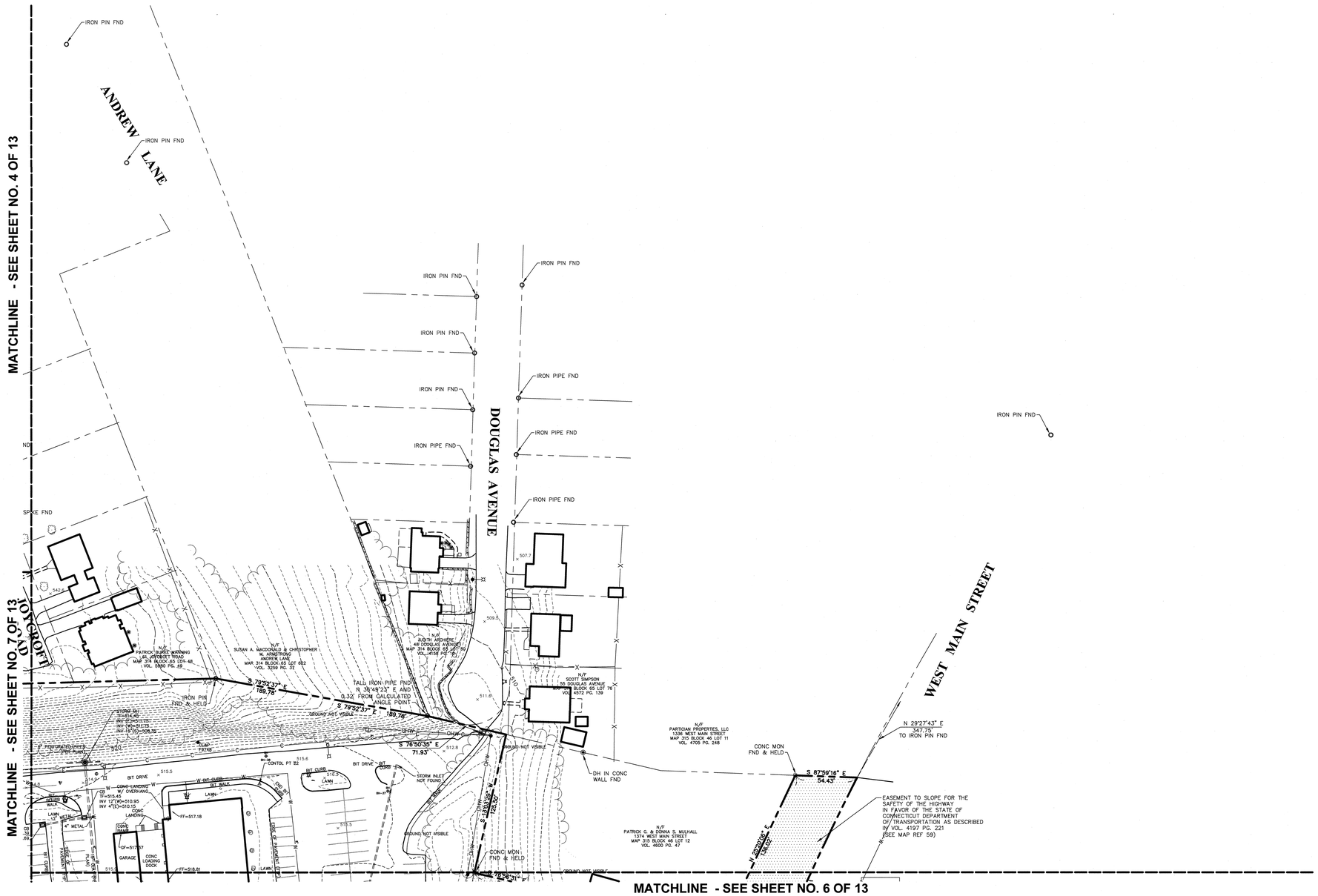

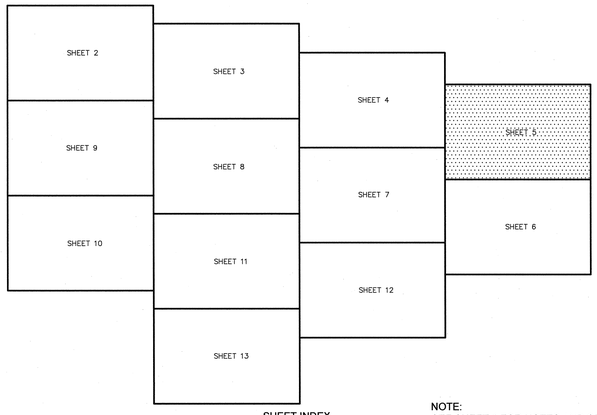

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NOTE:
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SCALE: 1" = 40'

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TOPOGRAPHIC AND
BOUNDARY SURVEY

REVISIONS

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STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. 0950SURV.dwg
project no. BI-CTC-436

date 11/18/2014
scale 1" = 40'-0"
drawn by ESR
approved by JB
drawing no. EC-5

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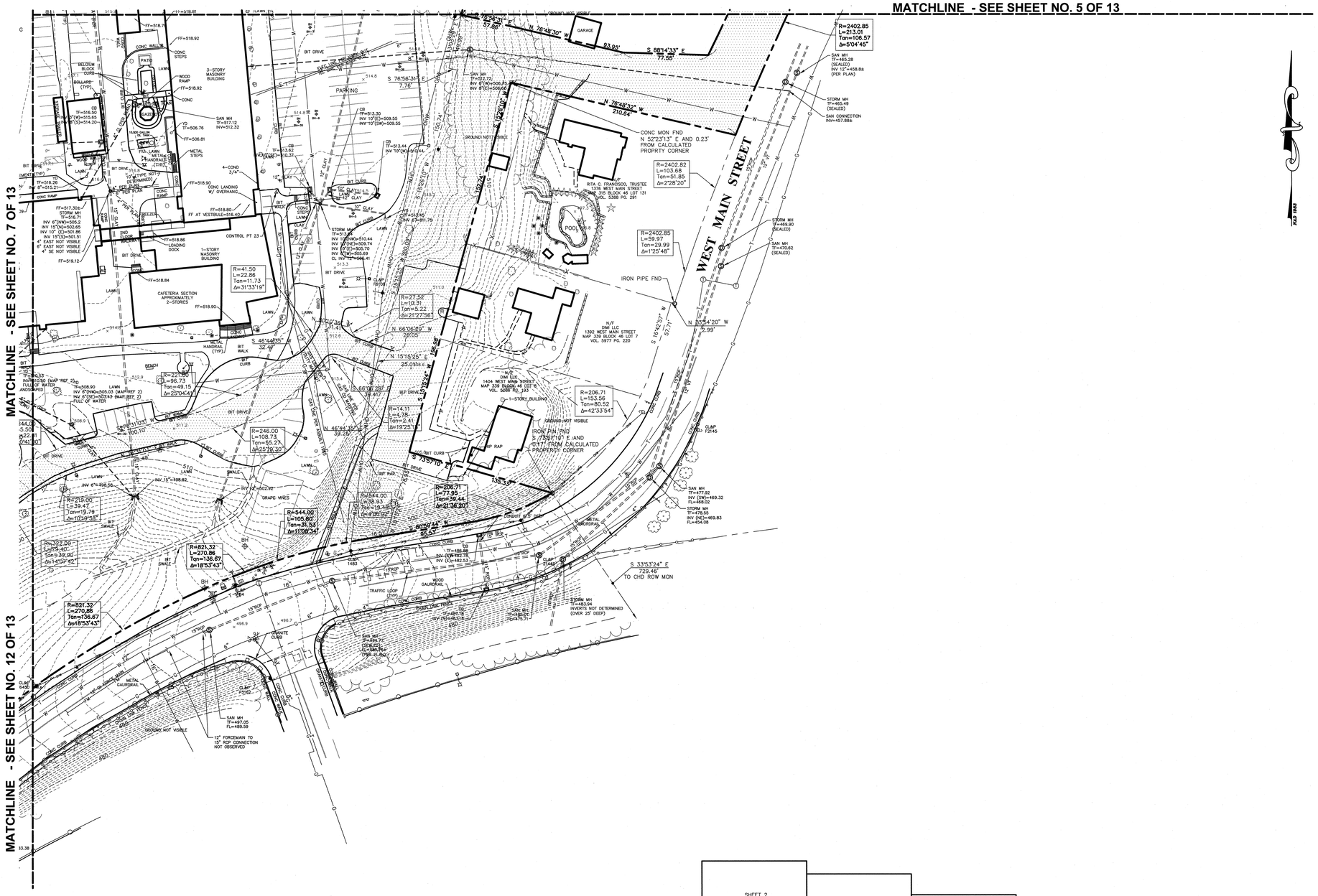

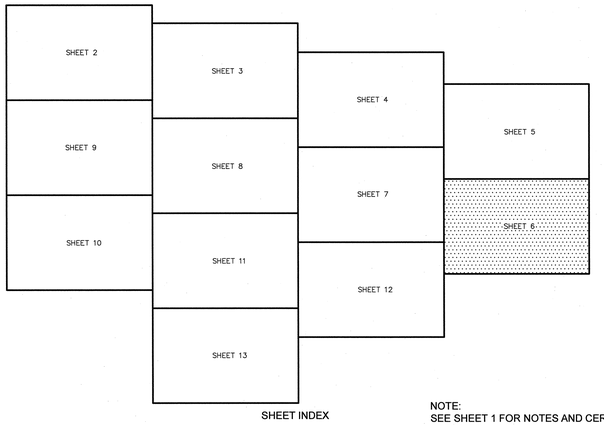

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TOPOGRAPHIC AND BOUNDARY SURVEY

REVISIONS

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STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

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MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. 0950SURV.dwg
project no. BI-CTC-436

date	11/18/2014
scale	1" = 40'-0"
drawn by	ESR
approved by	JB
drawing no.	EC-6

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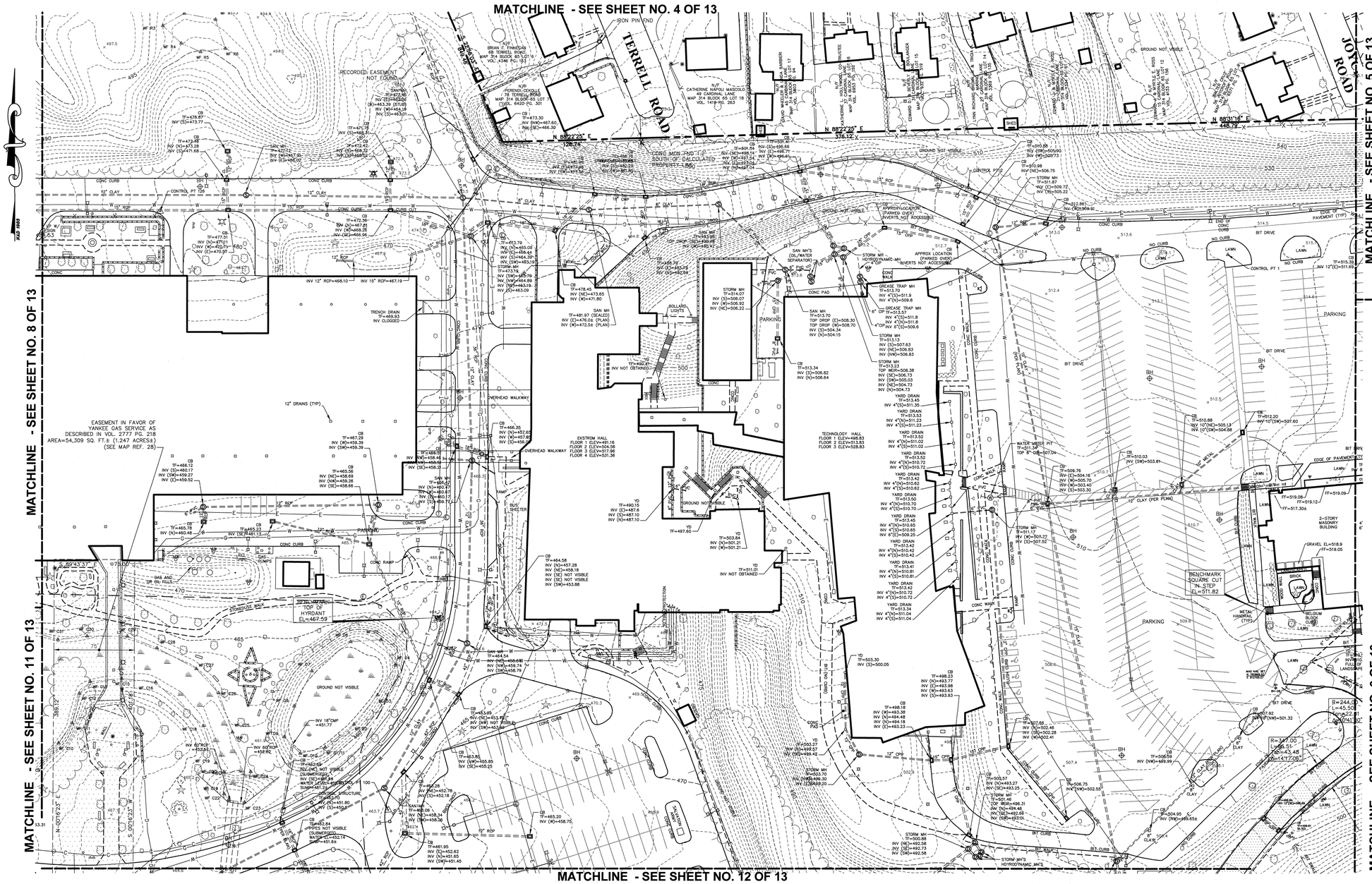

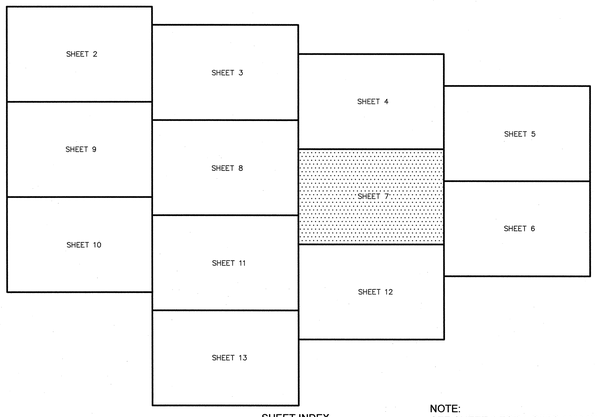

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TOPOGRAPHIC AND BOUNDARY SURVEY		
REVISIONS		
mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

date	11/18/2014
scale	1" = 40'-0"
drawn by	ESR
approved by	JB
drawing no.	EC-7
CAD no.	0950SURV.dwg
project no.	BI-CTC-436

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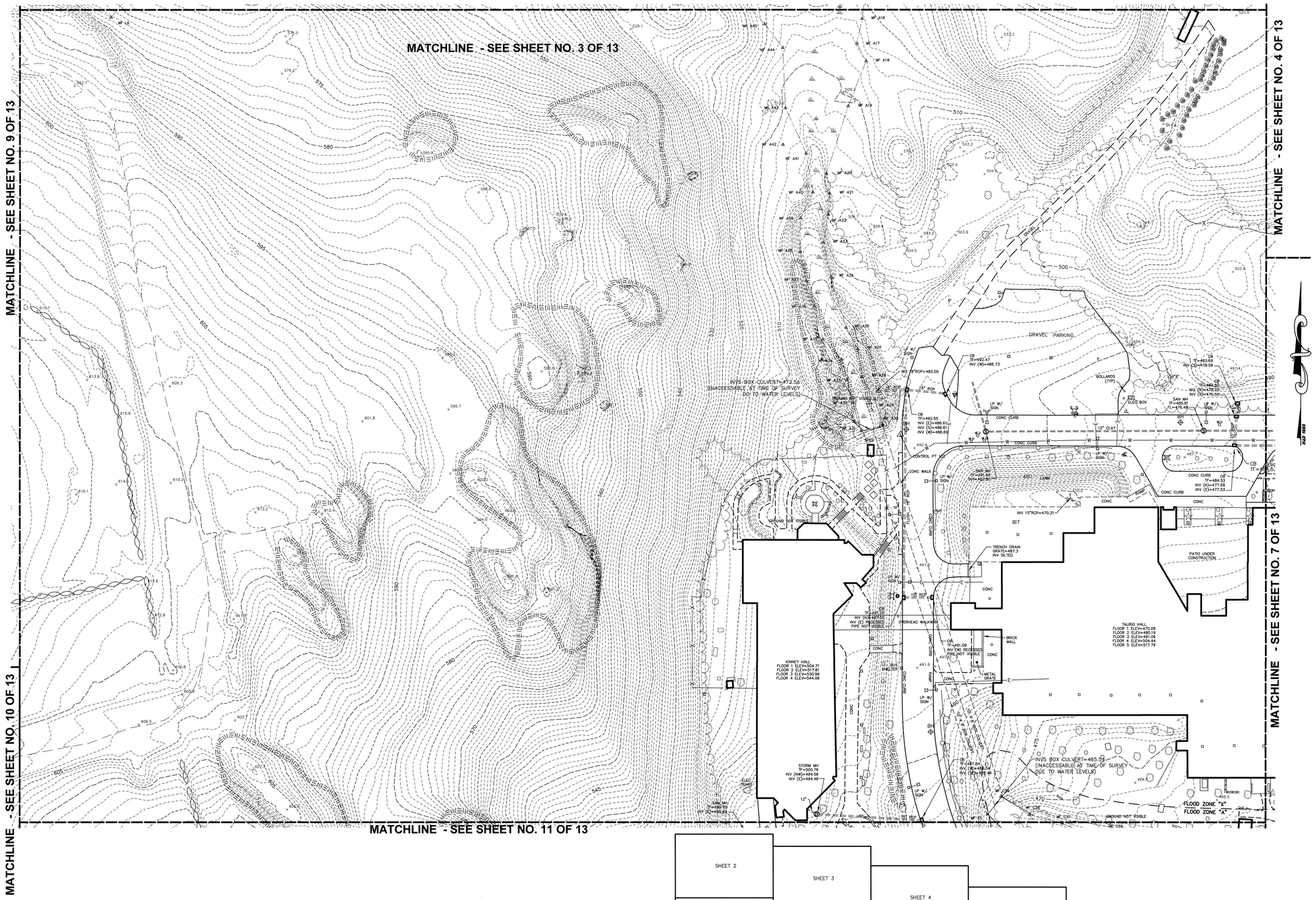

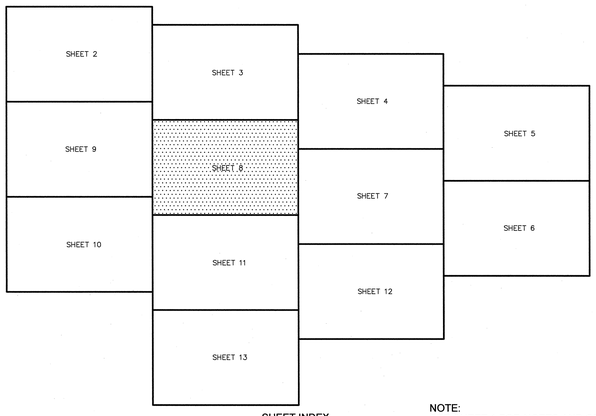

SHEET INDEX

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

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drawing title: TOPOGRAPHIC AND BOUNDARY SURVEY	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES
REVISIONS	

mark	date	description
-	-	-

drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT

CAD no. 0950SURV.dwg | project no. BI-CTC-436

date 11/18/2014 | scale 1" = 40'-0" | drawn by ESR | approved by JB | drawing no. EC-8

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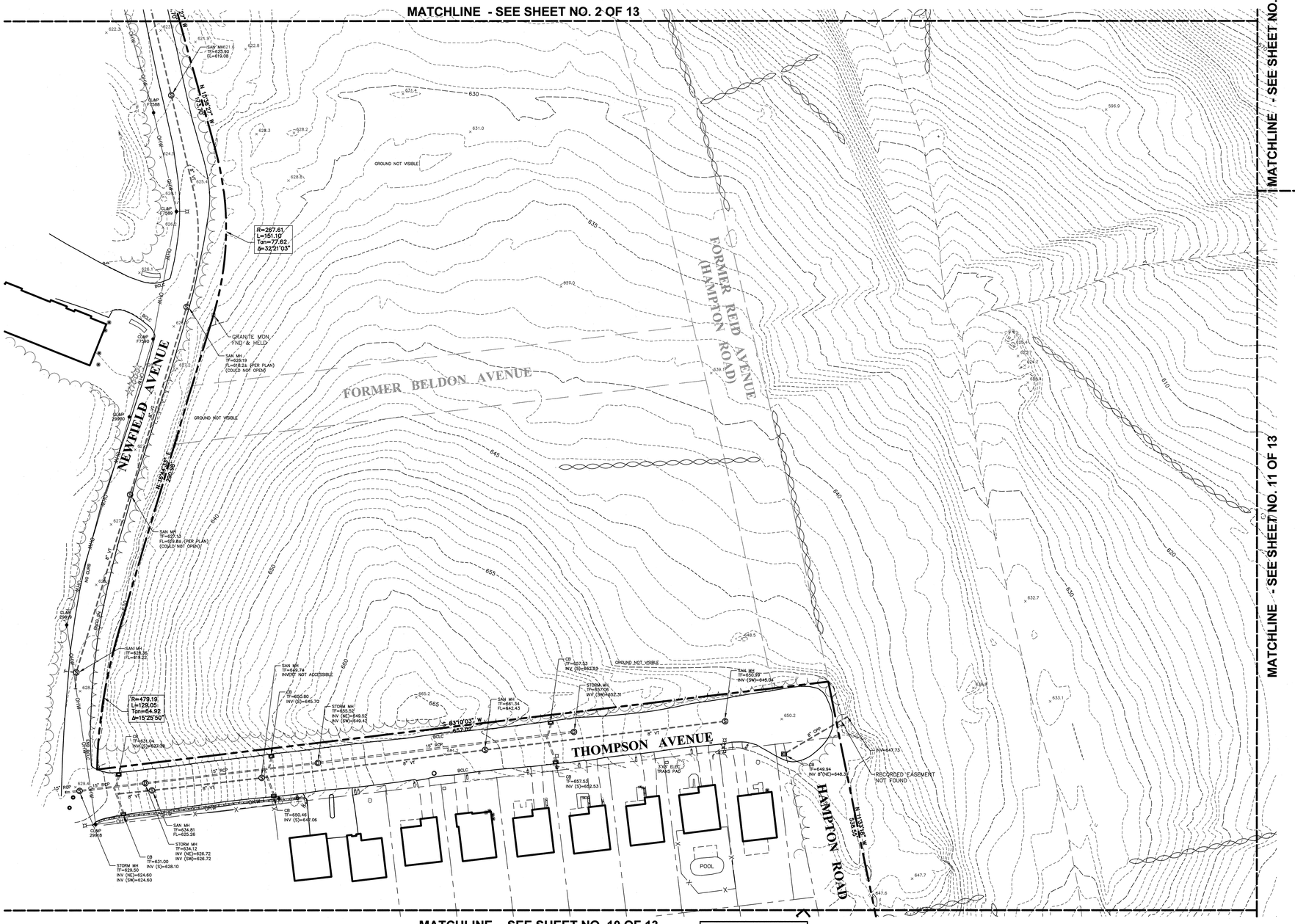
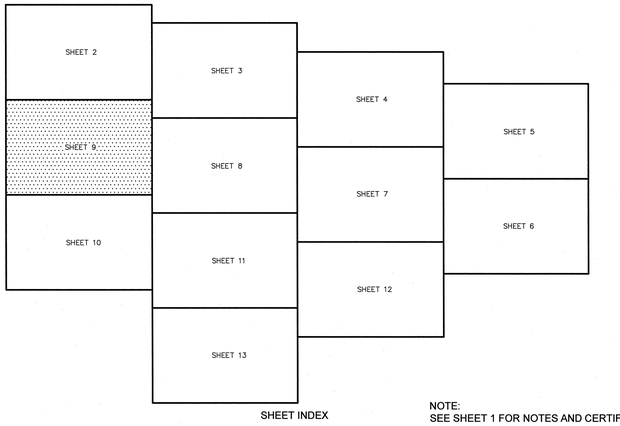
MATCHLINE - SEE SHEET NO. 2 OF 13



MATCHLINE - SEE SHEET NO. 10 OF 13



SHEET INDEX

NOTE:
SEE SHEET 1 FOR NOTES AND CERTIFICATION.

40 0 40 80
SCALE: 1" = 40'

100% CONTRACT DOCUMENTS

drawing title
TOPOGRAPHIC AND BOUNDARY SURVEY

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. 0950SURV.dwg
project no. BI-CTC-436

date 11/18/2014
scale 1" = 40'-0"
drawn by ESR
approved by JB
drawing no. EC-9

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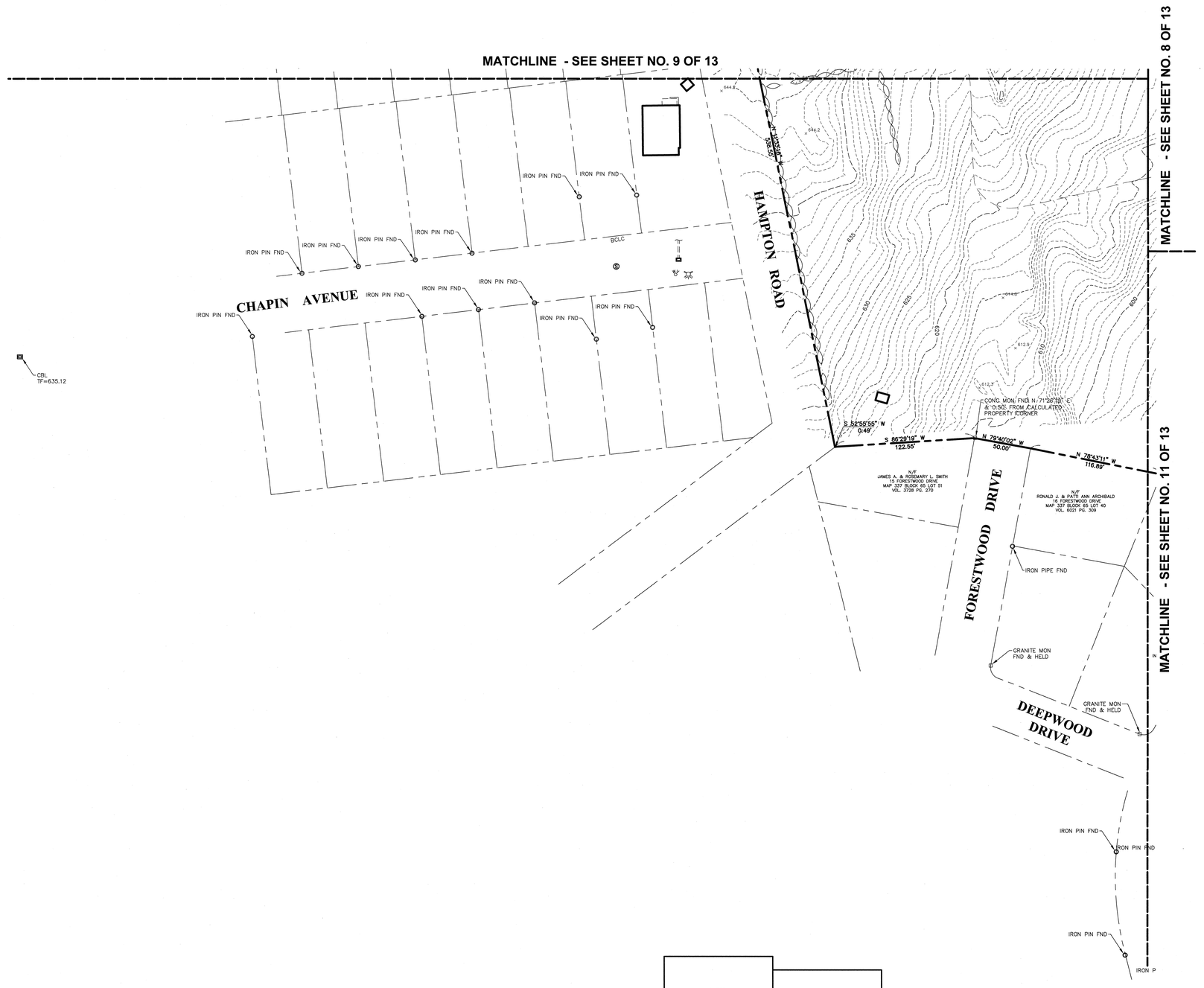

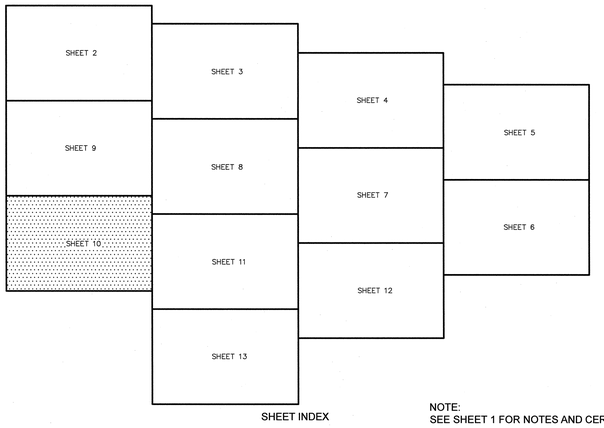

SHEET INDEX

NOTE:
SEE SHEET 1 FOR NOTES AND CERTIFICATION.

40 0 40 80
SCALE: 1" = 40'

100% CONTRACT DOCUMENTS

drawing title
TOPOGRAPHIC AND BOUNDARY SURVEY

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

date 11/18/2014
scale 1" = 40'-0"
drawn by ESR
approved by JB
drawing no. EC-10

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. 0950SURV.dwg
project no. BI-CTC-436

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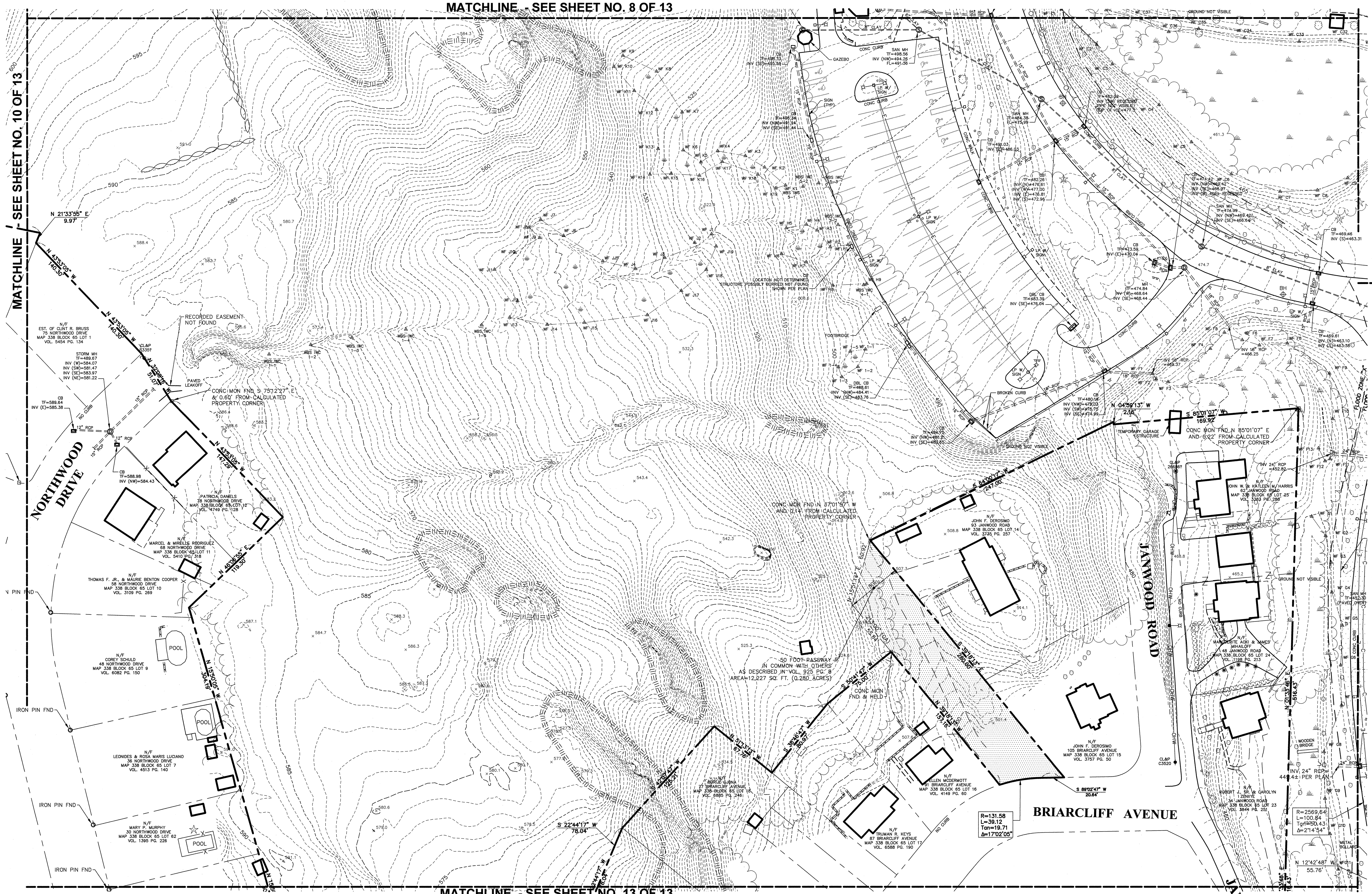

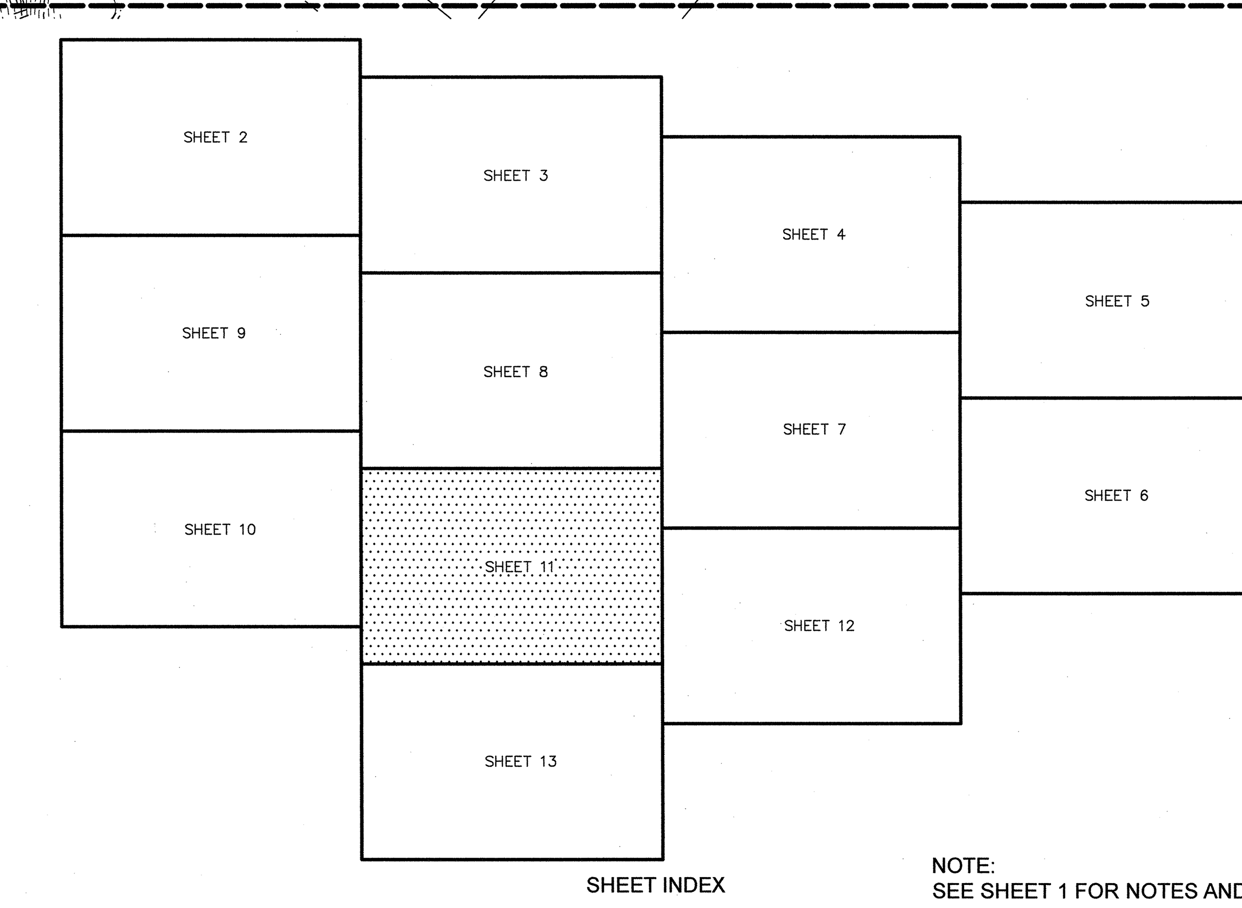

SHEET INDEX

NOTE:
SEE SHEET 1 FOR NOTES AND CERTIFICATION.

100% CONTRACT DOCUMENTS

drawing title: TOPOGRAPHIC AND BOUNDARY SURVEY	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES
REVISIONS — mark / date / description	drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105
	date: 11/18/2014
	scale: 1" = 40'-0"
	project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT
	drawn by: ESR
	approved by: JB
	CAD no.: 0950SURV.dwg
	project no.: BI-CTC-436
	drawing no.: EC-11

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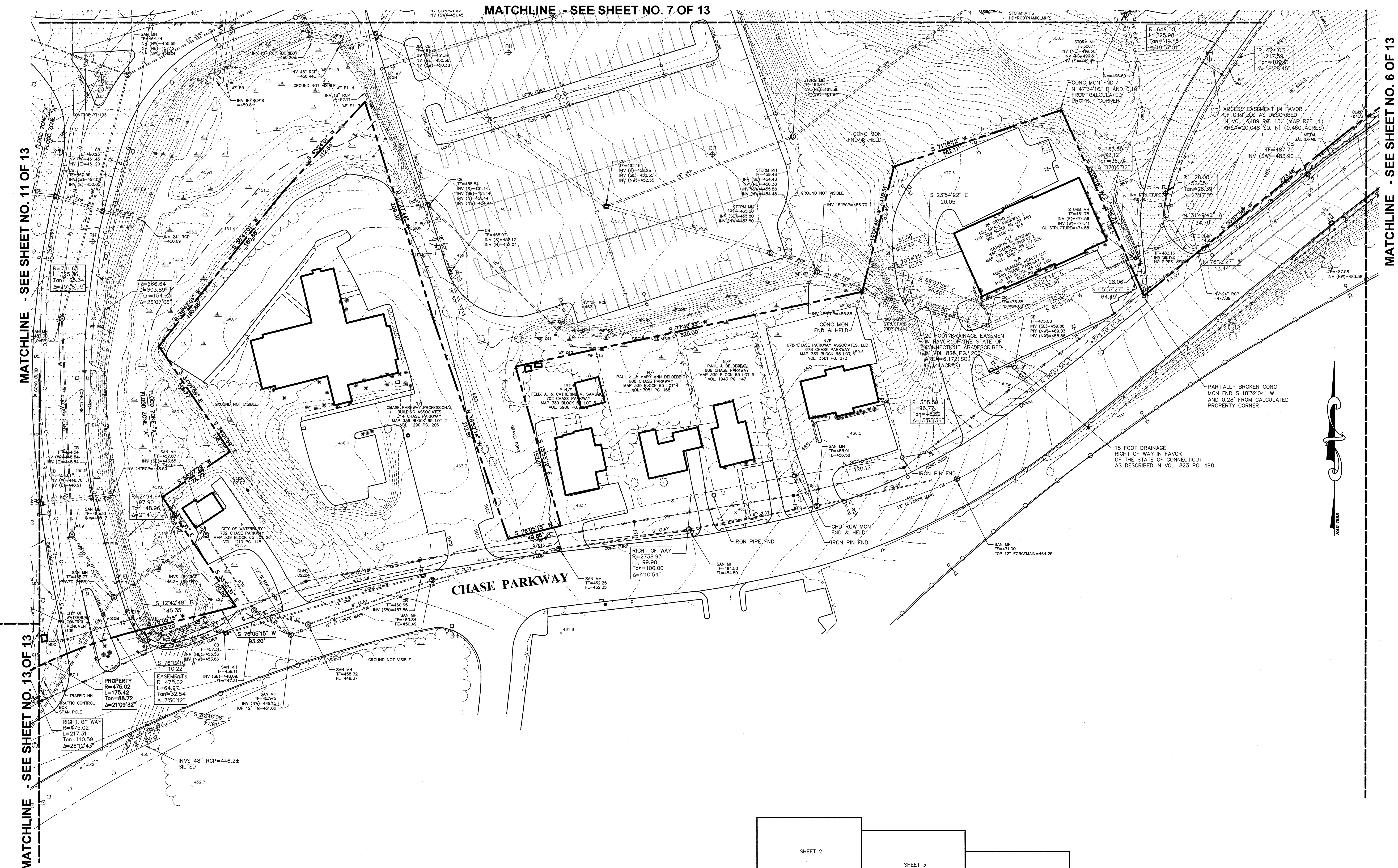

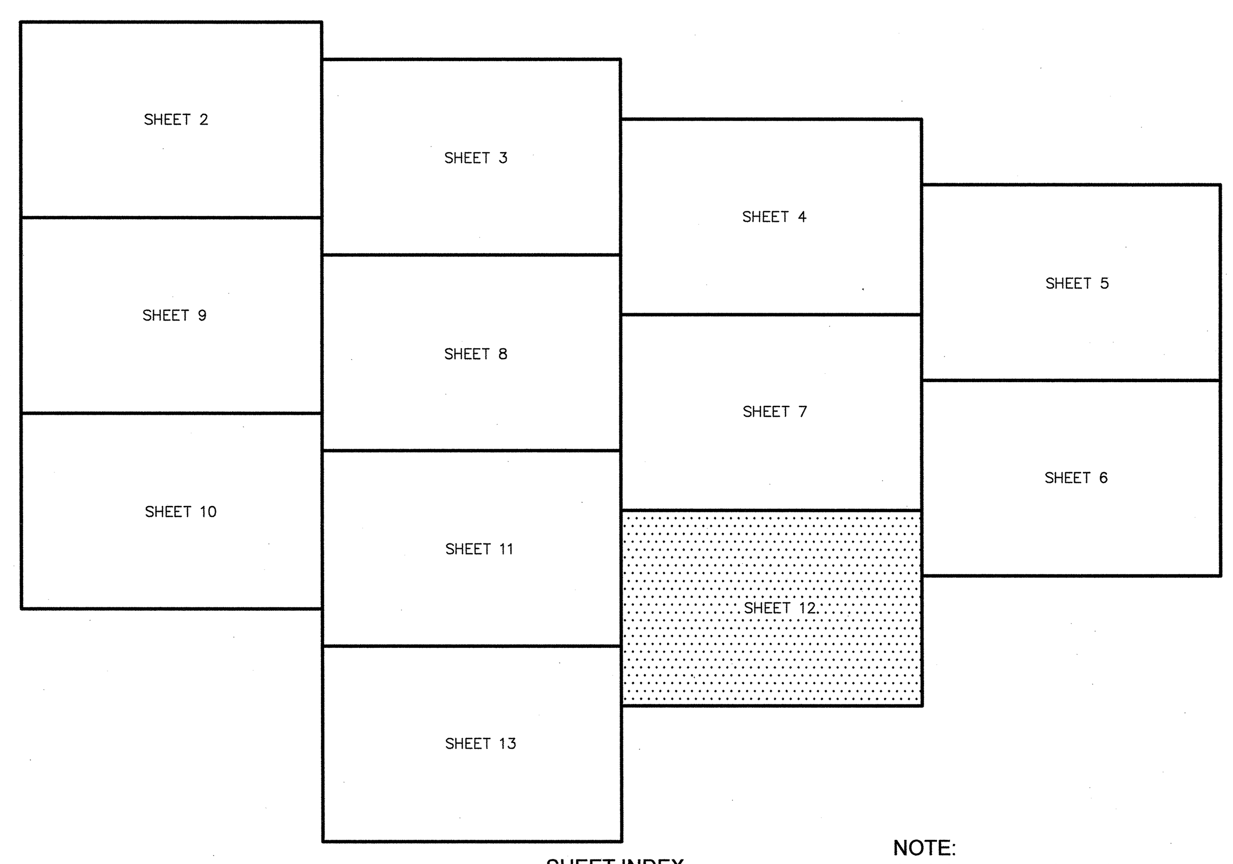

SHEET INDEX

NOTE:
SEE SHEET 1 FOR NOTES AND CERTIFICATION.

100% CONTRACT DOCUMENTS

drawing title: TOPOGRAPHIC AND BOUNDARY SURVEY	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES
REVISIONS (mark / date / description)	drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105
	project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT
	CAD no. 0950SURV.dwg — project no. BI-CTC-436

date	11/18/2014
scale	1" = 40'-0"
drawn by	ESR
approved by	JB
drawing no.	EC-12

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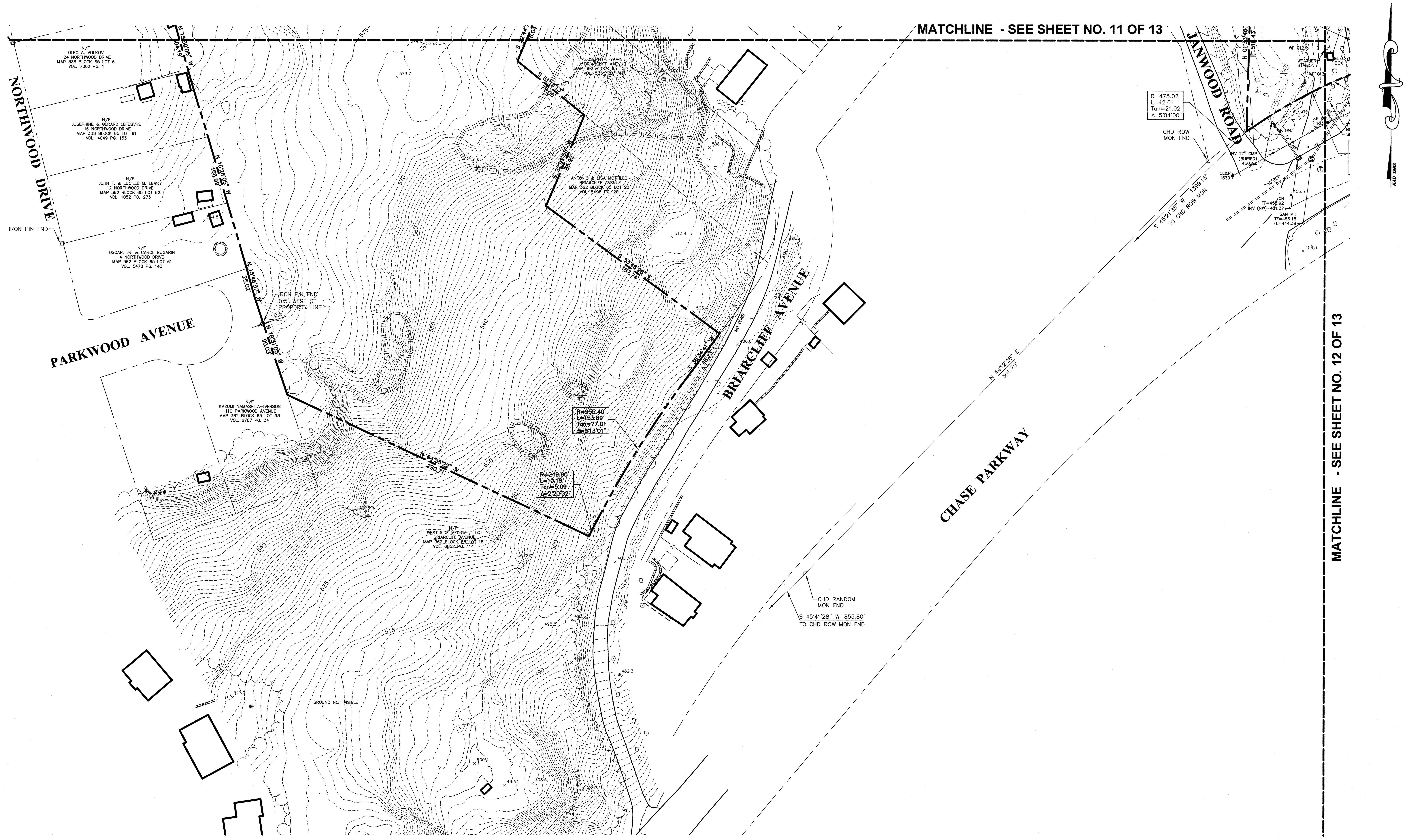

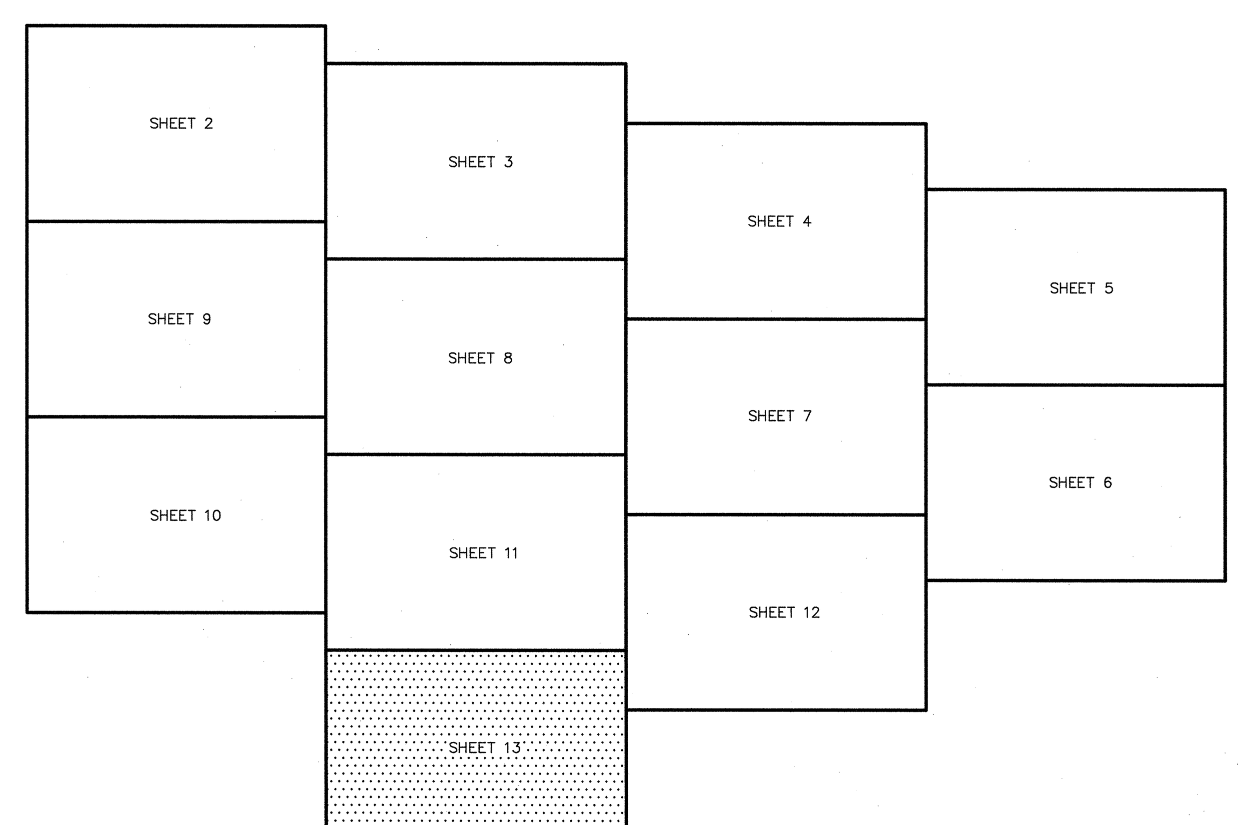

SHEET INDEX

SCALE: 1" = 40'

NOTE:
SEE SHEET 1 FOR NOTES AND CERTIFICATION.

100% CONTRACT DOCUMENTS

drawing title: TOPOGRAPHIC AND BOUNDARY SURVEY	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES
REVISIONS (mark / date / description)	drawing prepared by: MACCHI ENGINEERS, LLC 44 GILLETT STREET HARTFORD, CT 06105
date	11/18/2014
scale	1" = 40'-0"
project	NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT WATERBURY, CONNECTICUT
drawn by	ESR
approved by	JB
CAD no.	0950SURV.dwg
project no.	BI-CTC-436
drawing no.	EC-13

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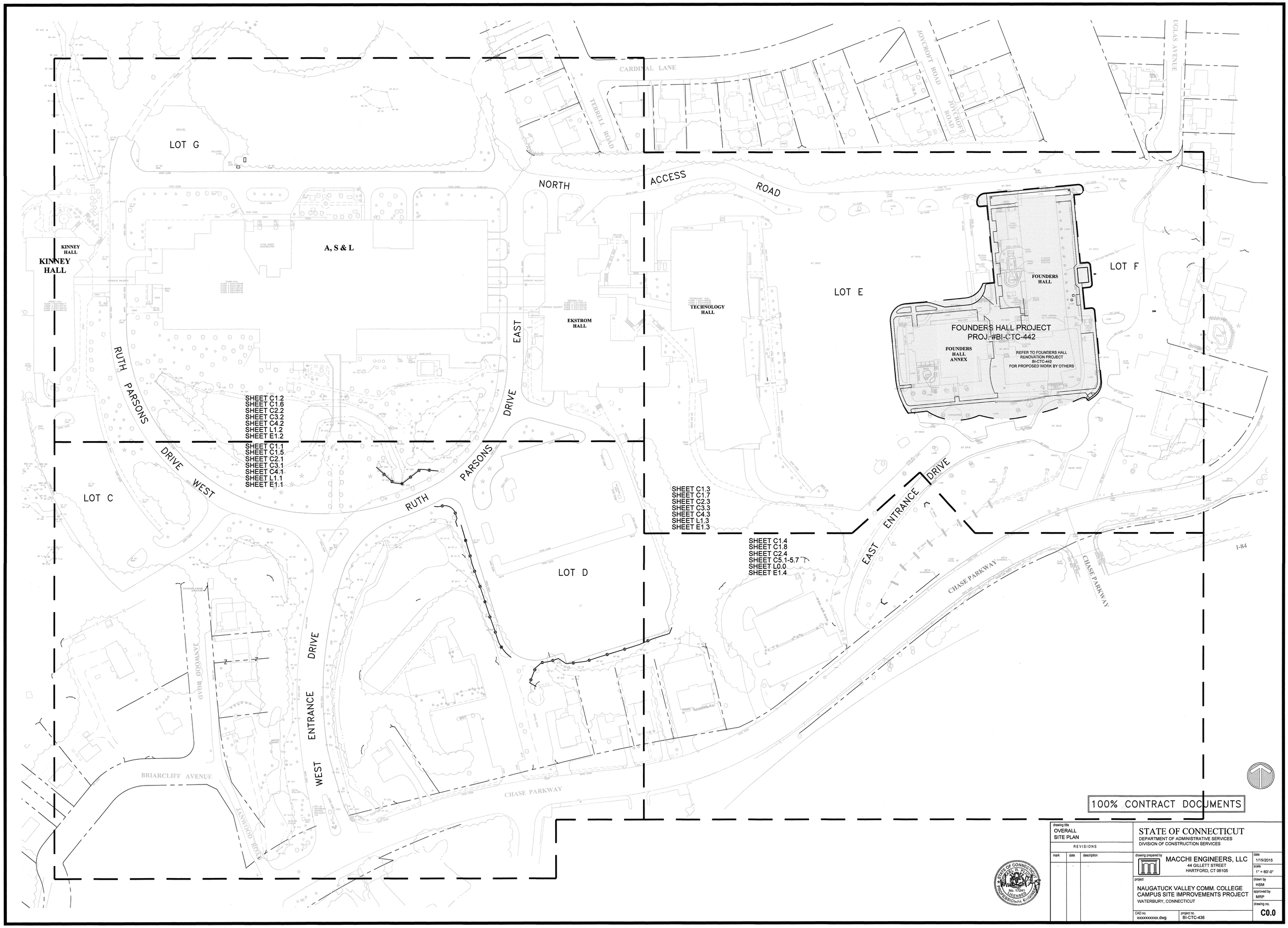


drawing title
OVERALL
SITE PLAN

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

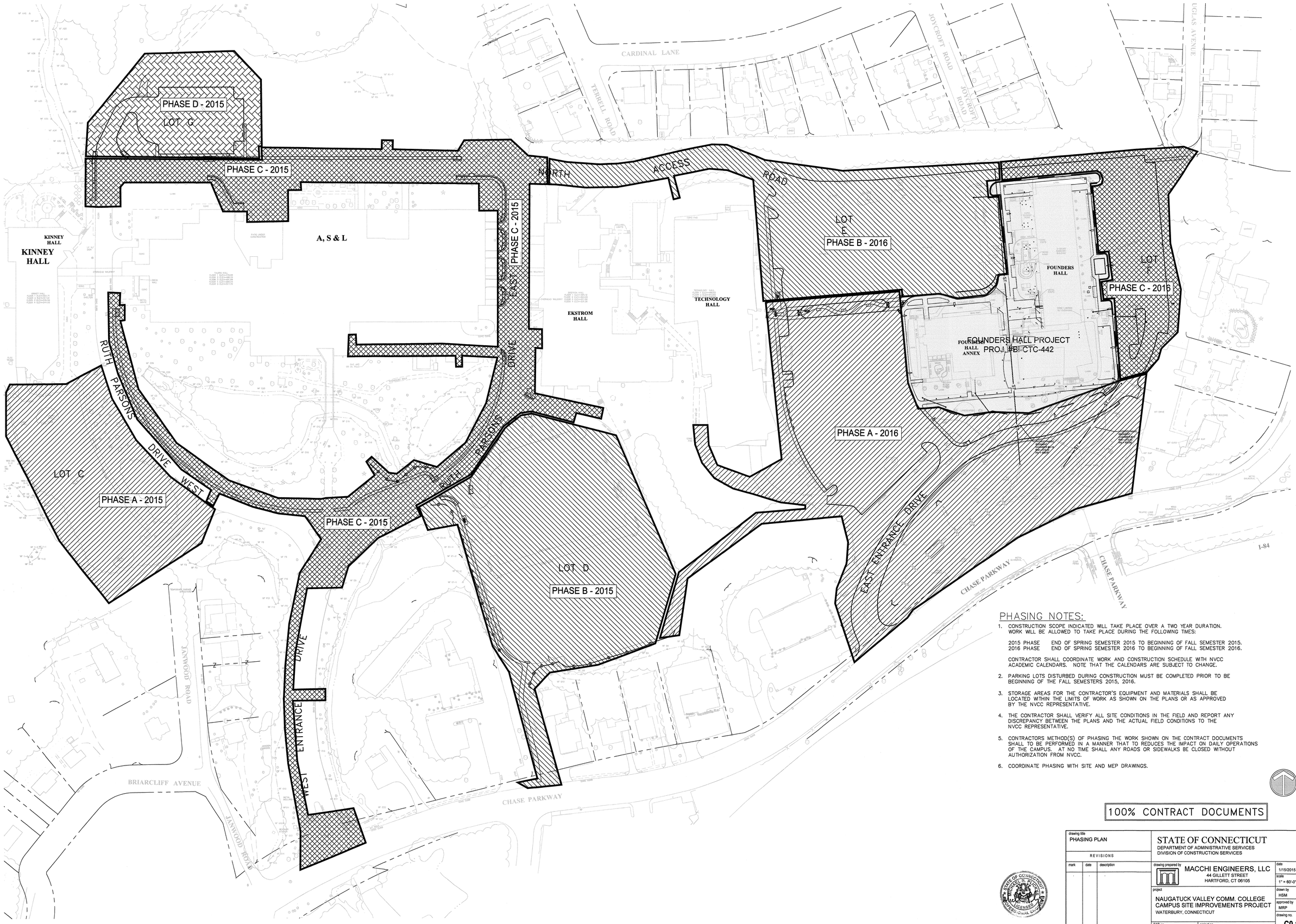
drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

STATE OF CONNECTICUT
No. 17241
LICENSED
PROFESSIONAL ENGINEER

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. xxxxxxxxxx.dwg
project no. BI-CTC-436

date 1/15/2015
scale 1" = 80'-0"
drawn by HSM
approved by MRP
drawing no. C0.0



PHASING NOTES:

1. CONSTRUCTION SCOPE INDICATED WILL TAKE PLACE OVER A TWO YEAR DURATION. WORK WILL BE ALLOWED TO TAKE PLACE DURING THE FOLLOWING TIMES:

   2015 PHASE END OF SPRING SEMESTER 2015 TO BEGINNING OF FALL SEMESTER 2015.
   2016 PHASE END OF SPRING SEMESTER 2016 TO BEGINNING OF FALL SEMESTER 2016.

   CONTRACTOR SHALL COORDINATE WORK AND CONSTRUCTION SCHEDULE WITH NVCC ACADEMIC CALENDARS. NOTE THAT THE CALENDARS ARE SUBJECT TO CHANGE.

2. PARKING LOTS DISTURBED DURING CONSTRUCTION MUST BE COMPLETED PRIOR TO BE BEGINNING OF THE FALL SEMESTERS 2015, 2016.

3. STORAGE AREAS FOR THE CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE LOCATED WITHIN THE LIMITS OF WORK AS SHOWN ON THE PLANS OR AS APPROVED BY THE NVCC REPRESENTATIVE.

4. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCY BETWEEN THE PLANS AND THE ACTUAL FIELD CONDITIONS TO THE NVCC REPRESENTATIVE.

5. CONTRACTORS METHOD(S) OF PHASING THE WORK SHOWN ON THE CONTRACT DOCUMENTS SHALL TO BE PERFORMED IN A MANNER THAT TO REDUCES THE IMPACT ON DAILY OPERATIONS OF THE CAMPUS. AT NO TIME SHALL ANY ROADS OR SIDEWALKS BE CLOSED WITHOUT AUTHORIZATION FROM NVCC.

6. COORDINATE PHASING WITH SITE AND MEP DRAWINGS.

100% CONTRACT DOCUMENTS

drawing title: PHASING PLAN		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES	
REVISIONS			
mark	date	description	
.	.	.	
		drawing prepared by: MACCHI ENGINEERS, LLC 44 GILLETT STREET HARTFORD, CT 06105	date 1/15/2015 scale 1" = 60'-0"
		project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT WATERBURY, CONNECTICUT	drawn by HSM approved by MRP
		CAD no. C0.1.dwg / project no. BI-CTC-436	drawing no. C0.1

MATCH LINE

SHEET C 1.2

SHEET C 1.3

MATCHLINE

LOT C

LOT D

LIMITS OF DISTURBANCE (TYP)

CONTRACT LIMIT LINE (TYP)

CONSTRUCTION LIMIT LINE

INSTALL HAYBALES, OR 'SILT SACK' AT ALL PROPOSED DRAINAGE STRUCTURE INLETS

INSTALL SILT FENCE (TYPICAL)

SILT FENCE PREVIOSULY INSTALLED

JANWOOD ROAD

BRIARCLIFF AVENUE

CHASE PARKWAY

TYPICAL ABBREVIATIONS

BIT	=	BITUMINOUS CONCRETE	MAX	=	MAXIMUM
CB	=	CATCH BASIN	MH	=	MANHOLE
CHDPE	=	CORRUGATED HIGH DENSITY POLYETHYLENE	MIN	=	MINIMUM
			NTS	=	NOT TO SCALE
℄	=	CENTER LINE	OC	=	ON CENTER
CONC	=	CONCRETE	PERF	=	PERFORATED
CPP	=	CORRUGATED PLASTIC PIPE	PEX	=	CROSSLINKED POLYETHYLENE
DBL	=	DOUBLE	PROP	=	PROPOSED
DIA	=	DIAMETER	PSI	=	POUNDS PER SQUARE INCH
DWG	=	DRAWING	PVC	=	POLYVINYL CHLORIDE
EL	=	ELEVATION	RCP	=	REINFORCED CONCRETE PIPE
EX	=	EXISTING	SAN	=	SANITARY
EXP	=	EXPANSION	SED	=	SEDIMENT
FT	=	FEET	TEMP	=	TEMPORARY
INV	=	INVERT	TF	=	TOP OF FRAME
LF	=	LINEAR FOOT	YD	=	YARD DRAIN

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- 5.33% — DIRECTION OF OVERLAND FLOW W/ GRADE
- LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- XXX — EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- 306 — SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)
- S — SILT FENCE

STATE OF CONNECTICUT
REGISTERED PROFESSIONAL ENGINEER
No. 17241
LICENSED
MICHAEL R. PAGE

100% CONTRACT DOCUMENTS

drawing title
SOUTHWEST CAMPUS EXIST. COND. STORM WATER POLLUTION CONTROL PLAN

REVISIONS

mark	date	description
-	-	-

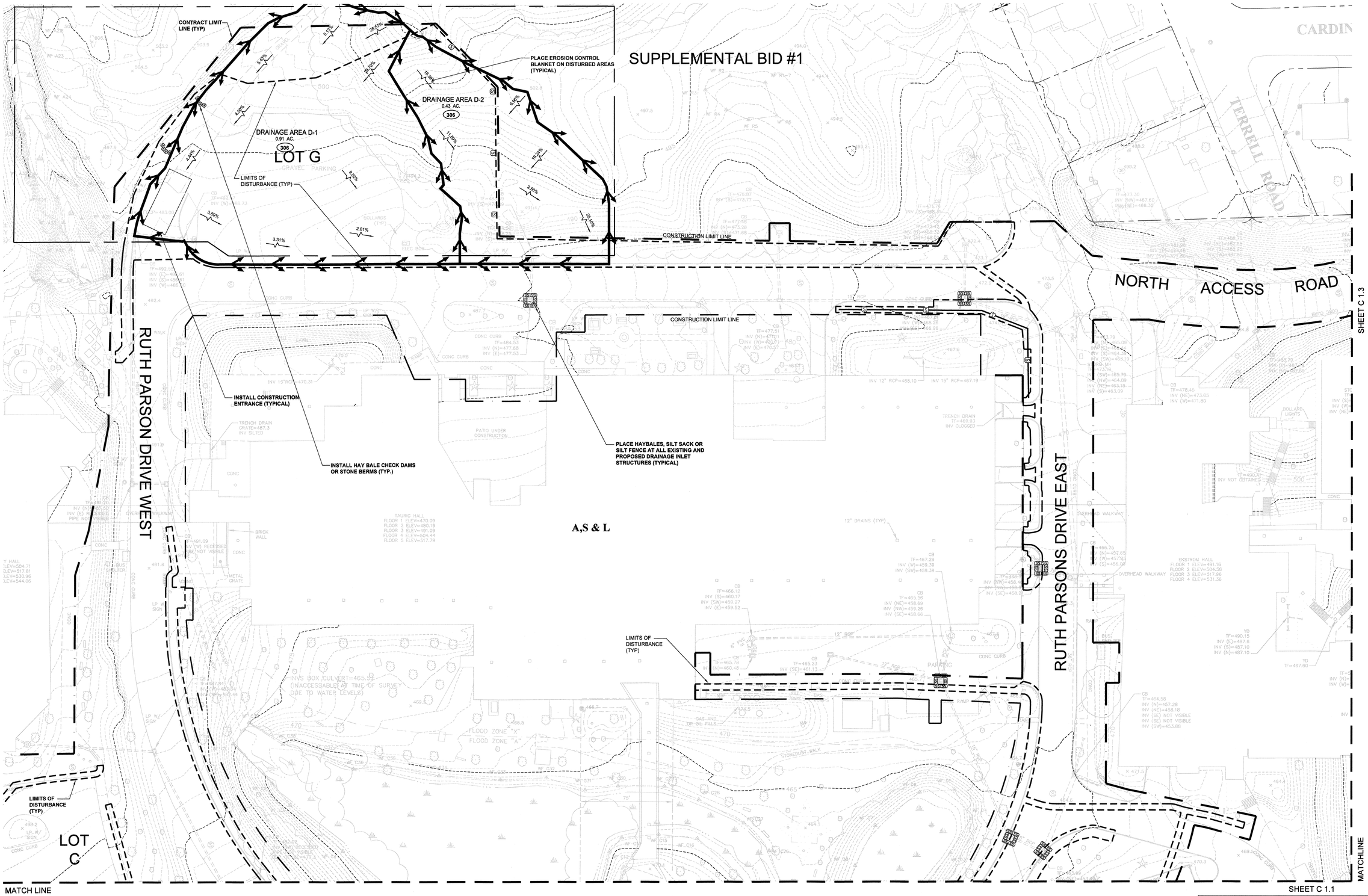
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C1.1.dwg
project no. BI-CTC-436

date	1/15/2015
scale	1" =30'-0"
drawn by	HSM
approved by	MRP
drawing no.	C1.1



100% CONTRACT DOCUMENTS

LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- DIRECTION OF OVERLAND FLOW W/ GRADE
- 5.33% LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- XXX EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- 306 SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
No. 17241
MICHAEL R. MACCHI

drawing title: NORTHWEST CAMPUS EXISTING CONDITIONS SWPCP

REVISIONS

mark	date	description
-	-	-

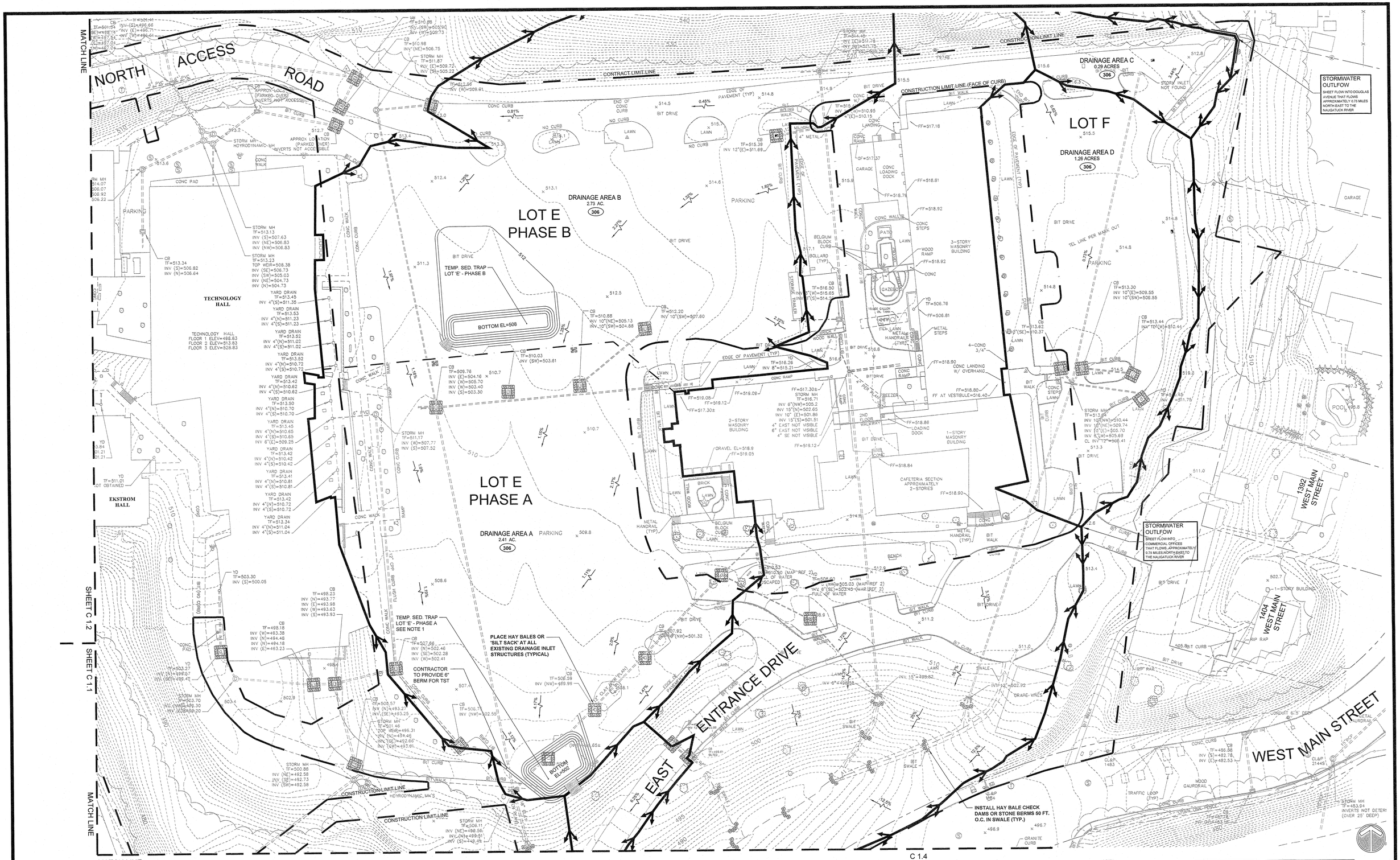
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C1.2.dwg
project no. BI-CTC-436

date 1/15/2015
scale 1" = 30'-0"
drawn by HSM
approved by MRP
drawing no. C1.2



NOTES:

1. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ANY PROPOSED STORMWATER PIPING AND STRUCTURES PRIOR TO CONSTRUCTING THE TST. IT MAY BE NECESSARY FOR THE CONTRACTOR TO INSTALL PORTIONS OF THE PROPOSED STORMWATER SYSTEM TO AVOID FUTURE CONFLICTS WITH THE OPERATION OF THE TST. ANY STORMWATER SYSTEMS INSTALLED SHALL EXTEND SUFFICIENTLY IN EITHER DIRECTION AS NOT NOT INTERFERE WITH THE TST. THE CONTRACTOR SHALL ALSO CAP/BULKHEAD ANY ITEMS THAT WILL NEED TO BE CONNECTED TO IN THE FUTURE.
2. REFER TO DRAWING C–0.1 "PHASING PLAN" FOR FOR THE SUGGESTED CONSTRUCTION SEQUENCING FOR THE TEMPORARY SEDIMENT TRAPS.

TEMPORARY SEDIMENT BASIN CATCHMENT AREA DATA

TEMP. SED. TRAP (TST) LOCATION	AREA OF DISTURBANCE	TOTAL STG. VOL. REQ'D	WET STG. VOL.		DRY STG. VOL.	
			REQUIRED	PROVIDED	REQUIRED	PROVIDED
LOT 'E' PHASE A	2.41 AC (104,879–SF)	322.63 C.Y.	161.32 C.Y.	162.46 C.Y.	161.32 C.Y.	230.02 C.Y.
LOT 'E' PHASE B	2.73 AC (118,739–SF)	365.30 C.Y.	182.63 C.Y.	206.22 C.Y.	182.63 C.Y.	192.21 C.Y.

LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- 5.33% — DIRECTION OF OVERLAND FLOW W/ GRADE
- LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- XXX — EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- 306 — SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)
- STORM DRAIN UNDER CONTRACT BI-CTC-442

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

100% CONTRACT DOCUMENTS

drawing title: EAST CAMPUS EXISTING CONDITIONS SWPCP

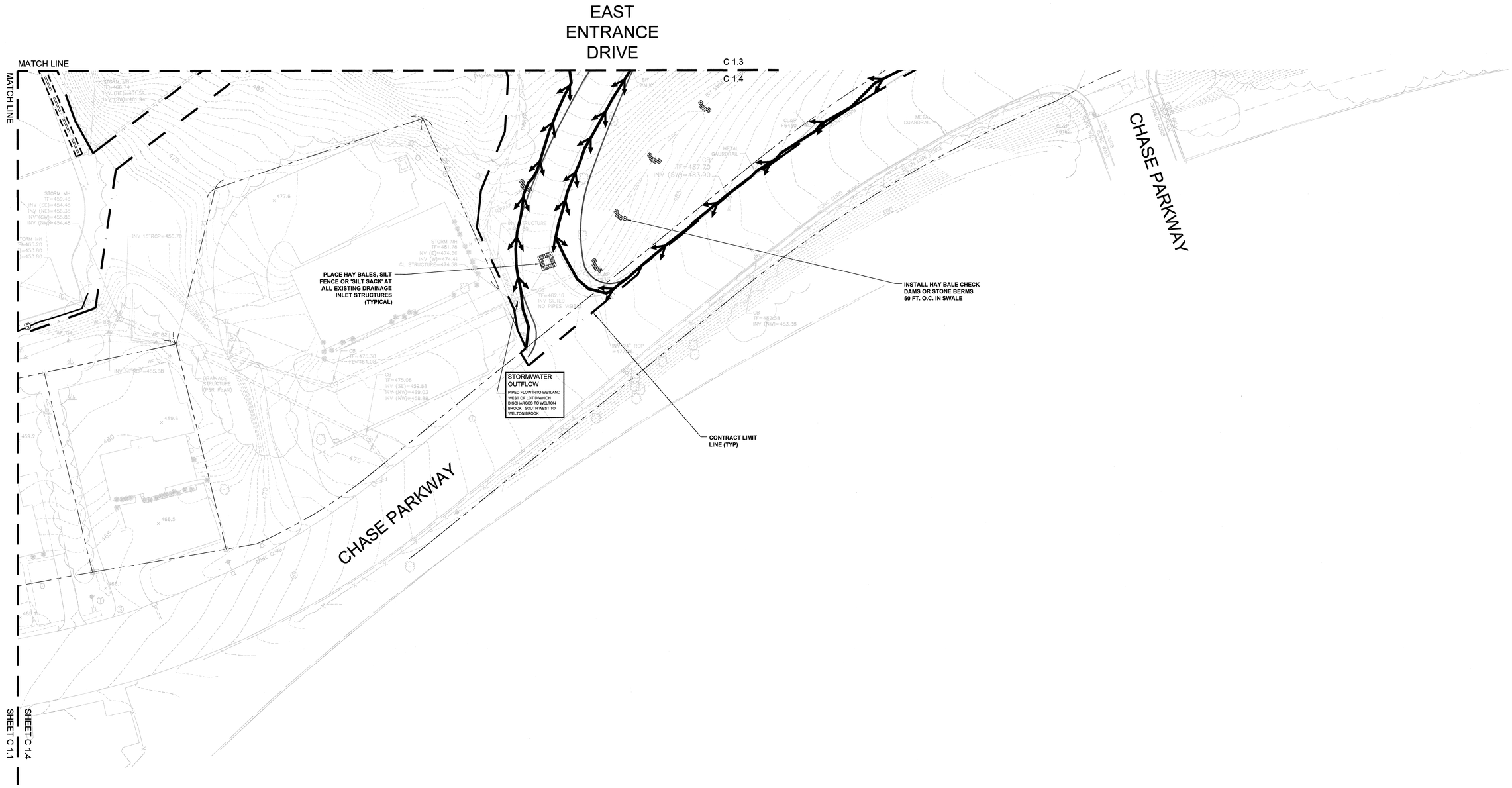
REVISIONS

mark	date	description

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

date	2/17/2015
scale	1" = 30'-0"
drawn by	HSM
approved by	MRP
drawing no.	C1.3
CAD no.	C1.3.dwg
project no.	BI-CTC-436



LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- 5.33% DIRECTION OF OVERLAND FLOW W/ GRADE
- LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- ------XXX------ EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- (306) SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

STATE OF CONNECTICUT
JAMES R. KOZ
No. 17241
LICENSED
PROFESSIONAL ENGINEER

100% CONTRACT DOCUMENTS

drawing title
EAST ENTRANCE DRIVE
EXISTING CONDITIONS
SWPCP

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C1.4.dwg
project no. BI-CTC-436

date 1/15/2015
scale 1" = 30'-0"
drawn by HSM
approved by MRP
drawing no. C1.4

MATCH LINE

SHEET C 1.6

SHEET C 1.7

SHEET C 1.8

MATCHLINE

LOT C

LOT D

6' x 8' TREE BOX (NORTH)
SEE DRAWINGS C4.1 AND C6.3
FOR ADDITIONAL INFORMATION

6' x 4' TREE BOX (SOUTH)
SEE DRAWINGS C4.1 AND C6.3
FOR ADDITIONAL INFORMATION

CONTRACT LIMIT LINE (TYP)

CONTRACT LIMIT LINE (TYP)

CONTRACT LIMIT LINE (TYP)

CONTRACT LIMIT LINE (TYP)

CONSTRUCTION LIMIT LINE

CONSTRUCTION LIMIT LINE

CONSTRUCTION LIMIT LINE

CONSTRUCTION LIMIT LINE

INSTALL HAYBALES, OR 'SILT SACK' AT ALL PROPOSED DRAINAGE STRUCTURE INLETS

INSTALL SILT FENCE (TYPICAL)

SILT FENCE PREVIOSULY INSTALLED

TEMPORARY GARAGE STRUCTURE

FLOOD ZONE "A"

FLOOD ZONE "AE"

JANWOOD ROAD

JANWOOD ROAD

BRIARCLIFF AVENUE

CHASE PARKWAY

TREE BOX AREA DATA
WATERSHED AREA (NORTH) = 1.15 ACRES
IMPERVIOUS AREA = 0.28 ACRES (24%)
PERVIOUS AREA = 0.87 ACRES (76%)
WATERSHED AREA (SOUTH) = 0.36 ACRES
IMPERVIOUS AREA = 0.27 ACRES (75%)
PERVIOUS AREA = 0.09 ACRES (25%)

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- 5.33% DIRECTION OF OVERLAND FLOW W/ GRADE
- LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- XXX EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- 306 SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)
- S SILT FENCE

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

100% CONTRACT DOCUMENTS

drawing title: SOUTHWEST CAMPUS PROPOSED CONDITIONS SWPCP

REVISIONS

mark	date	description

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C1.5.dwg

project no. BI-CTC-436

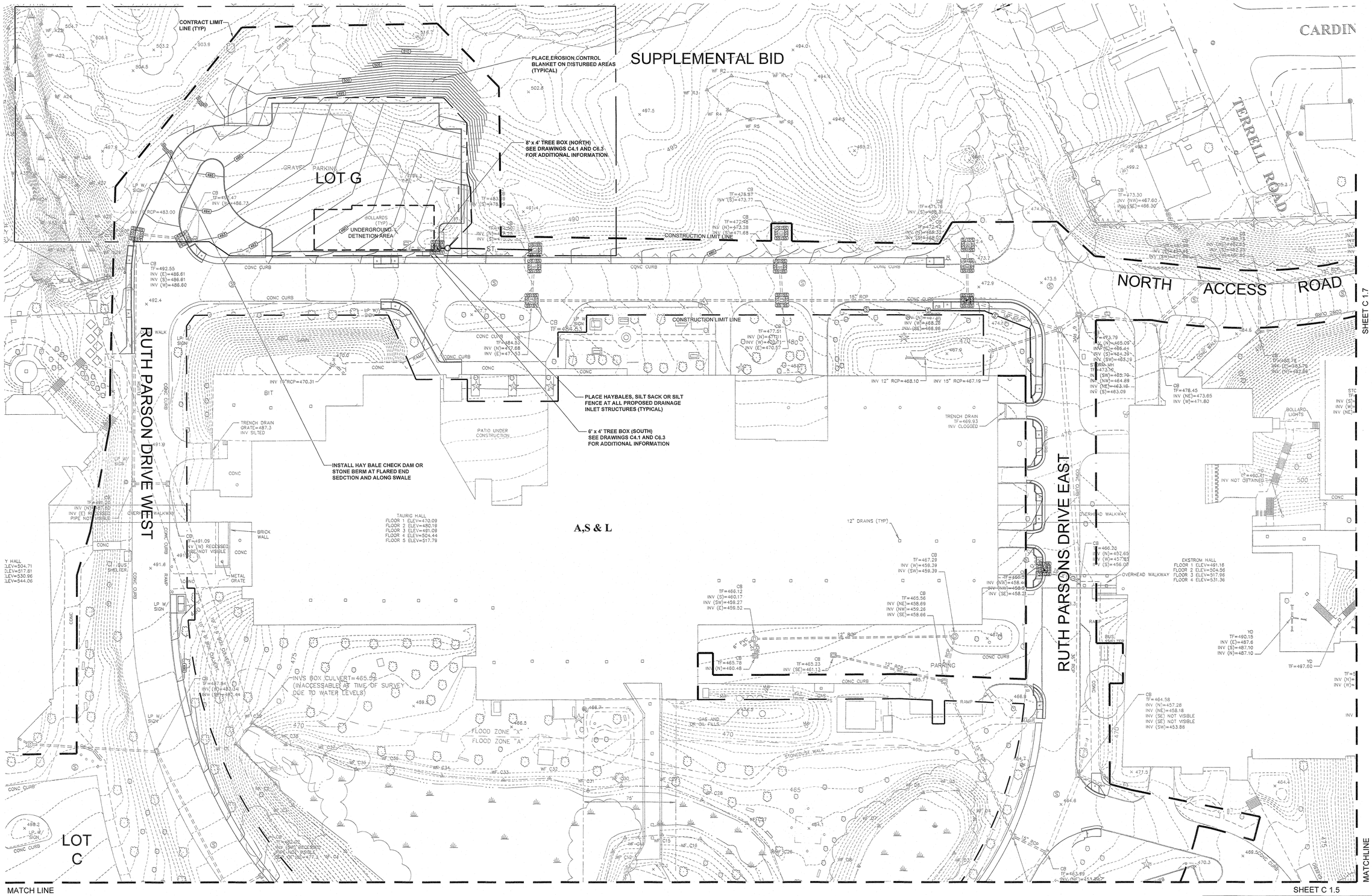
date 2/17/2015

scale 1" =30'-0"

drawn by HSM

approved by MRP

drawing no. C1.5



100% CONTRACT DOCUMENTS

TREE BOX AREA DATA
WATERSHED AREA (NORTH) = 0.44 ACRES
IMPERVIOUS AREA = 0.30 ACRES (68%)
PERVIOUS AREA = 0.14 ACRES (32%)
WATERSHED AREA (SOUTH) = 0.21 ACRES
IMPERVIOUS AREA = 0.19 ACRES (90%)
PERVIOUS AREA = 0.02 ACRES (10%)

LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- 5.33% DIRECTION OF OVERLAND FLOW W/ GRADE
- LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- XXX EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- 306 SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

STATE OF CONNECTICUT
MICHAEL P. MACCHI
No. 17241
LICENSED PROFESSIONAL ENGINEER

drawing title: NORTHWEST CAMPUS PROPOSED CONDITIONS SWPCP

REVISIONS

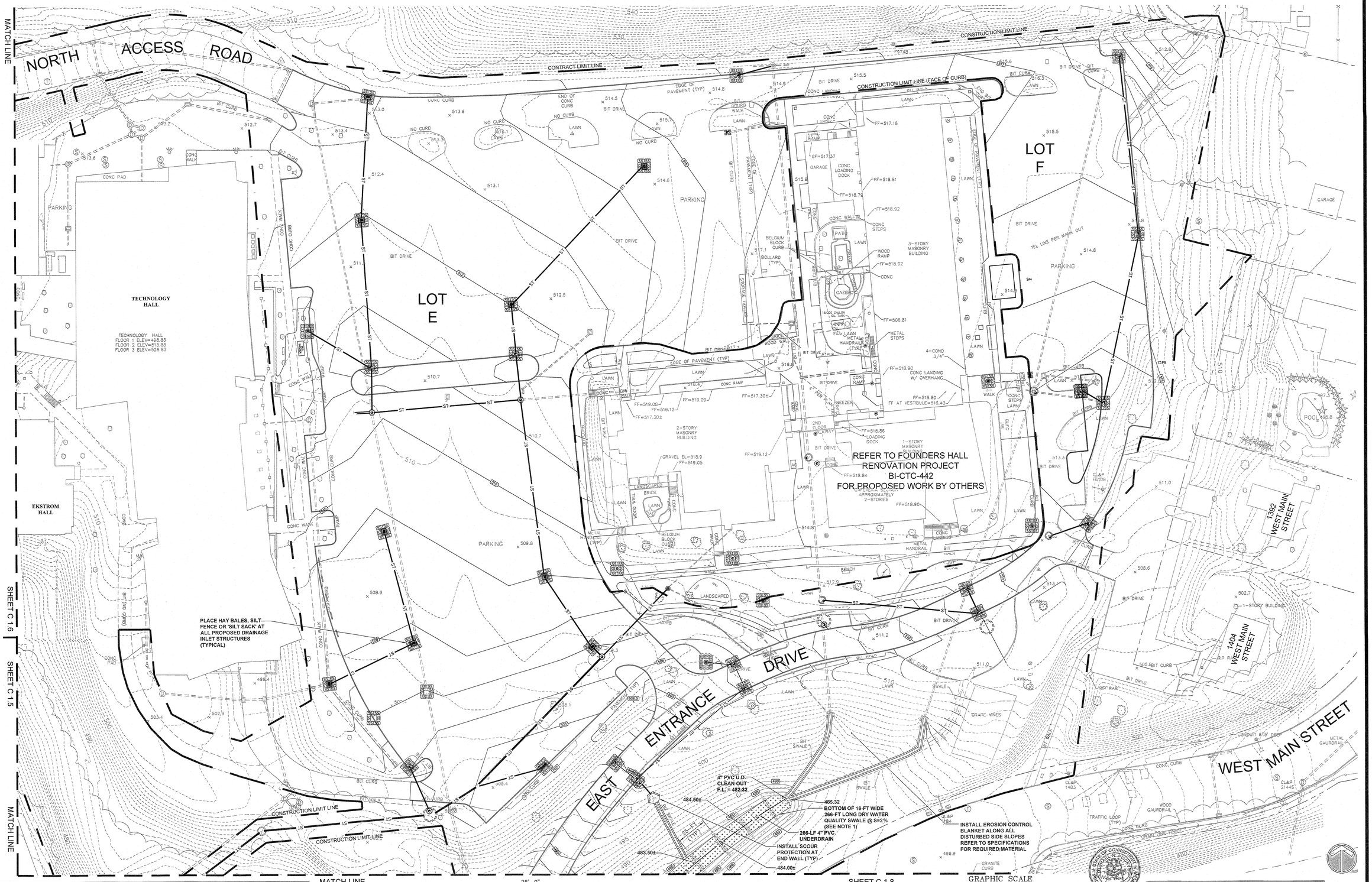
mark	date	description

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

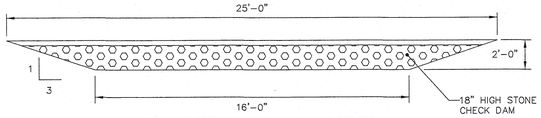
CAD no. C1.6.dwg
project no. BI-CTC-436

date 2/17/2015
scale 1" = 30'-0"
drawn by HSM
approved by MRP
drawing no. C1.6



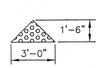
100% CONTRACT DOCUMENTS

WATER QUALITY VOLUME (WQV) CALCULATIONS	
WQV = (1" x R x A) /12	VOIDS IN SAND SECTION
	SAND DEPTH = 50% OF 2'-6" = 1.25'
R = 0.009 x (I) + 0.05	1.25' x 16' WIDE x 266' LONG = 5,320-CF
I = % IMPERVIOUS AREA	ASSUME 40% VOIDS – 5,320 *.40 = 2,128-CF
REQUIRED WQV	VOIDS IN GRAVEL SECTION
R = 0.009 x (51) + 0.05 = 0.509	GRAVEL DEPTH = 6" = 0.5'
WQV = (1" x 0.509 x 5.55) / 12 = 0.23 AC-FT	0.5' x 16' x 266' = 2,128-CF
	ASSUME 40% VOIDS – 2,128 *.40 = 851-CF
PROVIDED WQV	
AVERAGE SEDIMENT DEPTH RETAINED BETWEEN STONE CHECK DAMS = (18" + 12")/2 = 15"	TOTAL = 5,750 CF + 2,128 CF + 851 CF = 8,729-CU. FT.
AVERAGE WIDTH OF SWALE = (23.5' + 16')/2 = 19.75'	TOTAL = 0.20 AC-FT
AVG. DIST. BETWEEN CHECK DAMS = (24.5' + 22')/2 = 23.25'	
WQV = 1.25' x 19.75' x 23.25' = 574 CU. FT.	
574 CU. FT. x 10 (STG. AREAS) = 5,750 CU. FT.	



TYPICAL TRAPEZOIDAL DRY SWALE SECTION
NTS

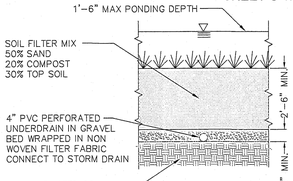
WATER QUALITY VOLUME (WQV) AREA DATA
WATERSHED AREA = 5.55 ACRES
IMPERVIOUS AREA = 2.83 ACRES (51%)
PERVIOUS AREA = 2.72 ACRES (49%)



TYPICAL DRY SWALE CHECK DAM SECTION
NTS

NOTES:

1. IMMEDIATELY AFTER THE SOIL FILTER MIX AND UNDERDRAIN FOR THE WATER QUALITY SWALE HAS BEEN INSTALLED, THE CONTRACTOR SHALL INSTALL SILT FENCE OR OTHER APPROVED EROSION CONTROL MEASURES TO PROTECT ANY CONTAMINATION OF THE SOIL FILTER MIXTURE SECTION FROM SEDIMENT. THE MEASURES SHOULD NOT BE REMOVED UNTIL THE SURROUNDING AND UPSTREAM AREAS ARE FULLY STABILIZED.



TYPICAL DRY WATER QUALITY SWALE SECTION
NTS

LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- DIRECTION OF OVERLAND FLOW W/ GRADE
- 5.33% LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- XXX EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- 306 SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)

drawing title
EAST CAMPUS
PROPOSED CONDITIONS
SWPCP

REVISIONS

mark	date	description

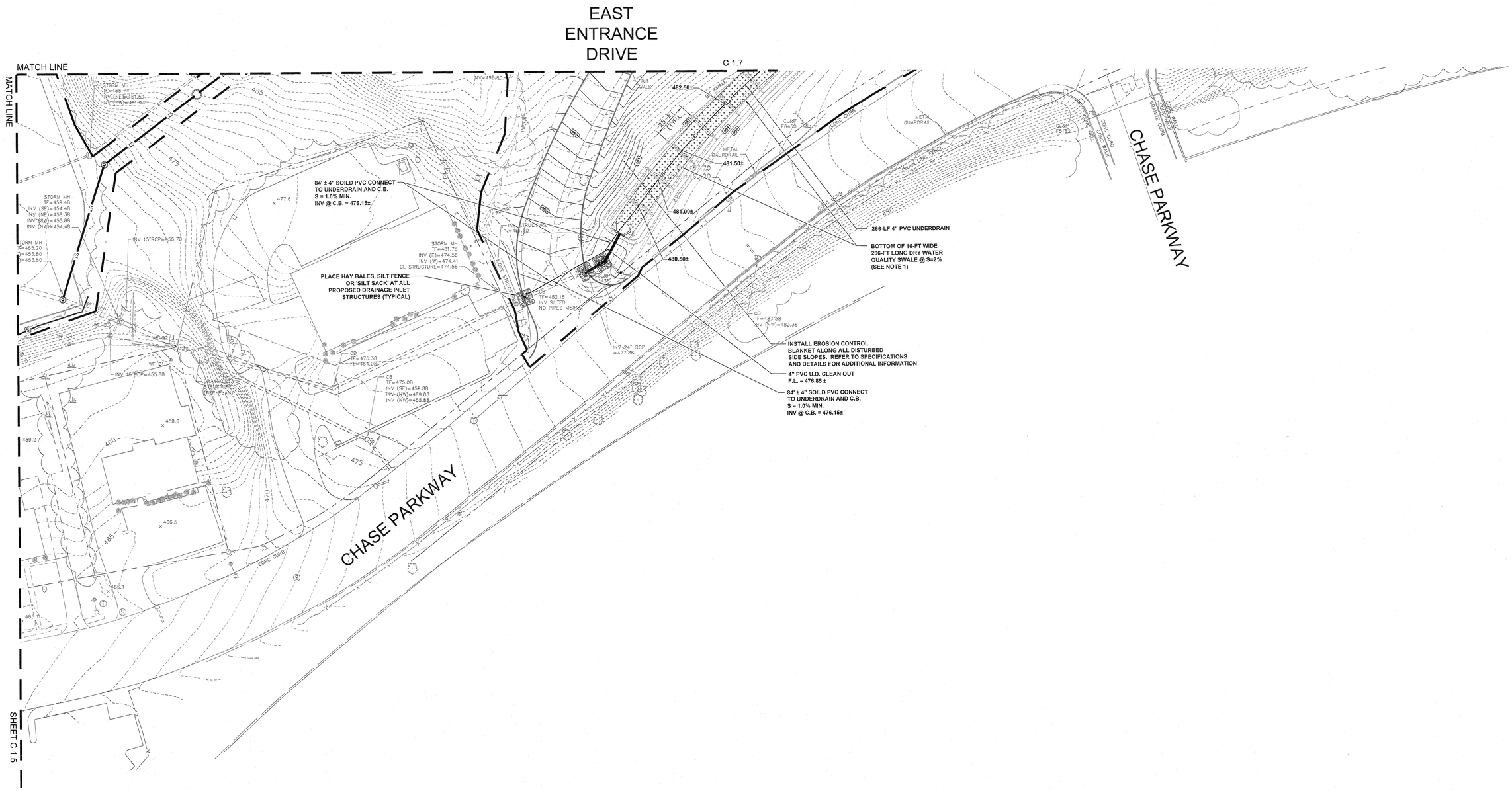
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

date 2/17/2015
scale 1" = 30'-0"
drawn by HSM
approved by MRP
drawing no. C1.7

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C1.7.dwg
project no. BI-CTC-436



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WQV = (1" x R x A) /12
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I = % IMPERVIOUS AREA
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R = 0.009 x (51) + 0.05 = 0.509
WQV = (1" x 0.509 x 5.55) / 12 = 0.23 AC-FT
PROVIDED WQV
AVERAGE SEDIMENT DEPTH RETAINED BETWEEN STONE CHECK DAMS = (18" + 12")/2 = 15"
AVERAGE WIDTH OF SWALE = (23.5' + 16')/2 = 19.75-FT
AVG. DIST. BETWEEN CHECK DAMS = (24.5' + 22')/2 = 23.25'
WQV = 1.25' x 19.75' x 23.25' = 574 CU. FT.
574 CU. FT. x 10 (STG. AREAS) = 5,740 CU. FT.
VOIDS IN SAND SECTION
SAND DEPTH = 50% OF 2'-6" = 1.25-FT
1.25' x 16' WIDE x 266' LONG = 5,320 CU. FT.
ASSUME 40% VOIDS - 5.320 *.40 = 2,128 CU. FT.
VOIDS IN GRAVEL SECTION
GRAVEL DEPTH = 6" = 0.5'
0.5' x 16' x 266' = 2,128 CU. FT.
ASSUME 40% VOIDS - 2,128 *.40 = 851 CU. FT.
TOTAL = 5,740 CF + 2,128 CF + 851 CF = 8,719 CU. FT.
TOTAL = 0.20 AC-FT

WATER QUALITY VOLUME (WQV) AREA DATA
WATERSHED AREA = 5.55 ACRES
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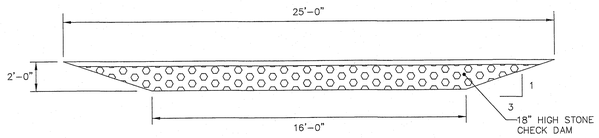
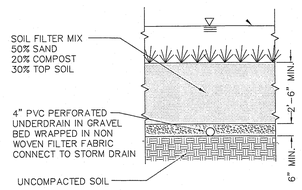
TYPICAL DRY SWALE CHECK SECTION

NTS



TYPICAL TRAPEZOIDAL DRY SWALE SECTION

NTS



TYPICAL DRY WATER QUALITY SWALE SECTION

NTS

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

LEGEND

- PROPERTY / ROW LINE
- CONSTRUCTION LIMIT LINE
- 5.33% DIRECTION OF OVERLAND FLOW W/ GRADE
- LIMITS OF DRAINAGE SUB-BASIN
- LIMITS OF DISTURBANCE
- XXX EXISTING CONTOUR ELEVATIONS
- PROPOSED E & S MEASURE CONTOURS
- 306 SOIL TYPE: UDORTHENTS-URBAN LAND COMPLEX (ENTIRE SITE IS DESCRIBED AS SUCH)

STATE OF CONNECTICUT
REGISTERED PROFESSIONAL ENGINEER
No. 17241
LICENSED

100% CONTRACT DOCUMENTS

drawing title
EAST ENTRANCE DRIVE
PROPOSED CONDITIONS
SWPCP

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
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WATERBURY, CONNECTICUT

drawn by HSM
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drawing no. C1.8

CAD no. C1.8.dwg
project no. BI-CTC-436

SEDIMENT AND EROSION CONTROL PLAN

1) PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING PARKING LOTS E AND F, AND THE EAST ENTRANCE DRIVE, CONSTRUCTION OF A NEW 54 SPACE PARKING LOT, REPLACEMENT OF THE SITE LIGHTING THROUGHOUT THE CAMPUS. SITE WORK WILL INCLUDE THE CONSTRUCTION OF SIDEWALKS, GRADING AND THE INSTALLATION OF UTILITIES. THE WORK WILL BE COORDINATED WITH THE FOUNDERS HALL RENOVATION PROJECT (BI-CTC-442) WHICH WILL INCLUDE CONSTRUCTION OF SITE WALKS, CURBING, UTILITIES AND GRADING ADJACENT TO THE BUILDING.

STORM RUNOFF FROM THE PROJECT AREA AND SURROUNDING SECTION OF THE CAMPUS WILL BE COLLECTED AND ROUTED TO THE EXISTING STORM SEWER SYSTEM LOCATED AT SOUTHERN PORTION OF THE SITE. THIS SYSTEM FLOWS SOUTHWESTERLY THEN NORTHWESTERLY ACROSS ADJACENT PROPERTIES AND COMBINES WITH THE STORM DRAINAGE FROM THE REMAINDER OF THE CAMPUS, FORMING A STREAM THAT THEN FLOWS SOUTHERLY ACROSS CHASE PARKWAY.

WORK INCLUDES THE CONSTRUCTION OF PAVEMENTS, SIDEWALKS, RAMPS AND UTILITIES (ELECTRIC, LIGHTING, TELECOMMUNICATIONS AND STORM DRAINAGE). ALSO, THE WORK INCLUDES CLEARING AND GRUBBING DESIGNATED AREAS, PROTECTING EXISTING PLANTINGS TO REMAIN, TOPSOIL STRIPPED AND STOCKPILED, SITE LANDSCAPING, SITE LIGHTING AND ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED.

CONSTRUCTION IS EXPECTED TO BEGIN IN THE SPRING/SUMMER OF 2015, AND TO BE COMPLETED BY FALL OF 2016.

A. MAINTENANCE/REPAIR OF EROSION & SEDIMENTATION CONTROL MEASURES:

DURING ALL STAGES OF CONSTRUCTION, AS WELL AS AFTER CONSTRUCTION IS COMPLETE, MAINTENANCE AND REPAIR OF EROSION & SEDIMENTATION CONTROL DEVICES IS ESSENTIAL. THE FOLLOWING ARE MINIMUM REQUIREMENTS:

DURING CONSTRUCTION

1) INSPECTION OF EROSION PRONE AREAS SHOULD OCCUR WITHIN 12 HOURS AFTER RAINFALL EVENTS IN EXCESS OF ONE INCH PER HOUR INTENSITY OR A RAINFALL EVENT WITH A TOTAL PRECIPITATION OF 1/2 INCH OR MORE. NOTE THAT THIS WILL REQUIRE THE INSTALLATION OF A RAINFALL GAUGE ON THE SITE, WHICH SHOULD BE MONITORED AND A RECORD KEPT OF EACH RAINFALL EVENT. CONCERNS SHOULD BE LOGGED AND REPAIRS SHOULD BE MADE IMMEDIATELY. FOR RAINFALL EVENTS OVER A PERIOD OF MORE THAN ONE DAY, INSPECTIONS AS DESCRIBED ABOVE SHOULD BE PERFORMED EACH DAY.

2) WEEKLY INSPECTIONS OF ALL EROSION & SEDIMENTATION CONTROL DEVICES, EROSION PRONE AREAS OR OTHER AREAS OF CONCERN SHOULD BE PERFORMED WITH THE ENGINEER, OR OTHER APPOINTED REPRESENTATIVE. INSPECTIONS SHOULD INCLUDE ALL SILT FENCE, HAY BALES, STONE CHECK DAMS, CATCH BASIN SUMPS, TEMPORARY SEDIMENTATION BASINS, DETENTION POND(S), HAY SLOPE MATTING, ETC. AND REPAIRS SHOULD BE MADE AS NECESSARY.

3) LOGS OF ALL INSPECTIONS AND REPAIRS SHOULD BE KEPT ON SITE, INCLUDING DATES & CONCERNS NOTED DURING INSPECTIONS, TIMING OF REPAIRS & ACTIONS TO BE TAKEN, DATES OF ACTUAL ACTIONS & RESPONSES, AND INITIALS OF THOSE INVOLVED.

4) ALL SILT FENCING, HAY MATTING AND OTHER EROSION CONTROL DEVISES SHALL BE LEFT IN PLACE AND MAINTAINED UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.

POST CONSTRUCTION

1) EROSION PRONE AREAS- INSPECT MONTHLY FOR THE FIRST SIX (6) MONTHS, AND BI-MONTHLY FOR THE SECOND SIX (6) MONTHS AFTER CONSTRUCTION IS COMPLETE. ALL SILT FENCING AND EROSION CONTROL DEVISES SHALL BE LEFT IN PLACE AND MAINTAINED UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.

2) PARKING AREAS AND ACCESS DRIVES SHOULD BE SWEPT CLEAN ANNUALLY EACH SPRING IMMEDIATELY AFTER WINTER SANDING IS NO LONGER NEEDED.

3) SEDIMENT FROM CATCH BASIN SUMPS AND MANHOLES SHOULD BE PERFORMED YEARLY AFTER WINTER SANDING IS COMPLETE.

4) PERMANENT DETENTION PONDS SHOULD BE INSPECTED MONTHLY AND ANY SEDIMENTATION AT THE LOW LEVEL OUTLET PIPES SHOULD BE REMOVED IMMEDIATELY. SEDIMENT IN THE PERMANENT SEDIMENTATION BASINS SHOULD BE REMOVED IF ANY DEPOSIT AREA REACHES 18" TO 24" IN DEPTH.

5) ANY ERODED AREAS, OR MALFUNCTIONING COMPONENTS OF THE DRAINAGE SYSTEM, SHOULD BE REPAIRED IMMEDIATELY.

B. STANDARDS & GUIDELINES

1) FOR WORK WITHIN PUBLIC STREETS: CITY OF WATERBURY APPLICABLE CONSTRUCTION AND DEVELOPMENT STANDARDS INCLUDING THE PLANNING, ZONING, SUBDIVISION AND WETLANDS REGULATIONS.

2) REQUIREMENTS, SPECIFICATIONS, DETAILS AND INSTRUCTIONS AS SET FORTH IN THESE DOCUMENTS.

3) CONNECTICUT GUIDELINES FOR SOIL EROSION & SEDIMENT CONTROL (2002), AS AMENDED, AND THE CONNECTICUT D.O.T. "ON SITE MITIGATION FOR CONSTRUCTION ACTIVITIES".

4) CONNECTICUT D.O.T. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION, FORM 816 SHALL BE USED FOR MATERIAL REQUIREMENTS, TECHNICAL SPECIFICATIONS AND CONSTRUCTION METHODS.

C. GENERAL NOTES

1) GRADING & CLEARING: THE SEQUENCE OF GRADING AND CONSTRUCTION ACTIVITIES MAY BE MODIFIED TO SUIT ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION WHEN APPROVED BY THE ENGINEER. OTHERWISE THE SEQUENCE OF EROSION & SEDIMENTATION CONTROL (SECTION C, BELOW), WILL BE IMPLEMENTED FOR EACH PROPOSED PHASE OF CONSTRUCTION. THE FOLLOWING NOTES WILL APPLY SEPARATELY TO EACH OF THE PROPOSED PHASES AND CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.

2) INSTALLATION OF TEMPORARY BASINS SHALL BE DONE ONLY WHEN A SAFE AND STABILIZED OUTLET EXISTS OR CAN BE INSTALLED PRIOR TO INSTALLATION. FOR EXAMPLE STABILIZED OUTFALL CHANNELS OR THE INSTALLATION OF A FUNCTIONING DRAINAGE SYSTEM MUST EXIST PRIOR TO CONSTRUCTION OF A SEDIMENT/DISCHARGE BASIN. SEDIMENT/DISCHARGE BASINS SHALL BE GRADED SO AS TO RETAIN WATER TO A DEPTH OF NO MORE THAN 2 FEET.

3) LIMIT CLEARING OF VEGETATION AND TOPSOIL TO AREAS DESIGNATED FOR IMMEDIATE CONSTRUCTION. AREAS TO BE LEFT EXPOSED TO EROSION FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED AFTER ROUGH GRADING AS MAY BE SHOWN ON THE CONSTRUCTION PLANS.

4) KEEP SOIL EXPOSED TO EROSION AT A MINIMUM IN AREA AND TIME.

5) MAINTAIN THE MAXIMUM ATTAINABLE BUFFER BETWEEN CONSTRUCTION ACTIVITIES AND WETLANDS AND WATERCOURSES. MINIMUM BUFFER ZONES SHALL BE AS UNLESS PREVIOUSLY APPROVED OR PERMITTED.

6) CLEAN DEPOSITED MATERIAL AS REQUIRED. THIS TYPICALLY SHALL MEAN WHEN SILT REACHES 50% OF THE CAPACITY OF A SEDIMENT BASIN, 1 FOOT DEEP IN THE SUMP OF A CATCH BASIN, AND HALF THE HEIGHT OF AN EROSION AND SEDIMENT CONTROL DIKE OR BERM. CONTROL DIKE OR BERM.

7) EXPOSED AREA IN FINAL GRADED SHAPE SHOULD BE DRESSED WITH TOPSOIL AND SEEDED, SEASON PERMITTING OR MULCHED FOR EROSION PROTECTION.

8) MAINTAIN ALL EROSION AND SEDIMENT CONTROLS UNTIL SUCCESSFUL RE-ESTABLISHMENT OF VEGETATIVE COVER AND THE CESSATION OF EROSION.

9) HAY BALE BARRIERS MAY REMAIN IN PLACE AFTER SUCCESSFUL RE-ESTABLISHMENT OF VEGETATIVE COVER AND THE CESSATION OF EROSION WHEN THE REMOVAL OF SUCH BARRIERS MAY RESULT IN ADDITIONAL SOIL EROSION UP SLOPE OF WETLANDS, WATERCOURSES OR STORM DRAIN INLETS. ADDITIONALLY, THE BALES MAY ONLY BE RETAINED IN PLACE TO DEGRADE NATURALLY WHEN THE BARRIER WILL NOT RESTRICT THE FLOW OF CONCENTRATED RUNOFF OR INTERFERE WITH THE FUNCTIONING OF STORM DRAINAGE AND OTHER CONSTRUCTED OR EXISTING COMPONENTS OF THE PROPOSED DEVELOPMENT. THE ENGINEER OR CITY MUST APPROVE OF THE LOCATIONS WHERE HAY BALES MAY BE LEFT IN PLACE.

10) AFTER SUCCESSFUL RE-ESTABLISHMENT OF VEGETATIVE COVER AND CESSATION OF EROSION, AND IF NOT LEFT IN PLACE AS NOTED ABOVE, HAY BALES MAY BE BROKEN UP BY HAND AND SPREAD IN THE GENERAL AREA INITIALLY INSTALLED.

11) STOCK PILE AREAS: THE FOLLOWING SEQUENCE FOR USE OF STOCKPILE AREAS SHALL BE USED.

a) AREA TO BE USED SHALL BE IDENTIFIED WITH FLAGGING IN THE FIELD & SHALL BE LOCATED OUTSIDE OF ALL WETLANDS AND REGULATED BUFFER ZONES.

b) AREA SHALL THEN BE CLEARED AND GRUBBED AND GENERALLY BE MADE READY FOR USE.

c) THE STOCKPILE AREA SHALL BE IMMEDIATELY SURROUNDED WITH SILT FENCE.

d) DURING USE, THE CONTRACTOR SHALL INSURE THAT THE GENERAL STOCK PILE USE AREA IS MAINTAINED SUCH THAT THERE IS NO SEDIMENTATION OF SURROUNDING LAND AREA. THE STOCK PILES SHALL BE COVERED AND/OR TEMPORARILY SEEDED TO PREVENT RUNOFF AND SEDIMENTATION IF NECESSARY.

e) IMMEDIATELY UPON COMPLETION OF USE AS A STOCKPILE AREA, THE LAND SHALL BE RESTORED.

12) ALL ROAD WAYS IN THE VICINITY OF THE PROPOSED PROJECT SHALL BE KEPT FREE OF DUST AND SEDIMENT, AND SHALL BE CLEANED PERIODICALLY AS REQUIRED BY CONSTRUCTION ACTIVITIES AND PRIOR TO ANY RAINFALL AND RUNOFF EVENT AS DIRECTED BY THE ENGINEER. METHODS USED TO MEET THIS REQUIREMENT SHALL CONFORM TO THE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS AND THE SECTIONS ON STANDARDS & GUIDELINES.

13) REFER TO SHEET C1.1 THRU C1.8 FOR SEDIMENT AND EROSION CONTROL PLAN AND ADDITIONAL NOTES.

14) REFER TO SHEET C1.10 FOR ADDITIONAL EROSION AND SEDIMENT CONTROL DETAILS.

15) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND REPAIR EROSION AND SEDIMENT CONTROL MEASURES DURING ALL STORM EVENTS AS REQUIRED TO PREVENT DAMAGE OR SEDIMENTATION TO ADJACENT LAND, STREAMS AND PROPERTY.

16) CONTRACTOR SHALL MAKE ANY REPAIRS OR RESTORATION TO PROPERTY OR ENVIRONMENT CAUSED BY SEDIMENTATION.

17) ALL WORK AFFECTING WETLANDS SHALL BE SCHEDULED DURING LOW FLOW MONTHS.

18) ALL WORK AND ALL ACTIVITIES SHALL FIRST BE IN COMPLIANCE WITH APPLICABLE PERMITS FOR THIS PROJECT. SECOND ALL WORK AND ACTIVITIES SHALL CONFORM TO THE REQUIREMENTS OF THE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS WHICH ARE PART OF THESE PLANS. LASTLY, WORK AND ACTIVITIES SHALL BE CONSISTENT WITH THESE EROSION AND SEDIMENT CONTROL PLANS AS A MINIMUM.

D. EROSION AND SEDIMENT CONTROL NOTES

1) LIMITED CLEARING AND GRUBBING ACTIVITIES SHALL COMMENCE FIRST TO ENABLE THE INSTALLATION/CONSTRUCTION OF PERIMETER HAY BALE DIKES, CONSTRUCTION ENTRANCES SEDIMENT ANTI-TRACKING PAD, STAGING AREAS AND THE INSTALLATION OF CRUSHED STONE BERMS AT PROPOSED STORM DRAIN OUTFALL AREAS. SILT FENCE SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION WHICH SHOULD BE CLEARLY MARKED BY FLORESCENT SURVEY FLAGGING OR FENCING BEFORE CLEARING AND GRUBBING TAKES PLACE.

2) DURING ALL PHASES, PERMANENT AND/OR TEMPORARY SEDIMENT BASINS SHALL BE CONSTRUCTED AT PROPOSED STORM DRAINAGE INLETS AND/OR OUTFALLS. AT OUTFALLS A DOUBLE STAGGERED ROW OF HAY BALES SHALL BE INSTALLED DOWN SLOPE OF THE OUTLETS OF ANY TEMPORARY BASINS AND A CRUSHED STONE SEDIMENT FILTER BERM SHALL BE INSTALLED JUST UP SLOPE OF THE DOUBLE STAGGERED ROW OF HAY BALES.

3) UPON INSTALLATION OF THE EROSION AND SEDIMENTATION MEASURES, (CONSTRUCTION ENTRANCE ANTI-TRACKING PADS, CLEARING AND GRUBBING) CONSTRUCTION ACTIVITIES MAY COMMENCE. TEMPORARY DIVERSION BERMS/DITCHES SHALL BE CONSTRUCTED AS NECESSARY FOR EXCAVATIONS. DIVERSIONS AND OTHER TEMPORARY MEASURES SHALL BE APPROVED BY THE ENGINEER IN ADVANCE, AND SHALL DIRECT RUNOFF TO SWALES WITH CHECK DAMS, AND/OR TO TEMPORARY SEDIMENT TRAPS.

4) EXCAVATION FOR CONSTRUCTION OF THE PROPOSED ROADWAY SHALL NOT COMMENCE UNTIL ASSOCIATED DRAINAGE & SEDIMENTATION DEVISES FOR THE AREA ARE IN PLACE. IT SHOULD BE NOTED THAT EXTENSIVE EXCAVATION WITHIN THE LIMITS OF THE CUT AND FILL LINE INDICATED ON THE PLANS MAY REQUIRE ADDITIONAL TEMPORARY SWALES AND DIVERSION IN ORDER TO DIVERT AND DIRECT RUNOFF AND SEEPAGE TO THE PROPOSED DISCHARGE POINTS UNTIL THE PERMANENT STORM DRAINAGE SYSTEM IS INSTALLED. THESE TEMPORARY MEASURES MUST BE APPROVED IN ADVANCE AND SHOULD BE INSPECTED REGULARLY FOR OPERATIONAL EFFICIENCY BY THE CONTRACTOR. UTILIZATION OF TEMPORARY INLETS AND DIVERSION SWALES UNTIL THE DRAINAGE SYSTEM IS COMPLETE IS EXPECTED. THESE INLETS/DIVERSIONS SHALL BE CONSTRUCTED SO AS TO PREVENT EROSION AND SEDIMENTATION.

5) MEASURES TO CONTROL CONSTRUCTION DEBRIS AND DUST SHALL BE IMPLEMENTED ON AN AS NEEDED BASIS AND AS DIRECTED BY THE TOWN. DUST SHALL BE CONTROLLED BY LIMITING THE AREA OF SOIL EXPOSED AND BY WATERING WITHOUT CHEMICAL ADDITIVES. CONSTRUCTION DEBRIS SHALL BE COLLECTED AS NECESSARY AND AT LEAST PRIOR TO THE END OF WORK EACH WEEK.

6) SOIL & ROCK STOCK PILE AREAS SHALL BE APPROVED IN ADVANCE AND HAY BALE AND/OR SILT FENCE BARRIERS SHOULD BE INSTALLED AROUND STOCK PILES AND DOWN SLOPE OF THESE AREA PRIOR TO STOCK PILING MATERIAL. ANY SOIL TO BE STORED FOR MORE THAN A MONTH SHOULD BE COVERED OR SEEDED AND/OR MULCHED AFTER BEING PLACED.

7) THE BASE MATERIAL FOR THE DRIVES AND PARKING AREAS SHALL BE PLACED AND WATERED AS REQUIRED BY CONDITIONS OR REQUESTED BY THE DEEP TO CONTROL DUST AS NOTED ABOVE.

8) ONCE UTILITIES ARE INSTALLED AND THE PROPOSED SITE IS IN FINAL GRADED SHAPE, PAVING OPERATIONS SHALL TAKE PLACE. UPON PLACEMENT OF THE FIRST LAYER OF PAVEMENT AND CURBING, TOPSOIL AND SEEDING SHOULD COMMENCE ALONG WITH THE INSTALLATION OF NEW CHECK HAY BALE BARRIERS AS REQUIRED. IF THE ROAD IS NOT TO BE PAVED IMMEDIATELY, CONSTRUCTION TRAFFIC SHOULD BE RUN ON APPROVED SUBBASE, WITH RUNOFF, EROSION & DUST CONTROLLED AS NECESSARY.

9) THESE EROSION AND SEDIMENTATION CONTROL PLANS SHALL BE IN COMPLIANCE WITH PERMITS ISSUED AND IN COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS.

10) RESPONSIBLE PERSONS:

DURING CONSTRUCTION-TO BE DESIGNATED BY THE CONTRACTOR.
LONG TERM MAINTENANCE-TO BE DESIGNATED BY NAUGATUCK VALLEY COMMUNITY COLLEGE.

E. EARTH SLOPES

1) ALL EARTH SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL SHALL BE COVERED WITH EROSION CONTROL BLANKET UNTIL VEGETATION IS ESTABLISHED.

2) ALL EARTH SLOPES (REGARDLESS OF GRADE) WHERE THE TOE OF SLOPE IS WITHIN 25' OF A WETLAND SHALL BE COVERED WITH EROSION CONTROL BLANKET UNTIL VEGETATION IS ESTABLISHED.

F. SEEDING

1) TEMPORARY VEGETATIVE COVER: SHALL BE PERFORMED IN ACCORDANCE WITH THE STATE OF CONNECTICUT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS BRIDGES & INCIDENTAL CONSTRUCTION (FORM 816) AND THE SPECIFICATIONS.

2) PERMANENT VEGETATIVE COVER: DISTURBED AREAS SHALL BE FINE GRADED AND COVERED WITH A MINIMUM OF 6 INCHES OF TOPSOIL. FERTILIZER SHALL BE APPLIED AT THE RATE OF ±45 LBS. (NITROGEN) PER ACRE USING 1-2-1 OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT THE RATE OF 3 TONS/ACRE (OR IN ACCORDANCE WITH SPECIFIC SOIL TESTS). WORK FERTILIZER AND LIMESTONE THOROUGHLY INTO THE TOPSOIL. REFER TO SPECIFICATIONS FOR FURTHER DETAILED FERTILIZER REQUIREMENTS.

3) SEED MIXTURE: SEED MIXTURE SHALL BE AS DEFINED IN THE SPECIFICATIONS. CONTRACTOR SHALL SUBMIT THE SEED SUPPLIERS NAME, LOCATION, AND SEED MIX TO THE ENGINEER PRIOR TO THE APPLICATION OF SEED.

4) SEEDING DATES: ALL PERMANENT SEEDING SHALL BE DONE DURING THE SEEDING PERIODS OF APRIL 15 THROUGH SEPTEMBER 15. WATER, MOW, AND REPAIR VEGETATIVE COVER TO MAINTAIN IT IN A HEALTHY GROWING CONDITION. TEMPORARY SEEDING SHALL BE PERFORMED AS NECESSARY TO STABILIZE SLOPES DURING ALL PERIODS OF CONSTRUCTION. THE CONTRACTOR SHALL WATER AS NECESSARY TO ESTABLISH AND MAINTAIN HEALTHY GROWING CONDITIONS.

G. RECORDS

EROSION AND SEDIMENTATION CONTROL RECORDS SHALL BE KEPT BY THE CONTRACTOR. INSTALLATION, INSPECTION, APPROVAL AND MAINTENANCE OF INSTALLATION RECORDS SHALL INDICATE THE FOLLOWING:

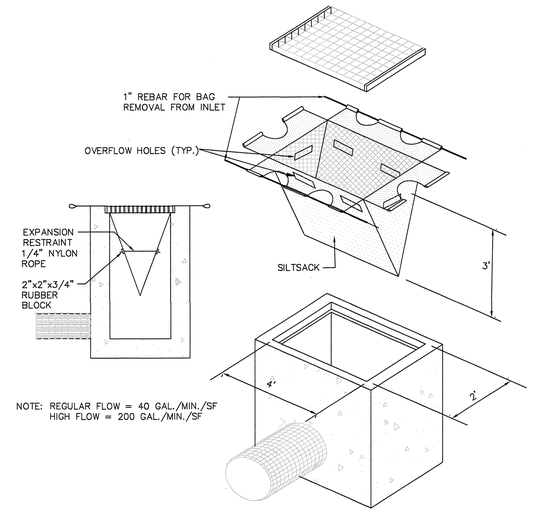
1) LOCATION OF THE EROSION AND SEDIMENTATION CONTROL MEASURE.

2) INSTALLED BY (PRINT NAME AND SIGNATURE) AND DATE OF INSTALLATION.

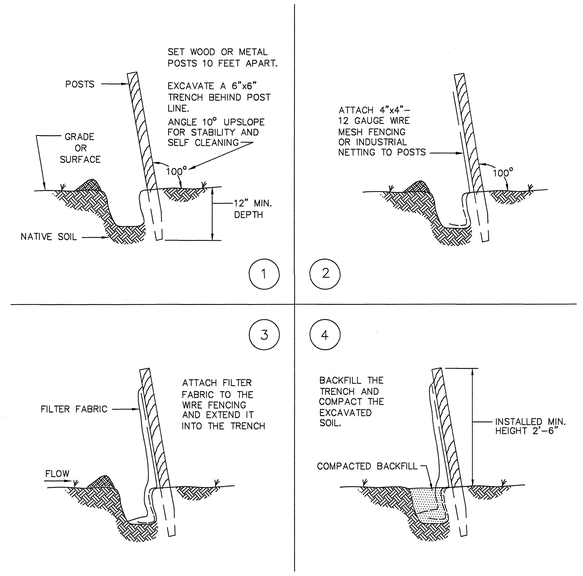
3) APPROVAL BY DEEP OF THE INSTALLED MEASURE (PRINT NAME AND SIGNATURE) AND DATE OF APPROVAL.

4) SUBSEQUENT INSPECTIONS, DATE OF INSPECTION & REASON FOR INSPECTION.

5) RESULTS OF SUBSEQUENT INSPECTION, ACTION TO BE TAKEN BY THE CONTRACTOR SPECIFIC REQUIREMENTS OF THIS PLAN.

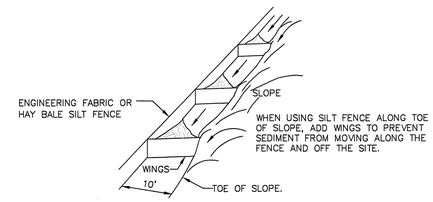


1 / C1.5 SILT SACK DETAIL
NTS

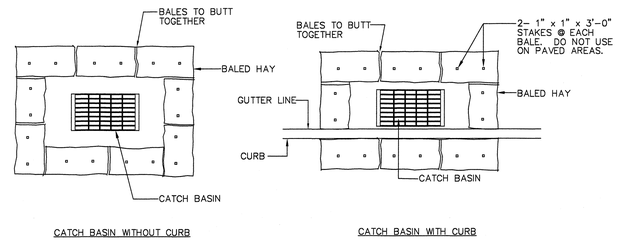


NOTE:
FENCE TO BE INSTALLED PRIOR TO CONSTRUCTION
PREASSEMBLED UNITS ALSO MAY BE USED, INSTALLED AS INDICATED.

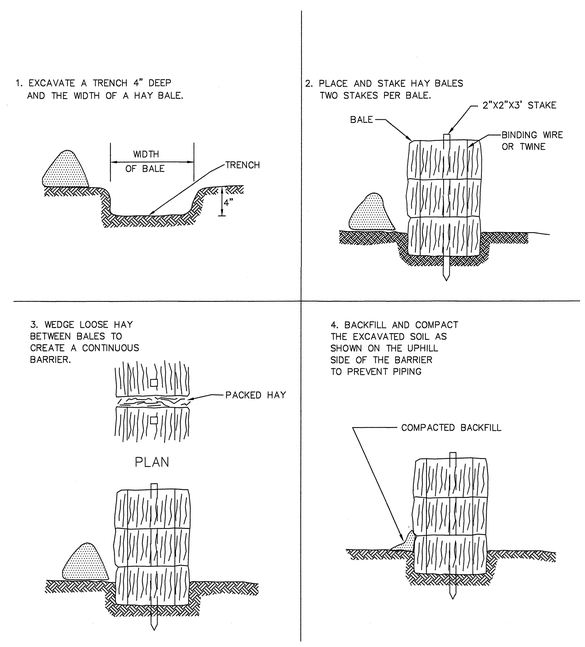
2 / C1.5 FILTER FABRIC SILT FENCE PLACEMENT AND CONSTRUCTION
FIGURE-5



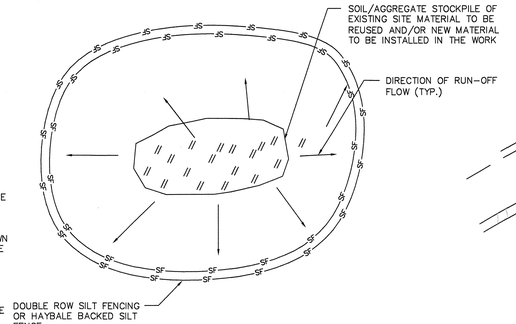
3 / C1.5 SILT FENCE WINGS
NTS



4 / C1.5 SEDIMENTATION CONTROL BALES AT CATCH BASINS
NO SCALE

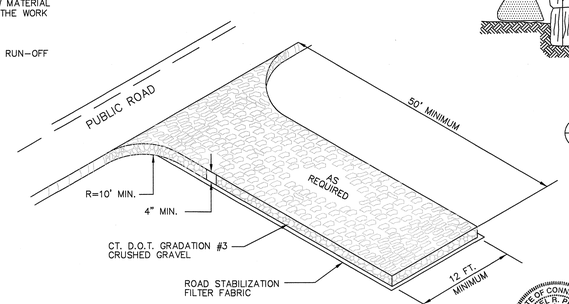


5 / C1.5 HAY BALE BARRIER PLACEMENT AND CONSTRUCTION
NTS



STOCKPILE NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS OR LOCATED IN THE FIELD WITH THE APPROVAL OF THE ENGINEER.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RE-SEED AS REQUIRED.
4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
5. STOCKPILES OF EARTH MATERIALS TO BE IN PLACE GREATER THAN 30 DAYS SHALL BE COVERED, SEEDED WITH TEMPORARY SEED MIX OR MULCHED.

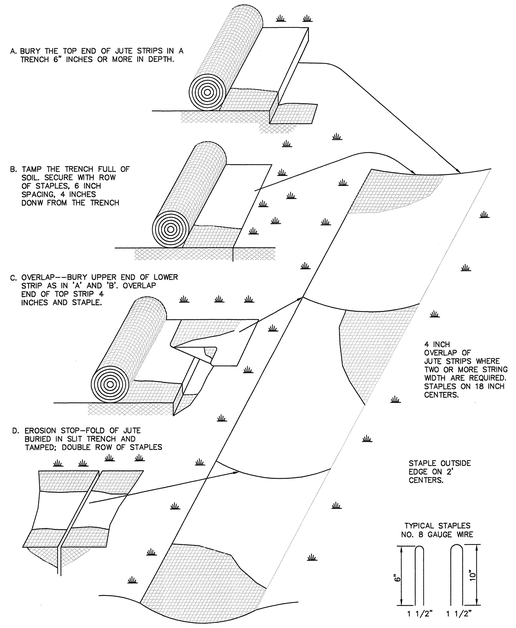
6 / C1.5 TYPICAL STOCKPILE DETAIL
NTS



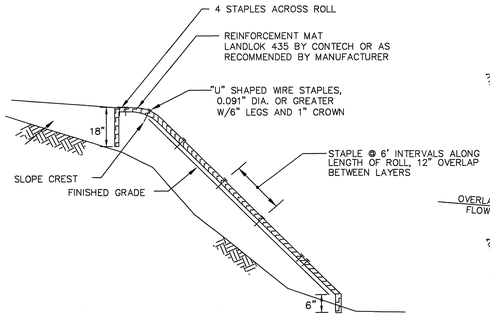
7 / C1.5 ANTI-TRACKING PAD
N.T.S.

100% CONTRACT DOCUMENTS

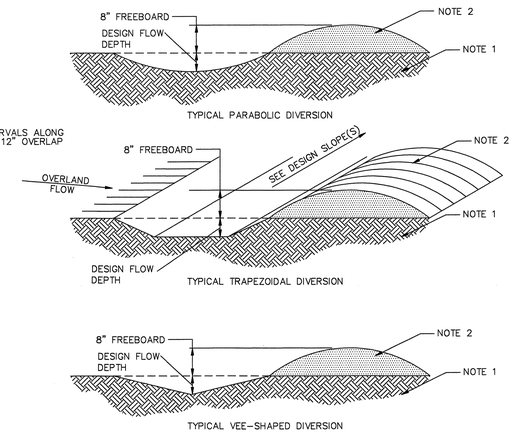
drawing title			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES	
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS				
REVISIONS				
mark	date	description	drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105	date 1/15/2015
-	-	-		scale AS NOTED
			project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT	drawn by HSM
				approved by MRP
			CAD no. C1.5.dwg / project no. BI-CTC-436	drawing no. C1.9



1 C1.6 **INSTALLATION OF JUTE NETTING**
N.T.S.



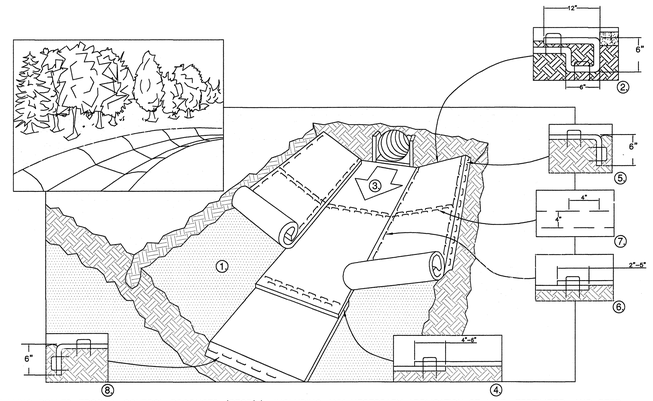
2 C1.6 **STEEP SLOPE TREATMENT DETAIL**
N.T.S.



NOTES:

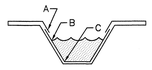
1. REMOVE ANY EXISTING VEGETATION AND SCARIFY OR BENCH ADJACENT SOILS PRIOR TO PLACING BERM.
2. BERM MATERIALS MUST BE ADEQUATELY COMPACTED AND STABILIZED.
3. REFER TO SWPCP, LANDSCAPING DRAWINGS, OR SPECIFICATIONS FOR TEMPORARY AND/OR FINAL STABILIZATION MEASURES.
4. BERM SHALL NOT BE CONSTRUCTED OF TOPSOIL.

4 C1.6 **TYPICAL DIVERSIONS**
N.T.S.



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" (10 CM –15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (5 CM –12.5 CM) (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 M – 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE:
* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



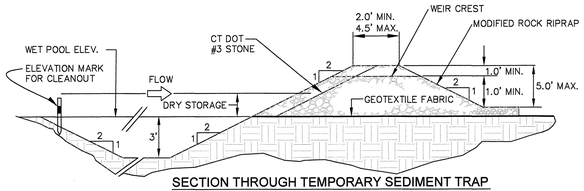
CRITICAL POINTS

A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

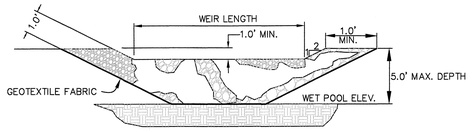
NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

INSTALLATION OF EROSION CONTROL BLANKET - DRAINAGE SWALES
N.T.S.

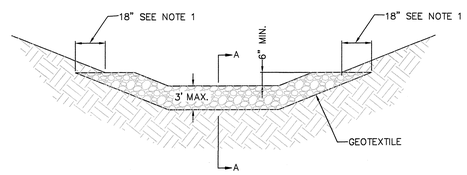


SECTION THROUGH TEMPORARY SEDIMENT TRAP
NTS



SECTION THROUGH TEMPORARY SEDIMENT TRAP OUTLET
NTS

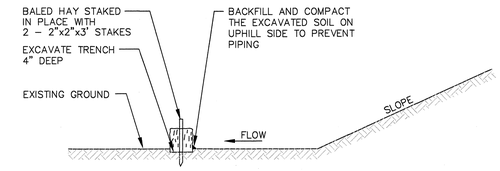
5 C1.6 **TEMPORARY SEDIMENT TRAP**
NTS



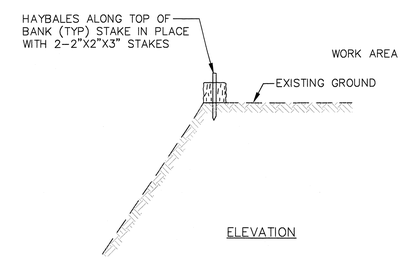
VIEW LOOKING UPSTREAM
N.T.S.

NOTES:

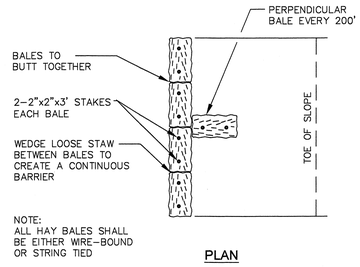
1. KEY STONE INTO THE DITCH BANKS AND EXTEND INTO THE ABUTMENTS A MINIMUM OF 18" TO PREVENT FLOW FROM FLANKING THE CHECK DAM.



ELEVATION



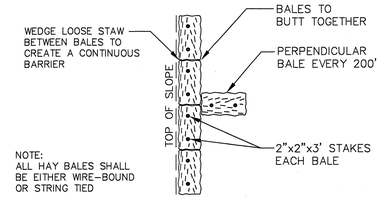
ELEVATION



NOTE:
ALL HAY BALES SHALL BE EITHER WIRE–BOUND OR STRING TIED

PLAN

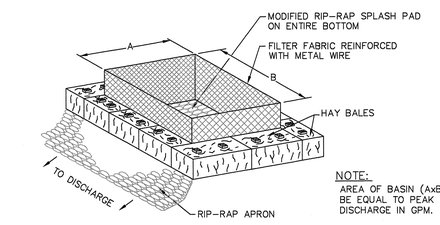
10 C1.6 **TYPICAL HAY BALE SLOPE BARRIER AT TOE OF SLOPE**
NTS



NOTE:
ALL HAY BALES SHALL BE EITHER WIRE–BOUND OR STRING TIED

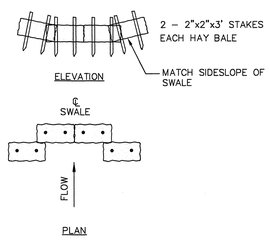
PLAN

11 C1.6 **TYPICAL HAY BALE SLOPE BARRIER AT TOP OF SLOPE**
NTS

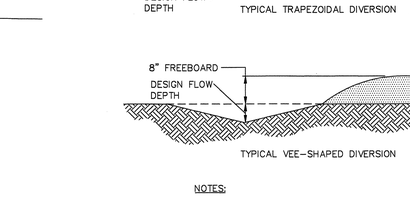


NOTE:
AREA OF BASIN (AxB) SHALL BE EQUAL TO PEAK PUMP DISCHARGE IN GPM.

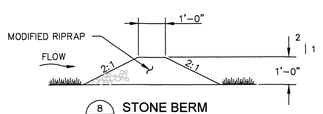
6 C1.6 **TEMPORARY SEDIMENT BASIN FOR DEWATERING DISCHARGE**
N.T.S.



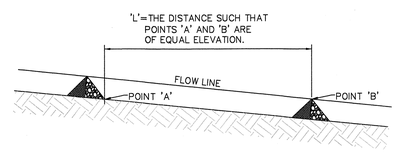
7 C1.6 **HAY BALE SWALE BARRIER**
NTS



SECTION A–A
N.T.S.



8 C1.6 **STONE BERM**
NTS



SPACING BETWEEN CHECK DAMS
NTS

9 C1.6 **ROCK CHECK DAM**
N.T.S.

REFER TO SHEET C1.1 THRU C1.8 FOR SEDIMENT AND EROSION CONTROL PLAN AND ADDITIONAL NOTES.

REFER TO SHEET C1.9 FOR ADDITIONAL EROSION AND SEDIMENT CONTROL DETAILS.

100% CONTRACT DOCUMENTS

drawing title: EROSION AND SEDIMENT CONTROL DETAILS

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

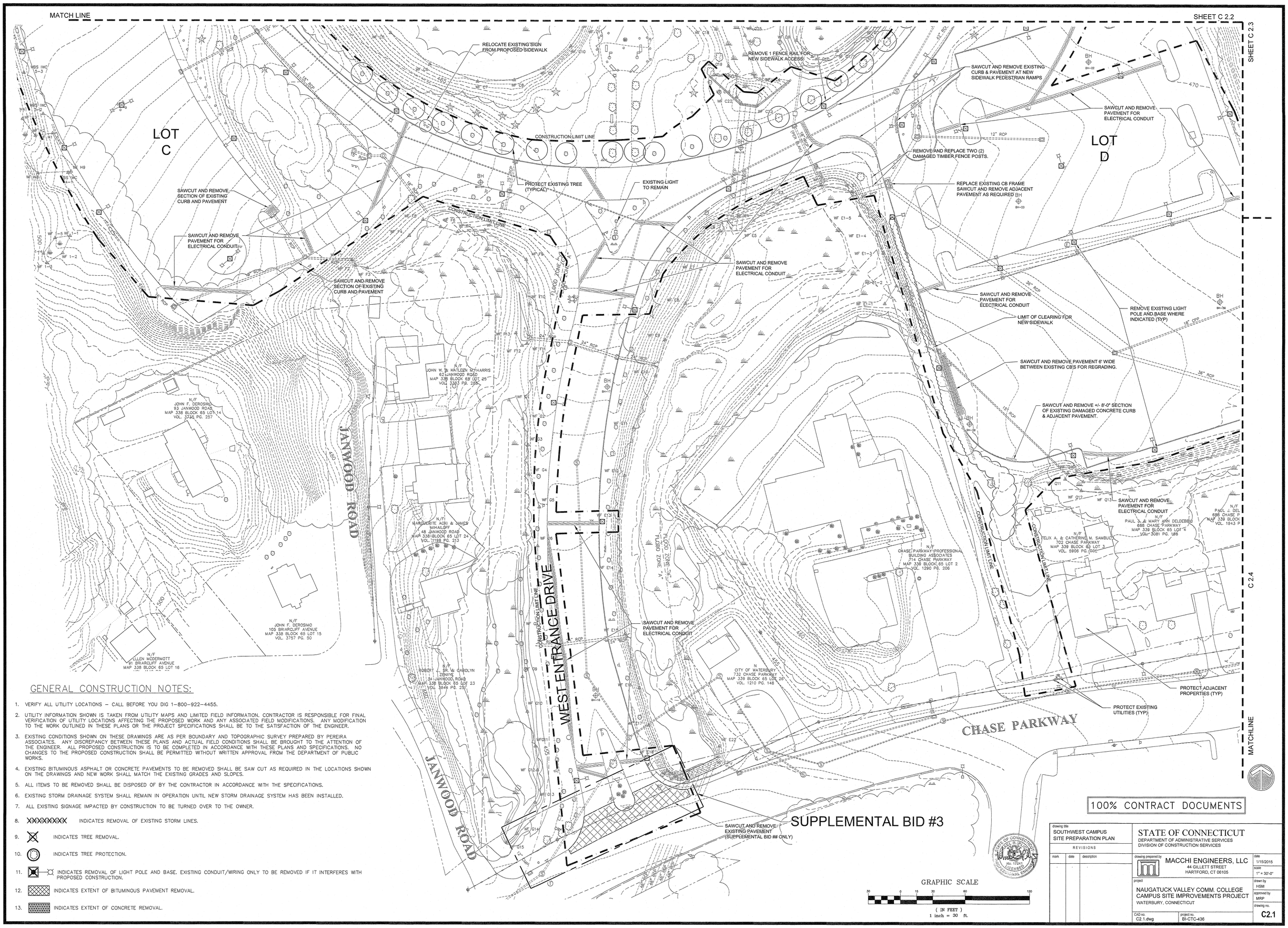
drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C1.8.dwg
project no. BI-CTC-436

date 1/15/2015
scale AS NOTED
drawn by HSM
approved by MRP
drawing no. C1.10

STATE OF CONNECTICUT · MICHAEL R. PIZZO · No. 17241 · LICENSED PROFESSIONAL ENGINEER

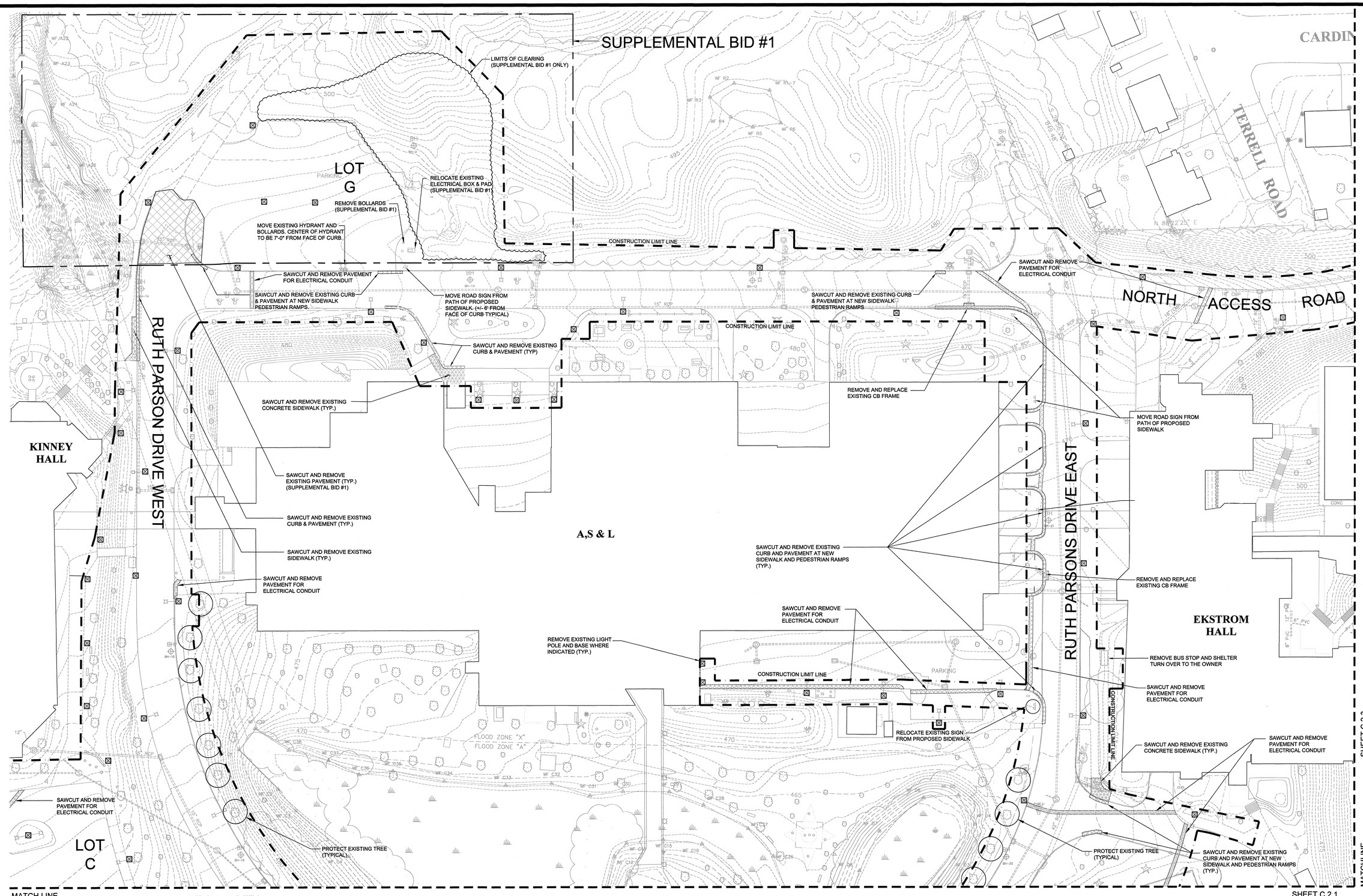


GENERAL CONSTRUCTION NOTES:

1. VERIFY ALL UTILITY LOCATIONS – CALL BEFORE YOU DIG 1-800-922-4455.
2. UTILITY INFORMATION SHOWN IS TAKEN FROM UTILITY MAPS AND LIMITED FIELD INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FINAL VERIFICATION OF UTILITY LOCATIONS AFFECTING THE PROPOSED WORK AND ANY ASSOCIATED FIELD MODIFICATIONS. ANY MODIFICATION TO THE WORK OUTLINED IN THESE PLANS OR THE PROJECT SPECIFICATIONS SHALL BE TO THE SATISFACTION OF THE ENGINEER.
3. EXISTING CONDITIONS SHOWN ON THESE DRAWINGS ARE AS PER BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY PEREIRA ASSOCIATES. ANY DISCREPANCY BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ALL PROPOSED CONSTRUCTION IS TO BE COMPLETED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. NO CHANGES TO THE PROPOSED CONSTRUCTION SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.
4. EXISTING BITUMINOUS ASPHALT OR CONCRETE PAVEMENTS TO BE REMOVED SHALL BE SAW CUT AS REQUIRED IN THE LOCATIONS SHOWN ON THE DRAWINGS AND NEW WORK SHALL MATCH THE EXISTING GRADES AND SLOPES.
5. ALL ITEMS TO BE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.
6. EXISTING STORM DRAINAGE SYSTEM SHALL REMAIN IN OPERATION UNTIL NEW STORM DRAINAGE SYSTEM HAS BEEN INSTALLED.
7. ALL EXISTING SIGNAGE IMPACTED BY CONSTRUCTION TO BE TURNED OVER TO THE OWNER.
8. XXXXXXXX INDICATES REMOVAL OF EXISTING STORM LINES.
9. INDICATES TREE REMOVAL.
10. INDICATES TREE PROTECTION.
11. INDICATES REMOVAL OF LIGHT POLE AND BASE. EXISTING CONDUIT/WIRING ONLY TO BE REMOVED IF IT INTERFERES WITH PROPOSED CONSTRUCTION.
12. INDICATES EXTENT OF BITUMINOUS PAVEMENT REMOVAL.
13. INDICATES EXTENT OF CONCRETE REMOVAL.

100% CONTRACT DOCUMENTS

drawing title: SOUTHWEST CAMPUS SITE PREPARATION PLAN	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES
REVISIONS (mark / date / description)	drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105
	project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT
	CAD no. C2.1.dwg; project no. BI-CTC-436
	date 1/15/2016; scale 1" = 30'-0"; drawn by HSM; approved by MRP; drawing no. C2.1



GENERAL CONSTRUCTION NOTES:

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4. EXISTING BITUMINOUS ASPHALT OR CONCRETE PAVEMENTS TO BE REMOVED SHALL BE SAW CUT AS REQUIRED IN THE LOCATIONS SHOWN ON THE DRAWINGS AND NEW WORK SHALL MATCH THE EXISTING GRADES AND SLOPES.
5. ALL ITEMS TO BE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.
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7. ALL EXISTING SIGNAGE IMPACTED BY CONSTRUCTION TO BE TURNED OVER TO THE

8. XXXXXXXX INDICATES REMOVAL OF EXISTING STORM LINES.
9. INDICATES TREE REMOVAL.
10. INDICATES TREE PROTECTION.
11. INDICATES REMOVAL OF LIGHT POLE AND BASE. EXISTING CONDUIT/WIRING TO BE REMOVED IF IT INTERFERES WITH PROPOSED CONSTRUCTION.
12. INDICATES EXTENT OF BITUMINOUS PAVEMENT REMOVAL.
13. INDICATES EXTENT OF CONCRETE REMOVAL.

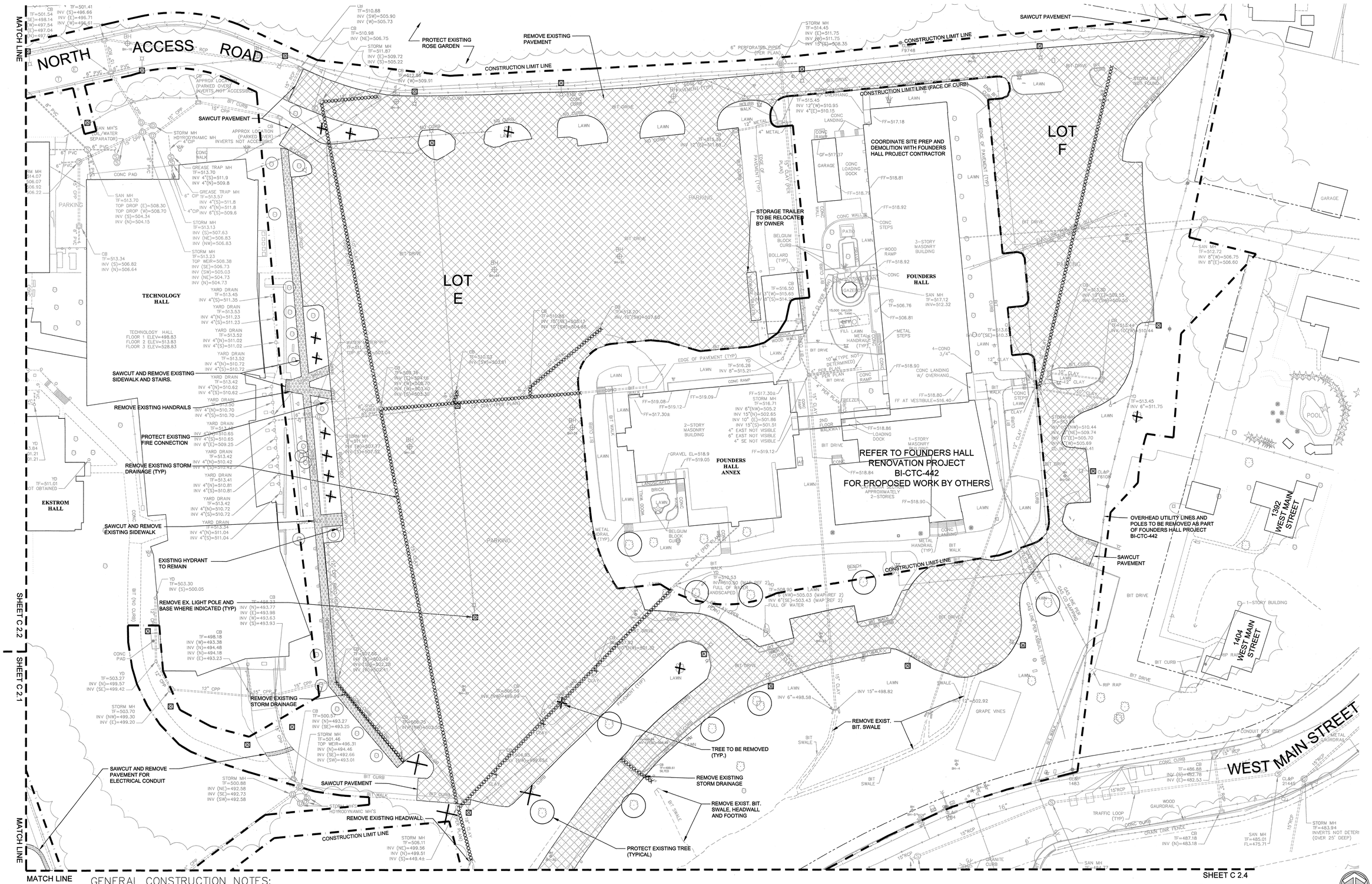
GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

100% CONTRACT DOCUMENTS

drawing title: NORTHWEST CAMPUS SITE PREPARATION PLAN	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES		
REVISIONS			
mark / date / description	drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105	date: 1/15/2015	
	project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT	scale: 1" = 30'-0"	
		drawn by: HSM	
		approved by: MRP	
	CAD no. C2.2.dwg / project no. BI-CTC-436	drawing no. C2.2	



GENERAL CONSTRUCTION NOTES:

1. VERIFY ALL UTILITY LOCATIONS – CALL BEFORE YOU DIG 1-800-922-4455.
2. UTILITY INFORMATION SHOWN IS TAKEN FROM UTILITY MAPS AND LIMITED FIELD INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FINAL VERIFICATION OF UTILITY LOCATIONS AFFECTING THE PROPOSED WORK AND ANY ASSOCIATED FIELD MODIFICATIONS. ANY MODIFICATION TO THE WORK OUTLINED IN THESE PLANS OR THE PROJECT SPECIFICATIONS SHALL BE TO THE SATISFACTION OF THE ENGINEER.
3. EXISTING CONDITIONS SHOWN ON THESE DRAWINGS ARE AS PER BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY PEREIRA ASSOCIATES. ANY DISCREPANCY BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ALL PROPOSED CONSTRUCTION IS TO BE COMPLETED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. NO CHANGES TO THE PROPOSED CONSTRUCTION SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.
4. EXISTING BITUMINOUS ASPHALT OR CONCRETE PAVEMENTS TO BE REMOVED SHALL BE SAW CUT AS REQUIRED IN THE LOCATIONS SHOWN ON THE DRAWINGS AND NEW WORK SHALL MATCH THE EXISTING GRADES AND SLOPES.
5. ALL ITEMS TO BE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.
6. EXISTING STORM DRAINAGE SYSTEM SHALL REMAIN IN OPERATION UNTIL NEW STORM DRAINAGE SYSTEM HAS BEEN INSTALLED.
7. ALL EXISTING SIGNAGE IMPACTED BY CONSTRUCTION TO BE TURNED OVER TO THE OWNER.
8. XXXXXXXX INDICATES REMOVAL OF EXISTING STORM LINES.
9. INDICATES TREE REMOVAL.
10. INDICATES TREE PROTECTION.
11. INDICATES REMOVAL OF LIGHT POLE AND BASE. EXISTING CONDUIT/WIRING TO BE REMOVED IF IT INTERFERES WITH PROPOSED CONSTRUCTION.
12. INDICATES EXTENT OF BITUMINOUS PAVEMENT REMOVAL.
13. INDICATES EXTENT OF CONCRETE REMOVAL.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

100% CONTRACT DOCUMENTS

drawing title: EAST CAMPUS SITE PREPARATION PLAN

REVISIONS

mark	date	description

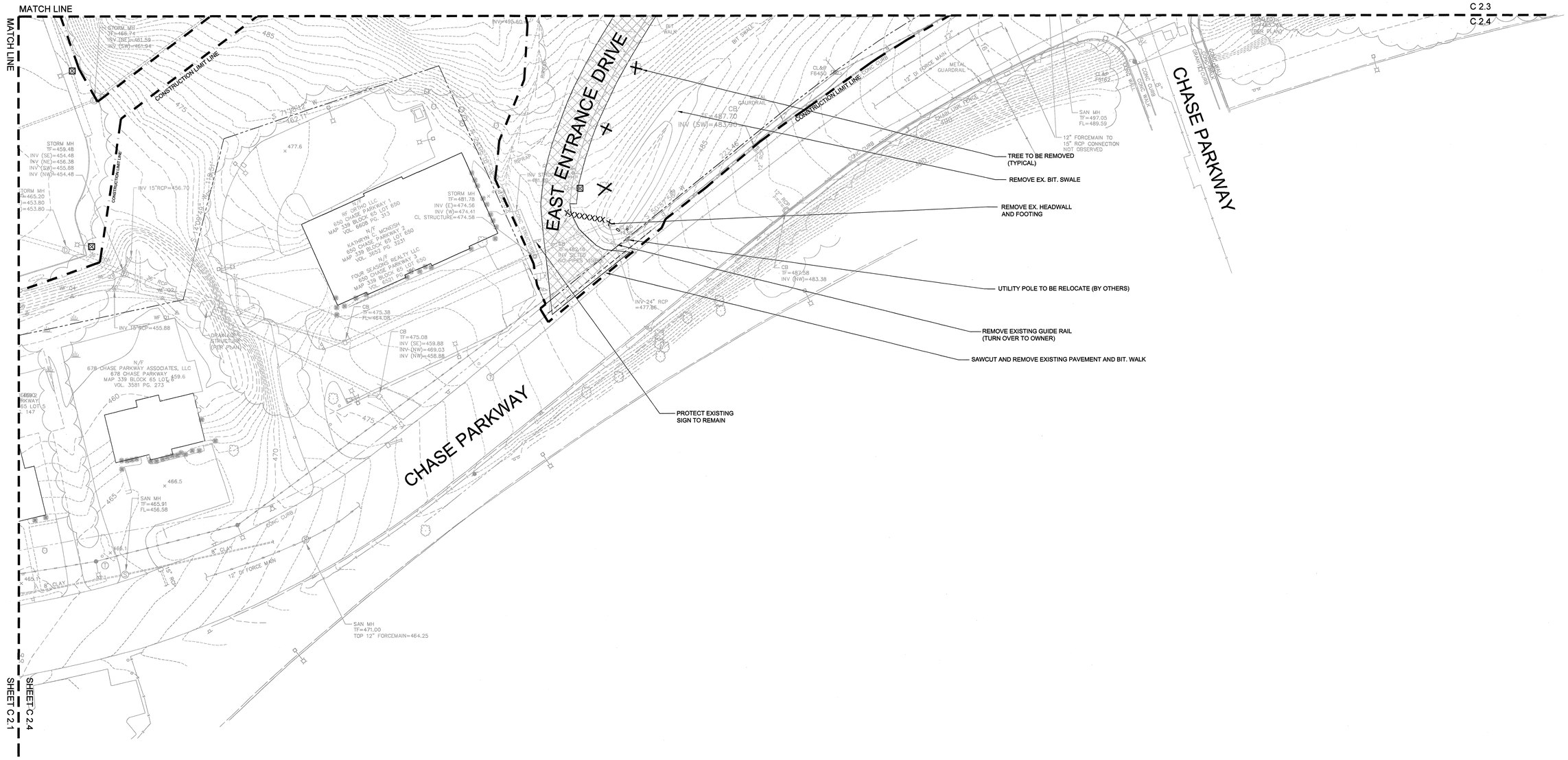
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C2.3.dwg
project no. BI-CTC-436

date 1/15/2015
scale 1" =20'-0"
drawn by HSM
approved by MRP
drawing no. C2.3



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13. INDICATES EXTENT OF CONCRETE REMOVAL.

100% CONTRACT DOCUMENTS

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

drawing title	EAST ENTRANCE DRIVE SITE PREPARATION PLAN
REVISIONS	mark / date / description
STATE OF CONNECTICUT	DEPARTMENT OF ADMINISTRATIVE SERVICES, DIVISION OF CONSTRUCTION SERVICES
drawing prepared by	MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105
date	1/15/2015
scale	1" = 30'-0"
project	NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT
drawn by	HSM
approved by	MRP
CAD no.	C2.4.dwg
project no.	BI-CTC-436
drawing no.	C2.4

Stormwater Pollution Control Plan

Campus Site Improvements Project
Naugatuck Valley Community College
DCS Project # BI-CTC-436

Waterbury, Connecticut

March 2015

FUSS & O'NEILL

146 Hartford Road
Manchester, CT 06040

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Campus Site Improvements Project
Naugatuck Valley Community College

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A CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities Registration Form and General Permit
B Construction Drawings and Details
C Sedimentation and Erosion Control Inspection Report Form
D Identification of Contractor and Certification Statements
E License Transfer Form
F Geotechnical Evaluation, June 203, Tighe & Bond, Inc.
G Infiltration Testing Memorandum, July 2014, Fuss & O'Neill, Inc.
H *Drainage Analysis*, January 2015, Macchi Engineers, LLC
I Stormwater Treatment Calculations
J LID Constraint Mapping
K Notice of Termination Form
L Stormwater Monitoring Report Form (Turbidity Sampling Data) and Sampling Location Map

1 Introduction

This Stormwater Pollution Control Plan (Plan) has been prepared on behalf of the Connecticut Department of Administrative Services, Division of Construction Services (DCS) for proposed campus site improvements at Naugatuck Valley Community College in Waterbury, Connecticut. A location map of the site is included as *Figure 1*. This Plan is required as part of the registration process under section (5)(b)(5)(C) of the Connecticut Department of Energy and Environmental Protection (CT DEEP) *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* (General Permit), dated August 21, 2013.

Macchi Engineers, LLC. is the engineer of record for the project and is responsible for the design including erosion and sediment control measures and post construction stormwater management facilities. Fuss & O'Neill was retained by DCS to provide peer review and to prepare the permit application and Stormwater Pollution Control Plan.

The project involves the reconstruction of the existing parking lots E and F, widening of the East Entrance Drive, expansion and paving of Lot G, upgrading and reconfiguring portions of the existing drainage system, and replacement of the site lighting throughout the campus. The site work will include the construction of pavement, sidewalks, ramps, grading, and the installation of utilities (electric, lighting, telecommunications, and stormwater drainage). The construction process also includes the clearing and grubbing of designated areas, protection of existing plantings (to remain), stripping and stockpiling of topsoil, site landscaping, site lighting, and the installation of erosion and sediment control measures.

This project is a "construction activity" in accordance with the CT DEEP General Permit. A copy of the General Permit and registration is included in *Appendix A*. The purpose of this Plan is to minimize pollution caused by soil erosion and sedimentation during construction and stormwater pollution caused by use of the site after construction is complete.

During construction the contractor(s) shall be responsible for implementing all elements of the erosion and sedimentation control measures as defined on the drawings and in this Plan (see *Appendix B*). Major construction activities will be phased to minimize areas of disturbance during construction. Erosion and sedimentation controls will be implemented and adjusted as needed during construction to minimize soil erosion.

During the construction process, the Permittee or Permittee's agent shall periodically inspect all erosion control measures. A copy of the inspection form to be used is provided in *Appendix C*. After construction, the Permittee shall be responsible for maintaining these erosion and sedimentation control measures. This project will not be considered complete until all disturbed areas have been satisfactorily stabilized for at least three months, all erosion has been repaired, and all temporary erosion control measures have been removed as called for on the plans.

The Permittee will provide a copy of this Plan to the contractors/subcontractors conducting construction activities. The general contractor(s) and subcontractor(s) will be required to sign the certification statement located in *Appendix D* of this Plan.

CT DEEP will be notified by the Permittee if the license for this activity will be transferred to another party. A copy of the CT DEEP License Transfer Form to be used for this purpose is provided in *Appendix E*.

1.1 Amendments to the Stormwater Pollution Control Plan

This Plan will be amended under the following circumstances:

- There is a change in contractors or subcontractors at the site.
- There is a change in design, construction, operation, or maintenance at the site which has the potential for the discharge of pollutants to the waters of the state and which has not otherwise been addressed in the Plan.
- If the actions required by this Plan fail to prevent pollution.
- If the Commissioner notifies the Permittee at any time that the Plan and/or site do not meet one or more of the minimum requirements of the General Permit.

Within seven days of the Commissioner's notification, as described above, the Permittee will make the required changes to the Plan and perform all actions required by the revised Plan. Within fifteen days of the Commissioner's notification, the Permittee will submit to the Commissioner a written certification that the requested changes were made and implemented.

2 Site Description

2.1 Existing Site Conditions

The project site located on the approximately 114.5-acre campus of Naugatuck Valley Community College located in Waterbury, Connecticut. Currently, approximately 34.5 acres of the parcel is developed with buildings, parking areas, sidewalks, and landscaped areas. Undeveloped portions of the site are mainly densely wooded with steep slopes. A portion of a United States Geological Survey (USGS) topographic map showing the site location is provided as Figure 1.

The site generally slopes from north to south, with Welton Brook running through the western side of campus. Stormwater runoff is collected via catch basins and swales and is piped to Welton Brook, which flows south and ultimately leaves the site under Chase Parkway. Runoff from the site ultimately discharges to the Housatonic River. On-site detention is limited to a pond located on the western side of campus south of the student center. Only a minor portion of the developed area drains to this pond. Existing stormwater treatment facilities are limited to two hydrodynamic separators located north and south of Technology Hall.

According to geotechnical investigations performed at the site (a copy of the geotechnical report is in *Appendix F*), the on-site soils vary across the site but generally contain a high fine content. Soil borings also indicate several areas with varying depths of previously-placed fill. Groundwater was encountered in several borings at depths ranging from 4 to 11 feet below the ground surface. Shallow bedrock was also encountered throughout the western portion of campus. Additionally, a layer of organic peat was

noted in Lot E and Lot D. The geotechnical report further notes that the site soils have a "relatively high fine grain content which may be problematic to stormwater infiltration as the permeability may be too low."

According to the CT DEEP June 2014 edition of the Natural Diversity Data Base (NDDB), there are no identified areas of concern for known occurrences of State and Federally-listed endangered, threatened and special concern species and significant natural communities on or in the vicinity of the property.

2.2 Project Description

The "construction activity" involves the reconstruction of the existing parking lots E and F, widening of the East Entrance Drive, expansion and paving of Lot G, upgrading and reconfiguring portions of the existing drainage system, and replacement of the site lighting throughout the campus. The site work will include the construction of pavement, sidewalks, ramps, grading, and the installation of utilities (electric, lighting, telecommunications, and stormwater drainage). Construction drawings prepared by Macchi Engineers, LLC are located in *Appendix B*. Construction is expected to begin in the spring/summer of 2015 and be completed by fall 2016.

Erosion and sediment control measures for the project were designed in accordance with the 2002 edition of the *Connecticut Guidelines for Soil Erosion and Sediment Control*, (CT DEEP Bulletin 34) (as amended), as published by the Connecticut Council on Soil and Water Conservation in cooperation with the CT DEEP. Installation details and detailed erosion and sediment control notes are provided in the construction drawings. These notes are in accordance with CT DEEP Bulletin 34.

Post-construction stormwater management measures were designed in accordance with the General Permit requirements and the CTDEEP 2004 Connecticut Stormwater Quality Manual, as amended.

2.3 Area of Disturbance

Soil disturbance will be limited to those areas identified in the construction drawings. These areas of disturbance include the pavement reconstruction and expansion areas. The total disturbed area is approximately 11.6 acres. The runoff coefficient of the disturbed area, primarily existing parking lots, is approximately 0.69.

2.4 Stormwater Discharge Information

Both prior to and following construction activities, the storm runoff from the project area and surrounding section of the campus will be collected and routed to the exiting storm sewer system located at the southern portion of the site. This system flows southwesterly then northwesterly across adjacent properties and combines with the storm drainage from the remainder of the campus. Runoff then enters Welton Brook, which flows south and ultimately leaves the site under Chase Parkway. Runoff from the site ultimately discharges to the Housatonic River.

A detailed drainage analysis was prepared for this project by Macchi Engineers, LLC, and is included as *Appendix H*.

2.5 Receiving Waters

Runoff from the site is eventually conveyed to the wetlands located to the southwest of the site. This wetland area discharges to Welton Brook (local basin) – part of the larger Hop Brook (sub-regional basin), Naugatuck (regional), and Housatonic River watersheds (major basin). None of these waterways are in listed in Table 2 (d) of the permit application nor are they listed in the 305b table. Therefore, the project is not subject to the additional requirements for discharges to impaired waters.

The design of the project is consistent with the 2002 edition of the *Connecticut Guidelines for Soil Erosion and Sediment Control,* (CT DEEP Bulletin 34) (as amended), and incorporates controls to avoid direct impacts to wetlands and watercourses.

2.6 On-Site Wetlands

There are no known wetlands within the project disturbance limits. Wetlands on the subject property are primarily located in the area adjacent to the West Entrance Drive.

3 Construction Sequence

The Contractor shall be aware that clearing, grubbing, stripping, and associated earthwork operations have significant potential to cause erosion and sedimentation until complete stabilization of the site has occurred.

Construction is anticipated to begin in spring/summer of 2015 and be completed by the end of 2016. Normal working hours for the site will be 7 AM to 5 PM.

The proposed phasing shown on Sheet C0.1 in *Appendix B* shall serve as a guide to the Contractor (and Subcontractors) to limit total disturbance at any given time to less than two acres where possible. If the Contractor (or Subcontractors) determines that the total disturbed area is 2 acres or more, they shall install and maintain a temporary sediment trap in accordance with the Guidelines, the General Permit, and this Plan. The following is a brief description of the proposed phases of construction:

Phase A – 2015, Lot C Improvements: This phase will consist of installation of site lighting and tree box filters. All erosion and sedimentation control measures shall be installed prior to commencing any work. Final grades and stabilization must be achieved before the removal of erosion and sedimentation control measures.

Phase B – 2015, Lot D Improvements: This phase will consist of installation of site lighting, sidewalk construction, concrete curb installation, and drainage system improvements. All erosion and sedimentation control measures shall be installed prior to commencing any work. Final grades and stabilization must be achieved before the removal of erosion and sedimentation control measures.

Phase C – 2015, West Access Drive, North Access Road, and Ruth Parsons Drive Improvements: This phase will consist of installation of site lighting, sidewalk construction, concrete curb installation, and pavement reconstruction. All erosion and sedimentation control measures shall be installed prior to commencing any work. Final grades and stabilization must be achieved before the removal of erosion and sedimentation control measures.

Phase D – 2015, Lot G Construction: This phase will consist of clearing and grubbing, grading, installation of stormwater improvements and underground detention system, installation of site lighting, sidewalk construction, concrete curb installation, and paving. All erosion and sedimentation control measures shall be installed prior to commencing any work. Final grades and stabilization must be achieved before the removal of erosion and sedimentation control measures.

Phase A – 2016, Lot E South Construction (Requires temporary sediment trap): This phase will consist of full depth pavement reconstruction, expansion of the East Entrance Drive and associated grading, dry water quality swale installation, and drainage improvements. All erosion and sedimentation control measures shall be installed prior to commencing any work. Final grades and stabilization must be achieved before the removal of erosion and sedimentation control measures.

Phase B – 2016, Lot E North Construction (Requires temporary sediment trap): This phase will consist of full depth pavement reconstruction, sidewalk construction, and drainage improvements. All erosion and sedimentation control measures shall be installed prior to commencing any work. Final grades and stabilization must be achieved before the removal of erosion and sedimentation control measures.

Phase C – 2016, Lot F Construction: This phase will consist of full depth pavement reconstruction, sidewalk construction, and drainage improvements. All erosion and sedimentation control measures shall be installed prior to commencing any work. Final grades and stabilization must be achieved before the removal of erosion and sedimentation control measures.

4 Control Measures

This section describes the controls and measures to be implemented on the site both during and after construction to minimize stormwater pollution to the waters of the State of Connecticut. Construction-phase erosion and sediment controls are also shown on the Erosion and Sedimentation Control Plan sheets included as *Appendix B*.

4.1 Erosion and Sediment Controls

The goal of this Plan is to control erosion on the site and to control movement of sediment into adjacent wetlands, watercourses or storm sewer systems. Note that erosion and sediment controls shall conform to the requirements of the *Connecticut Guidelines for Soil Erosion and Sediment Control*, dated May 2002, which will hereafter be referred to as the "Guidelines", and the *2004 Connecticut Stormwater Quality Manual*, as amended, which will hereafter be referred to as the "Standards." To meet these goals,

stabilization, structural and maintenance practices shall be implemented by the Contractor as shown on plan sheets within *Appendix B* and as outlined below.

4.1.1 Stabilization Practices

Both temporary and permanent stabilization practices will be implemented throughout the project to minimize erosion of soil from the disturbed site. Temporary and permanent stabilization measures are proposed to provide protection against erosion both during and after construction. Existing vegetation shall be preserved to the maximum extent practicable.

When construction activities have permanently ceased or when final grades are reached in any portion of the site, stabilization and protection practices shall be implemented within seven days. Areas that will remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection within seven days in accordance with the Guidelines. Areas that will remain disturbed beyond the seeding season shall receive long-term non-vegetative stabilization and protection measures sufficient to protect the site through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the Guidelines.

Structural practices shall be implemented to control the movement of sediment and minimize any discharge of pollutants from the site, divert flows away from exposed soils, store flows, and limit runoff. The structural practices to be implemented during construction are as follows:

- Temporary Vegetative Cover/Temporary Mulching: All exposed areas that will be inactive for more than seven days, or immediately for stockpiles not to be used for 30 days, and areas that have not yet reached finished grades shall receive a temporary vegetative cover during the planting season of March 15 to July 1 and August 1 to October 15. This temporary vegetative cover shall consist of perennial rye grass. The rye grass shall be planted at a rate of 2 lbs. per 1,000 sq. ft. at a depth of ½ inch. Limestone (equivalent to be50% calcium plus magnesium oxide) shall be applied as seedbed prepared at a rate of 90 lbs. per 1,000 sq. ft. Where grass predominates, fertilize according to a soil test at a minimum application rate of 1 lb. of nitrogen for areas to be left bare before finish grading, and seeding outside of planting seasons shall receive an air-dried woodchip mulch, free of coarse matter, treated with 12 lbs. of nitrogen per ton, applied at a rate of 185 to 275 lbs. per 1,000 sq. ft.

  Wood or bark chips/shredded bark may also be used as temporary soil protection/stabilization. Wood chips may be graded by machine or by hand while bark chips and shredded bark must be spread by hand. These materials can be used on slopes at or below 3(H):1(V) and do not need to be anchored down. These materials, if used, will be applied at a rate of 6 cubic yards per 1,000 square feet.

- Permanent Vegetative Cover: Once the planting season begins, temporary stabilization measures shall be removed and slopes shall be prepared and seeded. Planting bed preparation and seeding shall be in accordance with the technical specifications for the project. Seeding shall only occur between April 1 and June 1 and August 15 and October 15.

- Winter Stabilization - Long term and winter stabilization (if necessary) will conform to the provisions of the Best Management Practices (BMP), Guidelines and General Permit.

4.1.2 Structural Practices

Structural practices will be implemented to control the movement of sediment and minimize any discharge of pollutants from the site. The structural practices to be implemented during construction are as follows:

- Sedimentation Control Bales and Silt Sacks at Catch Basin: To prevent sediment from clogging the storm water sewer system after its installation or during construction, a wall of haybales will be installed around catch basin grates as per the detail provided in the drawings. Catch basin inserts (e.g., silt sacks) may also be installed inside catch basins. Haybales shall be replaced and inserts shall be emptied as necessary. Sediment control at catch basins shall be removed only when the entire site has been permanently stabilized.

- Silt Fence (with and without Wings) and/or Hay Bales: Silt fence and/or hay bales will be installed as shown in *Appendix B*, the silt fence and/or line of hay bales will reduce downgradient siltation and soil migration from stockpiles by acting as sediment filters and will dissipate energy of intercepted runoff. This filter will remove sediment transported by sheet flow from stormwater runoff. Filtering will be further enhanced with the installation of silt fence wings. Details concerning the installation of the silt fence and hay bales are also shown in *Appendix B*. Silt fence and hay bales shall be removed only when the entire site has been permanently stabilized.

- Jute Netting/Erosion Control Blankets: Erosion control blankets, or equivalent protection, will be installed in drainage swales and on slopes at or exceeding 3(H):1(V) to minimize erosion. Blankets/netting will be stapled to slopes in accordance with the manufacturer's installation instructions.

- Construction Entrance/Anti-Tracking Pad: To prevent soil or sediment from being carried off-site by construction equipment, a construction entrance will be installed before construction traffic into and out of the project area begins. The construction entrance details are shown on the plan sheets included in *Appendix B*. The width of the construction entrance shall not be less than the width of site ingresses or egresses. If necessary, adjacent roadways shall be swept daily to remove material that may be tracked onto pavement.

- Rock Check Dams/Stone Berms/Hay Bale Swale Barriers: Rock check dams, stone berms, and hay bale swale barriers are proposed to be installed in onside drainage swales to slow and minimize the erosive properties of the runoff from the disturbed areas and to minimize the transport of sediment from the disturbed areas to the receiving resource areas. A stone berm and hay bale swale barrier detail and locations are provided on plan sheets in *Appendix B*. Rock/stone berms and hay bale swale barriers shall be removed only when the entire site has been permanently stabilized.

- Sediment Traps: To capture eroded or disturbed soil, sediment traps have been incorporated into the design at the end of the drainage swale and driveway. The basin has been designed and

will be installed to provide a minimum of 134 cubic yards of water storage per acre drained. The sediment traps shall be removed only when the entire site has been permanently stabilized.

- Hay Bale Slope Barriers (Toe of Slope & Top of Slope): To capture eroded or disturbed soil, hay bale slope barriers have been incorporated into the design at the top and toes of sloped areas to prevent the movement of sediment off site or onto paved areas. Hay bales shall be removed only when the entire site has been permanently stabilized.

- Temporary Sediment Basin for Dewatering Discharge: To capture eroded or disturbed soil, sediment traps have been incorporated into the design at the end of the drainage swale and driveway. The basin has been designed and will be installed to provide a minimum of 134 cubic yards of water storage per acre drained. The sediment basins shall be removed when all dewatering activities have ceased. All collected sediments shall be removed from the basin the basin area shall be graded (as necessary) to blend with the surrounding area and stabilized using seed and mulch.

- Scour/Riprap Protection: To minimize erosion at the end of drainage pipes, scour/riprap protection pads have been proposed to be installed.

4.1.3 Maintenance

The erosion and sediment controls must be maintained in a condition that will protect the resource areas from pollution during site construction. The Contractor shall conduct the following maintenance to ensure the proper performance of erosion and sediment control measures.

- Temporary and Permanent Vegetation: At any eroded areas, repair by filling grades, replace vegetative support material and seed, fertilize and lime, as specified temporary and permanent stabilization. Add additional mulch as required.

- Pavement Sweeping: If needed, sweep surfaces adjacent to the construction entrances, the soil management areas, and designated haul routes daily. Properly dispose of sediment or debris collected during sweeping.

- Sedimentation Control Bales and Silt Sacks at Catch Basin: Inspect sedimentation control bales immediately after each rainfall and at least daily during prolonged rainfall. Necessary repairs will be made within a reasonable timeframe. Should a hay bale decompose or become ineffective while the barrier is still needed, the hay bale will be replaced promptly. Sediment deposits should be removed when they reach approximately one-half the height of the hay bale. Sediment will be disposed of on-site as non-structural fill.

- Silt Fence/Hay Bales: Inspect silt fence and hay bales immediately after each rainfall and at least daily during prolonged rainfall. Necessary repairs will be made within a reasonable timeframe. Should the fabric or straw decompose or become ineffective while the barrier is still needed, the fabric or hay bale will be replaced promptly.

Sediment deposits should be removed when they reach approximately one-half the height of the barrier. Sediment will be disposed of on-site as non-structural fill. Sediment deposits remaining in place after the silt fence is no longer required will be removed and placed in a stockpile surrounded by silt fence in a location suitable to the Owner or disposed of on-site as non-structural fill.

- Jute Netting/Erosion Control Blankets: Inspect temporary erosion control blankets and jute netting at least twice a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for failures. Blanket/netting failure has occurred when (1) soils and/or seed have washed away from beneath the blanket/netting and the soil surface can be expected to continue to erode at an accelerated rate, and/or (2) the blanket/netting has become dislodged from the soil surface or is torn.

  If washouts or breakouts occur, reinstall the blanket/netting after regrading and reseeding, ensuring that blanket installation still meets design specifications. When repetitive failures occur at the same location, review conditions and limitations for use and determine if diversions, stone check dams or other measures are needed to reduce failure rate.

  Repair any dislodged or failed blankets/netting immediately.

  When used as a substitute for mulch for seed, continue to inspect as required by the seeding measure. When used as a substitute for temporary soil protection, continue to inspect until it is replaced by other erosion control measures or until work resumes.

- Construction Entrance/Anti-Tracking Pad: Maintain the entrance in a condition that will minimize tracking and washing of sediment onto paved surfaces. Add additional stone as necessary. Remove accumulated sediment on paved surfaces.

- Stone Berms/Hay Bale Swale Barriers: Inspect stone berms and hay bales swale barriers immediately after each rainfall and at least daily during prolonged rainfall. Necessary repairs will be made within a reasonable timeframe. Should the straw decompose or become ineffective while the barrier is still needed, the hay bale will be replaced promptly.

  Sediment deposits should be removed when they reach approximately one-half the height of the barrier. Sediment will be disposed of on-site as non-structural fill. Sediment deposits remaining in place after the berm or barrier is no longer required will be removed and placed in a stockpile surrounded by silt fence in a location suitable to the Owner or disposed of on-site as non-structural fill.

- Sediment Traps: Periodically inspect the sedimentation traps and after each major rainfall event. Repairs will be made promptly. Remove accumulated sediment as necessary such that it does not interfere with the design of the structure.

- Hay Bale Slope Barriers (Toe of Slope & Top of Slope): Inspect hay bales immediately after each rainfall and at least daily during prolonged rainfall. Necessary repairs will be made within a reasonable timeframe. Should the hay bale decompose or become ineffective while the barrier is still needed, the hay bale will be replaced promptly.

Sediment deposits should be removed when they reach approximately one-half the height of the barrier. Sediment will be disposed of on-site as non-structural fill. Sediment deposits remaining in place after the barrier is no longer required will be removed and placed in a stockpile surrounded by silt fence in a location suitable to the Owner or disposed of on-site as non-structural fill.

- Scour/Riprap Protection: Periodically inspect the scour/riprap protection and after each major rainfall event. Repairs will be made promptly. Remove accumulated sediment as necessary such that it does not interfere with the design of the control.

4.2 Dewatering Wastewaters

Dewatering on this site is not anticipated. However, in such a case where dewatering is necessary, wastewater from dewatering pumps will be infiltrated into the ground where possible. Where this is impracticable, proper methods and devices shall be utilized to the extent permitted by law, such as pumping water into a temporary sedimentation depression, providing surge protection at the inlet and outlet of pumps, floating the intake of the pump, or other methods to minimize and retain the suspended soils. These wastewaters will not be discharged directly without treatment. If a pumping operation causes turbidity problems beyond the control of these measures, the operation shall cease until feasible means of controlling turbidity (e.g. discharge to the sanitary sewer) are determined and implemented.

4.3 Post-Construction Stormwater Management

4.3.1 Standards

The water quality of runoff from the stabilized, developed site will be improved using widely accepted BMPs.

4.3.2 Control Measures

Following construction, areas disturbed by construction activities shall be stabilized. As a result, the potential for erosion at the site after construction is minimal. Grassed areas will also serve as a filter to remove sediment from runoff if permanently stabilized areas are properly maintained. Perimeter controls (i.e., silt fence) will be actively maintained until final stabilization of those portions of the site up-gradient of the perimeter controls. Temporary perimeter controls will be removed after final stabilization. Riprap outlet protection will be refurbished by the contractor for permanent velocity dissipation control.

Post-development stormwater runoff from the project site will be treated, and infiltrated to the extent feasible, using several Low Impact Development (LID) measures. The proposed LID and related stormwater treatment measures include a retrofit dry water quality swale with check dams, hydrodynamic separators, tree box filters, and deep sump catch basins with hoods for pretreatment of coarse solids and floatables. The drainage system associated with the proposed improvements will connect to the existing

storm drainage system that currently discharges to the southwestern channel/wetlands. The design meets the requirements of the Standards and Guidelines.

The contractor shall be responsible for cleaning all post-construction stormwater management measures and removal of remaining silt fence before filing a termination notice, a copy of which is included as *Appendix K*. After filing the termination, maintenance and cleaning of all post-construction stormwater structures shall become the responsibility of the Owner. The State of Connecticut, DAS Division of Construction Services will maintain the storm drainage facilities in accordance with standard DAS maintenance protocols.

4.3.3 Redevelopment Project Performance Standards

The project site is currently developed with an existing effective impervious cover of approximately 6.9 acres within the 11.6-acre limit of disturbance. Since the existing impervious cover is above 40%, the project falls under the redevelopment post-construction stormwater standards in the General Permit. The General Permit requires redevelopment projects to: (1) retain on-site half of the water quality volume, and (2) provide additional stormwater treatment without retention for discharges up to the full water quality volume. The total water quality volume requirement for the site is 0.594 ac-ft, and approximately 0.297 ac-ft of runoff must be retained on-site. The water quality volume calculations for this project are presented in *Appendix I*.

The low permeability soils, relatively shallow seasonal high groundwater, and shallow bedrock severely restrict the use of stormwater infiltration practices at this site. Infiltration facilities can be no more than several feet deep to meet the minimum 3-foot separation distance from the bottom of the infiltration facilities to seasonal high groundwater levels or bedrock. In addition the facilities would likely take longer than 72 hours to drain and could therefore promote mosquito breeding due to the presence of prolonged periods of standing water. The existing development, steep slopes, and lack of suitable open space on the site also limit the use of surface or at-grade stormwater management options, particularly for retention and/or treatment. The schematic site plan in *Appendix J* depicts the major constraints to the use of LID-based stormwater infiltration and surface stormwater management practices at the project site.

As discussed above, retaining half of the site's total water quality volume (0.594 acre-feet) is infeasible given the poorly draining soils and limited land area for surface retention of stormwater runoff. If retention of half the water quality volume is not feasible, the General Permit requires the redevelopment to retain runoff volume to the "maximum extent achievable"[1], provide additional stormwater treatment up to the full water quality volume, and document the basis for the lower retention volume.

Section 5 discusses the project's stormwater management design and treatment of the full water quality volume.

[1]According to the General Permit, "maximum extent achievable" means using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

4.4 Other Controls

Good housekeeping practices will be implemented to minimize potential impacts to protected areas by pollutants, soil, and fugitive sediment.

4.4.1 Waste Disposal

The following measures shall be implemented to minimize the discharge of litter, debris, building materials, hardened concrete waste, or similar materials to waters of the State.

- Construction waste will be removed from the site and disposed of legally.
- Waste will be removed from the site as soon as practical.
- Containers will be appropriate for the material stored.
- Where necessary, containers will be sealed/covered to prevent waste from escaping the container.
- Containers will only be located where approved by the engineer or regulatory agency.
- Waste storage areas shall be located, designed, and operated to prevent polluted runoff from leaving the waste storage area.
- Fences or covers shall be provided to prevent waste from blowing out of the waste storage area.

4.4.2 Construction Materials

Construction materials will be properly stored in a neat and orderly manner until used. Construction materials shall be stored outside of any buffers and at least 50 feet from any stream, wetland or other sensitive resource.

4.4.3 Washout Areas

Washout of applicators, containers, vehicles, and equipment for concrete, paint, and other materials shall be conducted in a designed washout area. There shall be no surface discharge of washout wastewaters from this area. To eliminate overflows during rainfall or after snowmelt, all washwater shall be directed into a pit. This area shall be outside of any buffers and at least 50 feet from any stream, wetland, or other sensitive resource. The area shall be completely self-contained and clearly marked.

In addition, dumping of liquid wastes into storm sewers is prohibited. All wastes including hardened concrete waste from washouts shall be disposed of legally at an off-site location. At least once per week, all containers or pits used for washout should be inspected for structural integrity, adequate holding capacity, and to check for leaks or overflows. If any deficiencies are discovered, corrective action shall be taken immediately. Washout areas shall be emptied when levels reach ½ the height of the container or pit.

4.4.4 Vehicle Tracking and Dust Control

As shown on the plans, a construction entrance shall be installed and maintained to prevent vehicles from tracking sediment onto public roads. The Contractor shall be responsible for implementing dust suppression techniques during construction, including but not limited to:

- Spraying water or calcium chloride as necessary to control dust from construction activities. The volume of water sprayed for controlling dust shall be minimized so as to prevent runoff of water. No discharge of dust control water shall contain or cause visible oil sheen, floating solids, visible discoloration, or foaming.
- Sweeping surfaces adjacent to the construction entrances and the soil management areas (e.g., soil and material stockpiles) daily. The designated haul routes will be swept as required.

If at any time fugitive dust is observed to be generated from the construction site, the Contractor shall be responsible for employing additional dust suppression techniques to remedy the situation.

4.4.5 Chemical and Petroleum Products

All chemical and petroleum product containers stored on the site (excluding those contained within vehicles and equipment) shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area. Containers of 100 gallon capacity or more may be stored without a roof only if stored in a double-walled tank.

On-site vehicles shall be monitored for leaks and receive maintenance as needed.

4.4.6 Fertilizers

Fertilizers, if used in conjunction with the seeding operation, will be applied only in the amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered area. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

4.4.7 Spill Control Practices

The following practices shall be implemented during construction activities to mitigate spills of material and prevent their release to the waters of the State.

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dust pans, mops,

rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- Spills will be cleaned up immediately after discovery.
- Spills of toxic or hazardous material will be reported to the appropriate State and local government agency, regardless of size.

5 Runoff Reduction and Low Impact Development (LID) Information

The primary objectives of the stormwater management design for the Naugatuck Valley Community College campus site improvements project are to:

1. Provide treatment for the full water quality volume using Low Impact Development (LID) filtration practices, where feasible, augmented with proprietary treatment devices, in accordance with the 2004 Connecticut Stormwater Quality Manual.

2. Provide retention/infiltration, to the extent that site constraints will allow.

3. Provide peak runoff rate attenuation to satisfy CT DEEP Flood Management Certification requirements.

The following sections describe the proposed stormwater management design relative to the stormwater treatment, stormwater retention, and peak runoff attenuation performance objectives and standards described above.

Stormwater Treatment

The proposed project design will provide treatment for the site's full water quality volume (WQV) utilizing tree box filters (proprietary bioretention or "biofiltration" systems), a dry water quality swale constructed as a retrofit to an existing drainage swale, and hydrodynamic separators (See *Appendix I* for water quality volume / flow calculations). Tree box filters are considered LID practices, which are small decentralized systems located throughout a site that treat runoff prior to entering the storm drainage system. Tree box filters are proposed, where feasible, to treat runoff from areas of the site with higher potential pollutant loads.

The following table summarizes the proposed water quality volume/flow by treatment type:

Treatment Type	Treatment WQV (Ac-ft)	Percentage of Total WQV
Tree Box Filtration	0.087	14%
Dry Water Quality Swale	0.200	33%
Hydrodynamic separators	0.326	53%
Total:	0.613	

Portions of the project such as the additional sidewalks and widening of the East Entrance Drive will not be directly treated by the proposed measures due to site constraints that limit their feasibility for these areas. Instead stormwater treatment is proposed on a campus-wide level where the goal is to provide an equivalent level of WQV treatment for the overall site. The tree box filters located in Lot C will provide treatment of a currently untreated area to offset the portions of the proposed work where treatment is not feasible. This approach has been previously discussed with the CT DEEP for this project.

A total of 4 tree box filters are proposed to treat runoff from paved parking areas in Lot G and Lot C. A large dry water quality swale is proposed at the existing swale between the East Entrance Drive and Chase Parkway and will treat runoff from portions of Lot E, Lot F, and the Eastern Entrance Drive. An in-line hydrodynamic separator with bypass capabilities for higher flows is proposed to treat runoff from the remaining area in Lot E where tree box filters or surface bioretention is not feasible. Two additional in-line hydrodynamic separators will provide pre-treatment for the dry water quality swale. A total of 3 hydrodynamic separators are proposed throughout the site. Overflows from the tree box filters will enter adjacent catch basins. The schematics in *Appendix J* depict the locations of the proposed stormwater treatment practices for the project site and the area they treat. *Appendix B* of the Plan includes typical cross sections and details of the proposed stormwater treatment practices.

The proposed tree box filters (Filterra Bioretention Systems) and hydrodynamic separators (Continuous Deflective Separator or CDS) are manufactured treatment systems. Both have been certified by the New Jersey Corporation for Advanced Technology (NJCAT) stormwater BMP performance certification program to treat stormwater runoff when designed and installed in accordance with the manufacturer's specifications. The tree box filters are certified to remove 80% total suspended solids (TSS), while the hydrodynamic separators are certified to remove 50% TSS and 100% of floatables and neutrally buoyant materials. Copies of the program certifications as well as operation and maintenance guidelines for these systems are provided in *Attachment B*. The proposed tree box filters will be located adjacent to existing or proposed catch basins in a curb inlet bypass configuration to capture and treat the water quality volume/flow (i.e., first flush) and allow flows in excess of the water quality flow to bypass the treatment unit and discharge directly to the drainage system. The hydrodynamic separators will utilize an internal bypass to capture and treat the water quality flow and bypass higher flows, without the need for additional manholes and weirs.

The proposed post-construction stormwater management design for the project will meet the redevelopment treatment standard in the General Permit by providing treatment for the site's full water quality volume. The proposed stormwater treatment measures will also significantly improve the quality of runoff leaving the site compared to existing conditions.

Stormwater Retention

As indicated previously, retaining half of the site's total water quality volume (0.594 acre-feet) on-site is infeasible given the poorly draining soils and limited land area for surface retention of stormwater runoff. However, the design incorporates a water quality swale to provide some limited retention/infiltration to the extent that site constraints will allow.

Fuss & O'Neill performed infiltration testing at the proposed dry water quality swale location on July 22, 2014 in support of the stormwater management design. A copy of the memorandum summarizing the results of this testing is located in *Appendix G*. It was found that in-situ soils and infiltrations rates varied considerably along the proposed swale. Infiltration rates varied from approximately 0"/hour to 1.5"/hour. The composition of the soils and the results of the testing make establishing an appropriate infiltration rate difficult.

The proposed dry water quality swale is designed based on the results of the infiltration testing to maximize potential infiltration while fully draining the water quality volume within 72 hours following a storm. To accomplish this the swale was designed with a wide unlined bottom to increase infiltration surface area, check dams to pond water and allow additional time for infiltration, and an underdrain to prevent long-term ponding.

Peak Runoff Attenuation (Detention)

Although not a requirement of the General Permit, the proposed stormwater management design includes an underground detention system in Lot G to maintain post-development peak runoff rates at or below existing peak runoff rates for up to the 100-year storm event, consistent with CT DEEP Flood Management Certification requirements. The proposed system in located in the southeast corner of Lot G underneath the proposed parking. It will receive and attenuate runoff from Lot G and the hillside north of Lot G. The underground system will discharge into the existing drainage system along the North Access Road. *Appendix H* includes a summary comparison of modeled existing and proposed peak runoff rates for the project site.

6 Inspection

6.1 Plan Implementation Inspections

Within the first 30 days following commencement of the construction activity on the site, the Permittte shall contact a qualified inspector, as defined by the General Permit, to inspect the site. The site shall be inspected at least once and no more than three times during the first 90 days to confirm compliance with the General Permit and proper initial implementation of all controls measures designated in the Plan for the site for the initial phase of construction.

6.2 Routine Inspections

The Permittee shall routinely inspect the site for compliance with the General Permit and the Plan for the site until a Notice of Termination has been submitted. Inspection procedures for these routine inspections shall be addressed and implemented in the following manner:

- The Permittee shall maintain a rain gauge on-site to document rainfall amounts.

- The Permittee shall engage a qualified inspector, as defined by the General Permit, to inspect the site at least once every seven calendar days and within 24 hours of the end of a storm that generates a discharge.
- For storms that equal or exceed 0.5 inches that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, an inspection is required within 24 hours. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours.
- Where sites have been temporarily or finally stabilized, inspection shall be conducted at least once every month for three months to confirm compliance with the General Permit.

The items to be inspected shall include, at a minimum, the following:

- Disturbed areas of the construction activity that have not been permanently stabilized
- All erosion and sediment control measures
- All structural control measures
- Stockpile areas
- Washout areas
- Drainage control facilities including diversion and perimeter drainage ditches
- Locations where vehicles enter or exit the site

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be visually inspected to ascertain whether erosion control measures are effective in preventing significant impacts, such as turbidity to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

Based on the results of the inspection, the description of potential sources and pollution prevention measures identified in the Plan shall be revised as appropriate by the Owner or his agent as soon as practicable after such inspection.

A report shall be prepared for every inspection and retained as part of the Plan. The report shall, at a minimum, summarize the following:

- The scope of the inspection
- Name(s) and qualifications of personnel making the inspection
- Date(s) of the inspection
- Weather conditions including precipitation information
- Major observations relating to the implementation of the storm water pollution control plan
- Descriptions of the stormwater discharge(s) from the site

- Any water quality monitoring performed during the inspection
- Statement that, in the judgment of the qualified inspector(s), the site is either in compliance or out of compliance with the terms and conditions of the Plan and General Permit.

The report shall be signed by both the qualified inspector and the Permittee or his/her authorized representative in accordance with the General Permit. A blank copy of the inspection report is provided in *Appendix C.*

If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants from the site.

6.3 Corrective Actions

If at any time an inspection determines that the site is out of compliance with the terms and conditions of this Plan and the General Permit, corrective actions shall be taken. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan within three calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven days and incorporated into a revised Plan within ten calendar days of the date of inspection unless another schedule is specified in the Guidelines.

7 Monitoring

Stormwater sampling is required for monitoring turbidity. Sampling shall occur on a monthly basis, during storm events that generate a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage areas associated with each outfall is achieved. Sampling shall continue on a monthly basis until final stabilization of the drainage area associated with each outfall is achieved.

Sampling is only required during normal working hours, as defined by the General Permit. For this site, normal working hours for stormwater monitoring shall be Monday through Friday, 7AM to 5PM. If sampling is discontinued due to the end of normal working hours, it shall be resumed the next working day as long as the discharge continues. Sampling may be temporality suspended if at any time conditions existing that may reasonable pose a threat to the safety of the person taking the sample (i.e. high winds, lighting, flooding, intense rainfall). Sampling shall resume once the unsafe conditions are no longer present.

7.1 Monitoring Requirements

All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event that generated a discharge. Sampling of snow or ice melt in the absence of a storm event is not a valid sample.

Samples shall be grab samples taken at least three separate times during a storm event. The samples shall be representative of the flow and characteristics of the discharge. The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where discharges begin outside of normal working hours, the first sample shall be taken at the start of normal working hours.

Sampling is required of all point source discharges of stormwater from disturbed areas. Sampling shall be done in accordance with 40 CFR Part 136/ASTM D1889-00. The sampling location is shown in *Figure 2* and shall be identified in the field with a flag, stake, or other visible marker.

7.2 Monitoring Reports

The stormwater turbidity value for each sampling point shall be determined by taking the average of the turbidity values of all samples at that sampling point during a given storm. Any samples containing snow or ice melt must be noted. A blank copy of the stormwater monitoring report for submitting turbidity sampling data is provided in *Appendix L*.

Monitoring reports shall be submitted to CT DEEP in accordance with the provisions outlined in the General Permit.

The proposed sampling point is depicted in *Figure 2.* The site has one sampling point, this point is described below:

- Sampling Point #1 – just downstream from the two stormwater discharge points (18" RCP and 48" RCP) to the existing swale located southwest of the entrance to Lot D from Ruth Parson's Drive. The stormwater drainage area for this sampling point includes the entire development area.

8 Contractors

8.1 General

All contractors and subcontractors who will perform actions on the site that may reasonably be expected to cause or have the potential to cause pollution of the waters of the State will be identified in *Appendix D*.

8.2 Certification Statement

All contractors and subcontractors must sign the certification included in *Appendix D*. All certifications will be included in the Stormwater Pollution Control Plan.

9 Additional Requirements

9.1 Endangered and Threatened Species

Fuss & O'Neill conducted a review of the map titled Natural Diversity Data Base (NDDB) Areas in Waterbury, CT dated June 2014 published by the Connecticut Department of Energy and Environmental Protection (see map within *Appendix A*). Preliminary review verified that the project is not located within, or in close proximity to an area known to contain State and Federal Listed Species and Significant Natural Communities. Therefore, a NDDB review was not necessary.

10 Reporting and Record Keeping Requirements

The Owner will retain an updated copy of this Plan at the facility from the date construction is initiated until the date construction activities are completed. Following construction, the Plan and all inspections, reports, and certifications required by the General Permit shall be maintained for a minimum of three years.

11 Termination

Once the site has been stabilized and all final inspections have occurred, the registrant shall file a termination notice. Prior to filing for termination, all temporary erosion and sediment control measures shall be removed. A blank copy of the termination form is provided in *Appendix K*.

12 Certifications

12.1 Permittee Signature

"I hereby certify that I am making this certification in connection with a registration under such general permit, submitted to the commissioner by the State of Connecticut, Education Department for an activity located at Naugatuck Valley Community College; 750 Chase Parkway; Waterbury, CT and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a157b of the Connecticut General Statutes and any other applicable law."

_____ _____

Allen Herring Date
Chief Engineer

12.2 Professional Engineer/Landscape Architect Certification

"I hereby certify that I am a professional engineer licensed in the State of Connecticut. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by DAS - Division of Construction Services for activities at Naugatuck Valley Community College; 750 Chase Parkway; Waterbury, CT. I certify that I have thoroughly and completely reviewed the Stormwater Pollution Control Plan for the project or activity covered by this certification. I further certify, based on such review and on the standard of care for such projects, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, the Stormwater Quality Manual, as amended, and the conditions of the general permit, and that the controls required for such Plan are appropriate for the site. I further certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement in this certification may subject me to sanction by the Department and/or be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

Erik V. Mas

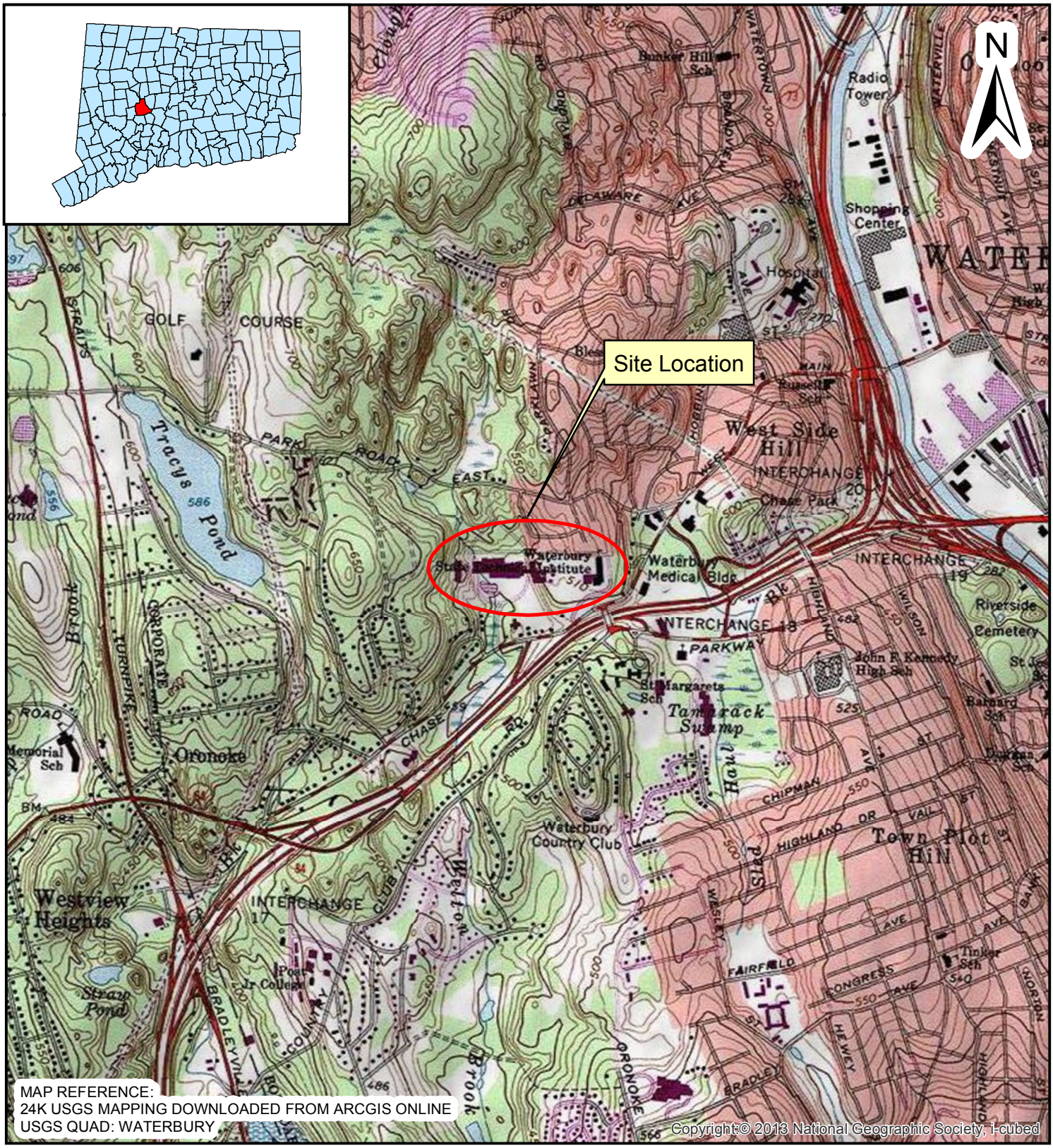
Erik Mas, P.E.
Vice President, Fuss & O'Neill, Inc.

3/16/15

Date

STATE OF CONNECTICUT
ERIK V. MAS
NO. 20615
LICENSED
PROFESSIONAL ENGINEER

Figures



FEBRUARY 2015

FIGURE 1

2,000 1,000 0 2,000 Feet

LOCUS MAP

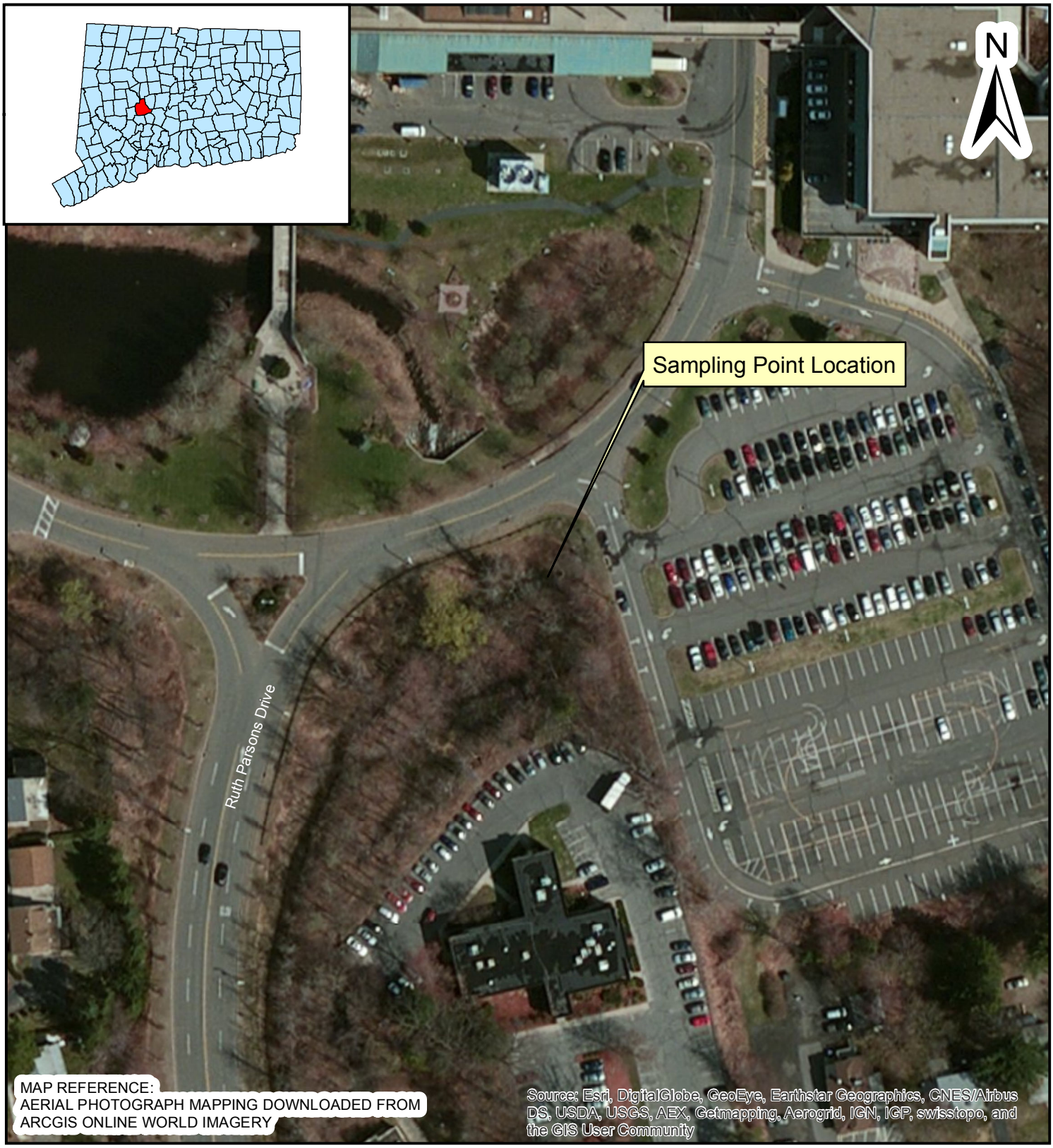
STORMWATER POLLUTION CONTROL PLAN
NVCC CAMPUS IMPROVEMENT PROJECT - BI-CTC 436

SCALE
HORZ: 1 INCH = 2,000 FEET
VERT:
DATUM
HORZ:
VERT: NGVD29 (3-METER CONTOURS)

FUSS & O'NEILL

WATERBURY, CONNECTICUT

K:\P2012\1699\FIG1_Locus_Map.mxd



FEBRUARY 2015

FIGURE 2

100 50 0 100 Feet

1 inch = 100 feet

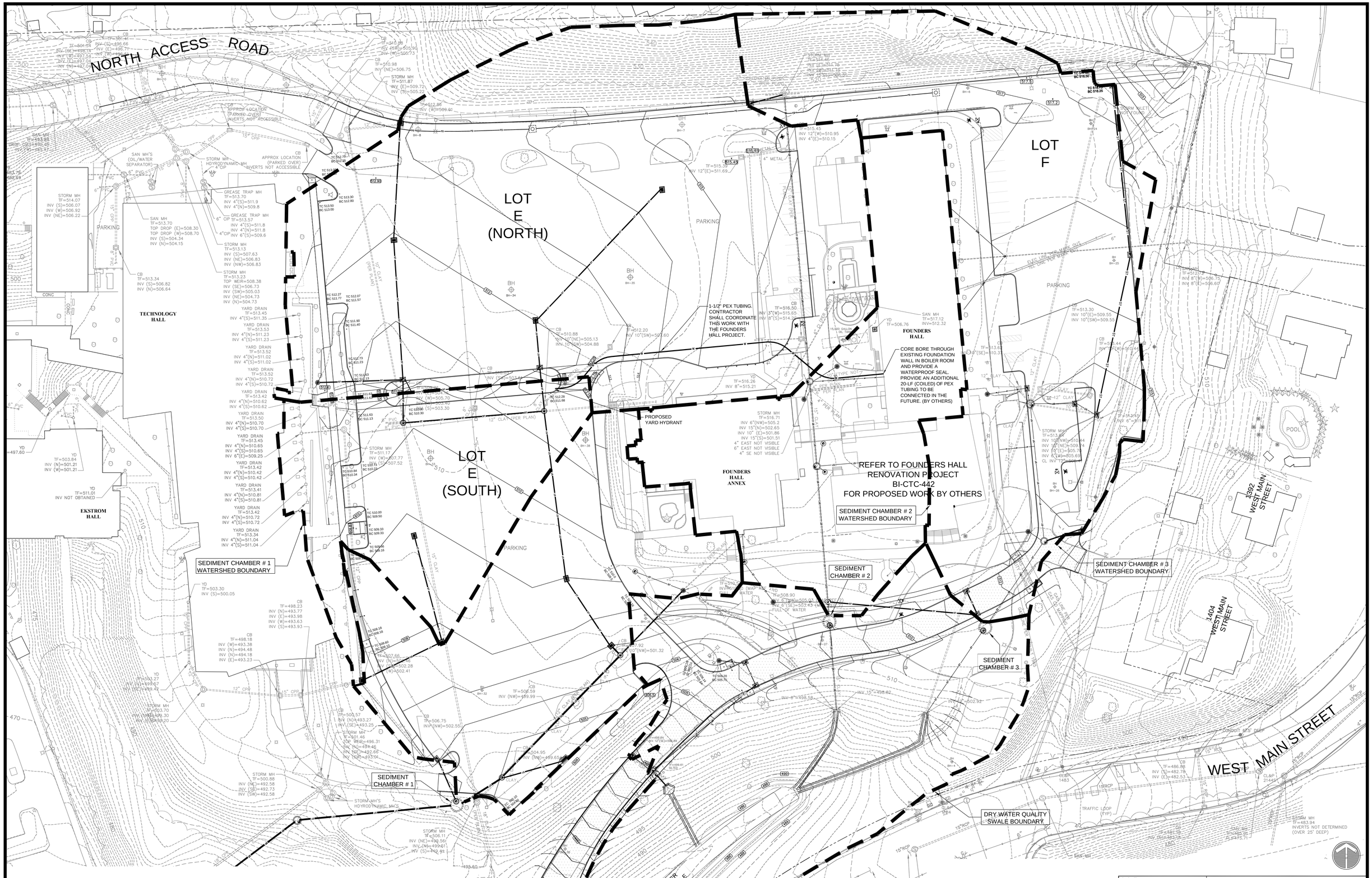
SAMPLING POINT LOCATION MAP

STORMWATER POLLUTION CONTROL PLAN
NVCC CAMPUS IMPROVEMENT PROJECT - BI-CTC 436

FUSS & O'NEILL

WATERBURY, CONNECTICUT

K:\P2012\1699\FIG2_Sampling_Point_Location_Map.mxd



SEDIMENT CHAMBER AREA DATA
SEDIMENT CHAMBER #1 TOTAL AREA = 4.58 ACRES
ASSOCIATED PROPOSED IMPERVIOUS AREA = 4.09 ACRES (89%)
ASSOCIATED PROPOSED PERVIOUS AREA = 0.49 ACRES (11%)
SEDIMENT CHAMBER #2 TOTAL AREA = 1.29 ACRES
ASSOCIATED PROPOSED IMPERVIOUS AREA = 0.69 ACRES (53%)
ASSOCIATED PROPOSED PERVIOUS AREA = 0.60 ACRES (47%)
SEDIMENT CHAMBER #3 TOTAL AREA = 1.86 ACRES
ASSOCIATED PROPOSED IMPERVIOUS AREA = 1.56 ACRES (84%)
ASSOCIATED PROPOSED PERVIOUS AREA = 0.30 ACRES (16%)

DRY WATER QUALITY SWALE AREA DATA
TOTAL AREA = 4.58 ACRES (Includes Sediment Chamber #2 & #3 Areas)
ASSOCIATED PROPOSED IMPERVIOUS AREA = 2.56 ACRES (51%)
ASSOCIATED PROPOSED PERVIOUS AREA = 2.47 ACRES (49%)

drawing title
SEDIMENT CHAMBER WATERSHED PLAN

REVISIONS

mark	date	description

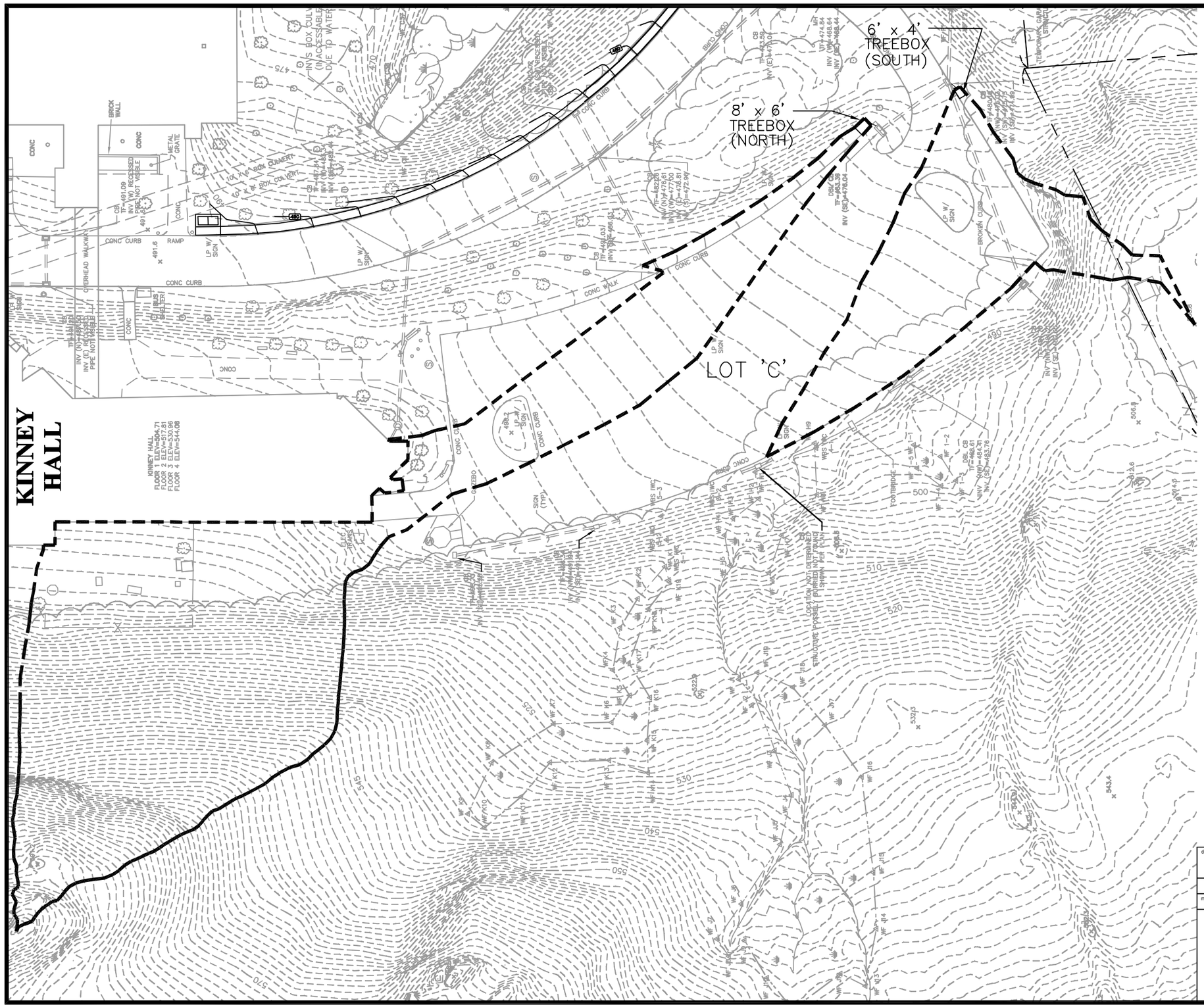
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

date 12/22/2014
scale 1" = 30'-0"
drawn by HSM
approved by MRP

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C4.3.dwg
project no. BI-CTC-436
drawing no. EC1.1



AREA DATA
WATERSHED AREA (NORTH) = 1.15 ACRES
IMPERVIOUS AREA = 0.28 ACRES (24%)
PERVIOUS AREA = 0.87 ACRES (76%)
WATERSHED AREA (SOUTH) = 0.36 ACRES
IMPERVIOUS AREA = 0.27 ACRES (75%)
PERVIOUS AREA = 0.09 ACRES (25%)

drawing title
TREE BOX WATERSHEDS IN PARKING LOT 'C'

REVISIONS

mark	date	description
.	.	.

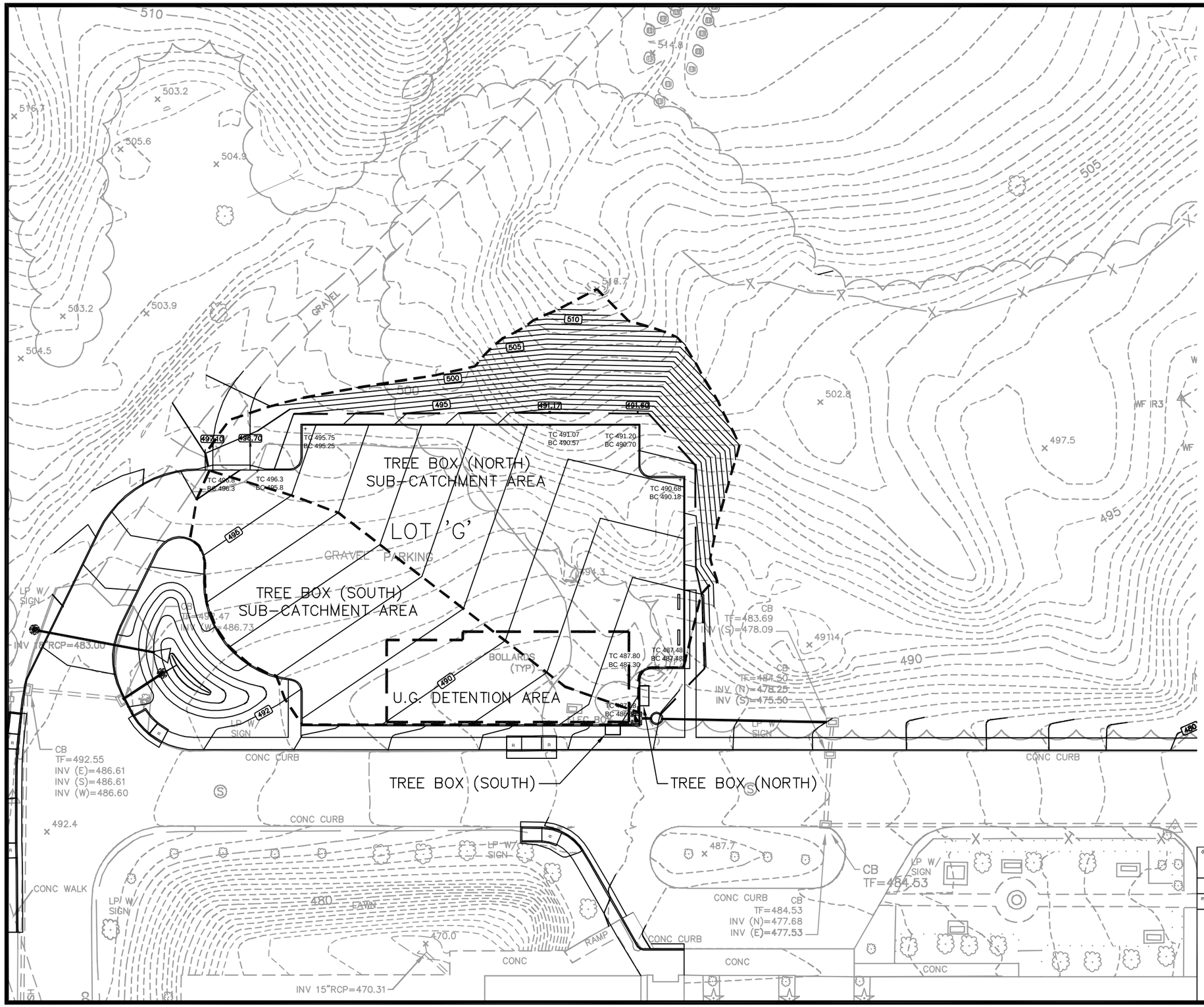
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no.
project no. BI-CTC-436

date 02/17/2015
scale 1" = 60'-0"
drawn by HSM
approved by MRP
drawing no. EC1.2



AREA DATA
WATERSHED AREA (NORTH) = 0.44 ACRES
IMPERVIOUS AREA = 0.30 ACRES (68%)
PERVIOUS AREA = 0.14 ACRES (32%)
WATERSHED AREA (SOUTH) = 0.21 ACRES
IMPERVIOUS AREA = 0.19 ACRES (90%)
PERVIOUS AREA = 0.02 ACRES (10%)

drawing title
TREE BOXES WATERSHED IN PARKING LOT 'G'

REVISIONS

mark	date	description

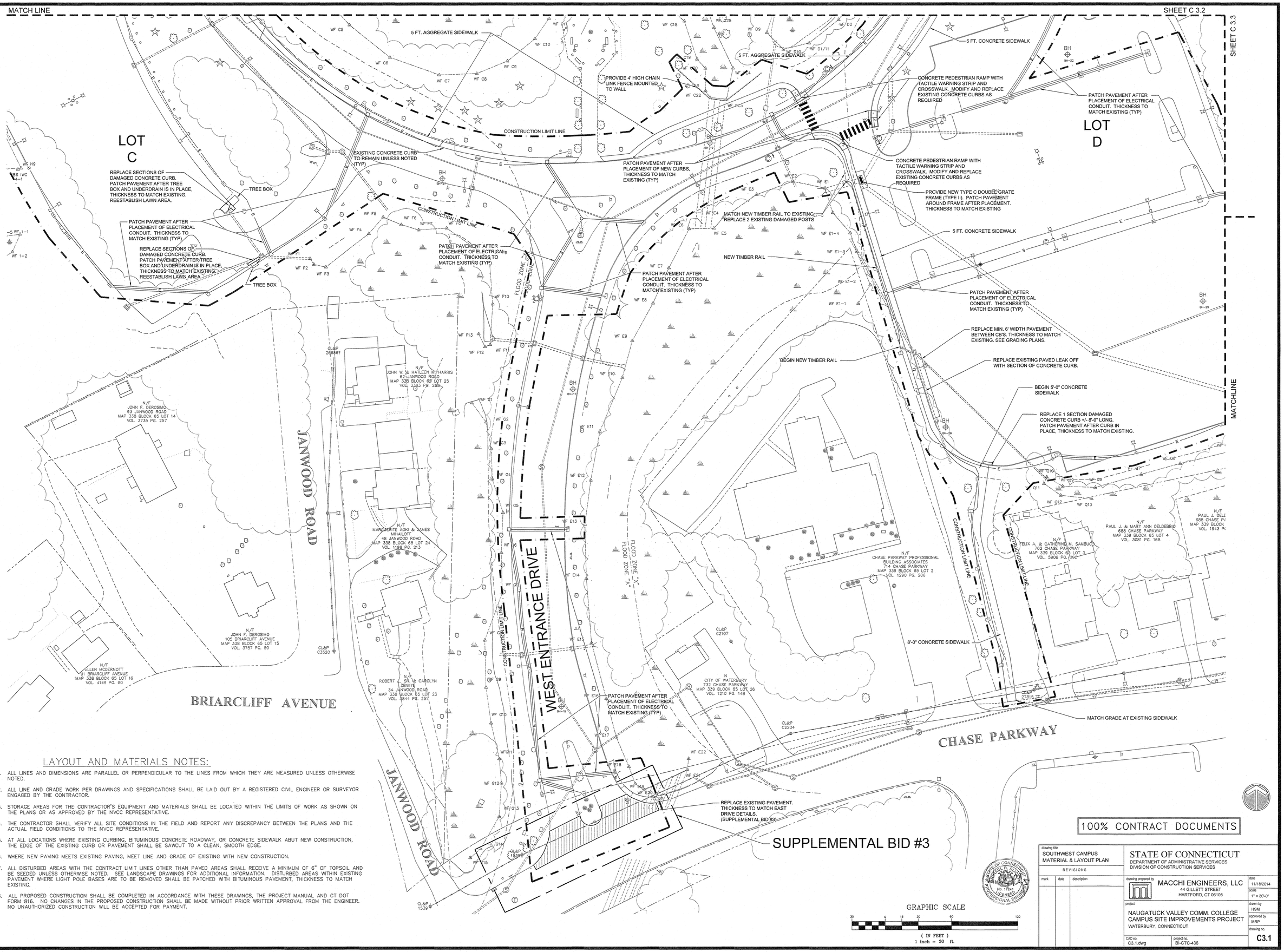
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no.
project no. BI-CTC-436

date 02/17/2015
scale 1" = 40'-0"
drawn by HSM
approved by MRP
drawing no. EC1.3



LAYOUT AND MATERIALS NOTES:

1. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE NOTED.
2. ALL LINE AND GRADE WORK PER DRAWINGS AND SPECIFICATIONS SHALL BE LAID OUT BY A REGISTERED CIVIL ENGINEER OR SURVEYOR ENGAGED BY THE CONTRACTOR.
3. STORAGE AREAS FOR THE CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE LOCATED WITHIN THE LIMITS OF WORK AS SHOWN ON THE PLANS OR AS APPROVED BY THE NVCC REPRESENTATIVE.
4. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCY BETWEEN THE PLANS AND THE ACTUAL FIELD CONDITIONS TO THE NVCC REPRESENTATIVE.
5. AT ALL LOCATIONS WHERE EXISTING CURBING, BITUMINOUS CONCRETE ROADWAY, OR CONCRETE SIDEWALK ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE.
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8. ALL PROPOSED CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THESE DRAWINGS, THE PROJECT MANUAL AND CT DOT FORM 816. NO CHANGES IN THE PROPOSED CONSTRUCTION SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. NO UNAUTHORIZED CONSTRUCTION WILL BE ACCEPTED FOR PAYMENT.

100% CONTRACT DOCUMENTS

drawing title: SOUTHWEST CAMPUS MATERIAL & LAYOUT PLAN

REVISIONS

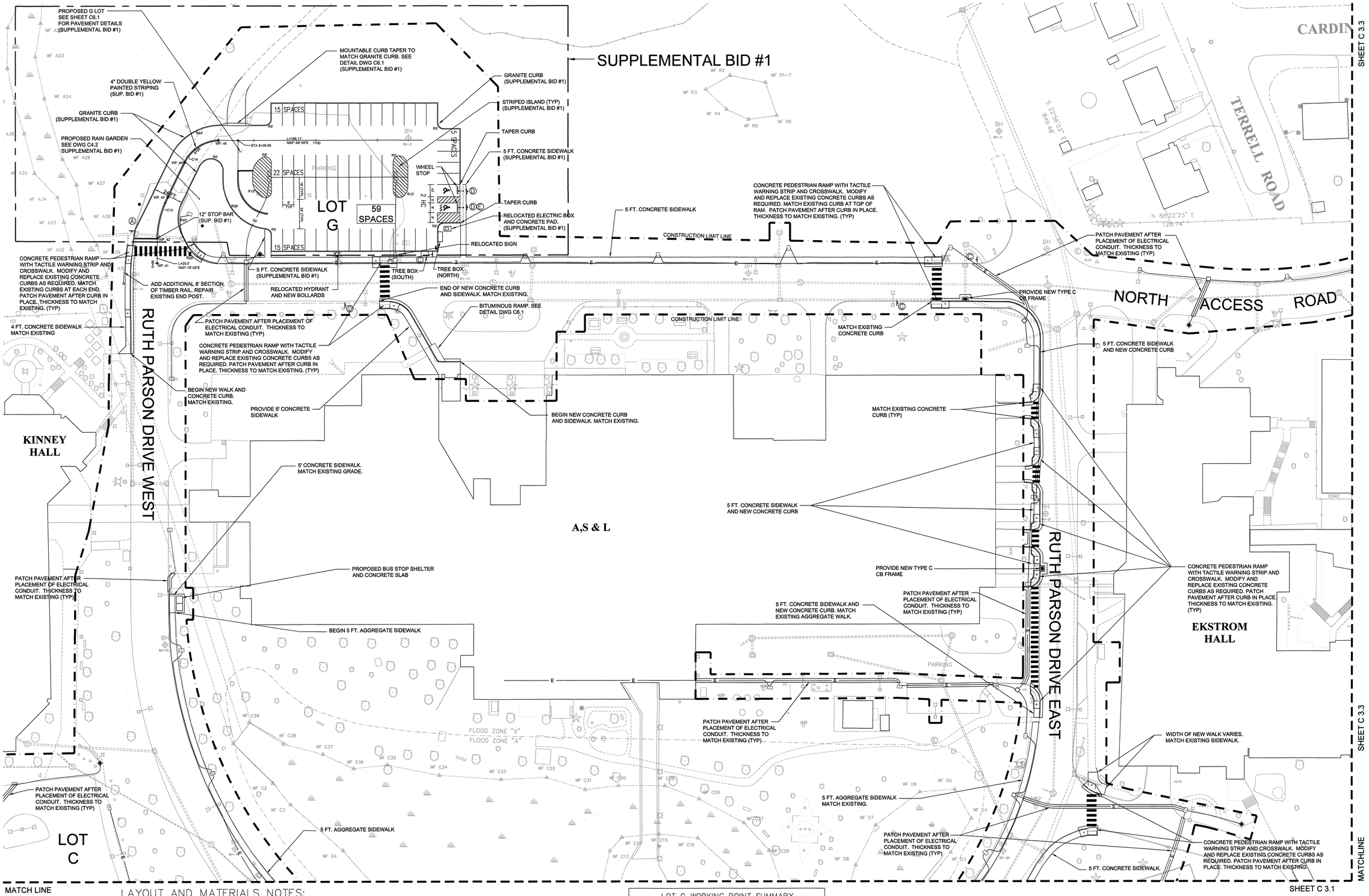
mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT

date	11/18/2014
scale	1" = 30'-0"
drawn by	HSM
approved by	MRP
drawing no.	C3.1
CAD no.	C3.1.dwg
project no.	BI-CTC-436



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LOT G WORKING POINT SUMMARY

W.P.	STATION	N.COORD.	E.COORD.	DESCRIPTION
41	5+00	761,410.74	911,228.47	START POINT
42	5+20.0	761,430.74	911,228.56	P.C. CURVE #13
43	5+55.09	761,464.42	911,237.31	P.T. CURVE #13
44	5+86.37	760,492.54	911,251.01	P.C. CURVE #14
45	6+20.85	761,510.48	911,278.51	P.T. CURVE #14

CURVE SUMMARY

	CURVE #13	CURVE #14
R =	78.52'	32.00'
L =	35.09'	34.48'
Δ =	25.61°	61.74°
T =	17.84'	19.13'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

100% CONTRACT DOCUMENTS

drawing title: NORTHWEST CAMPUS MATERIAL & LAYOUT PLAN

REVISIONS

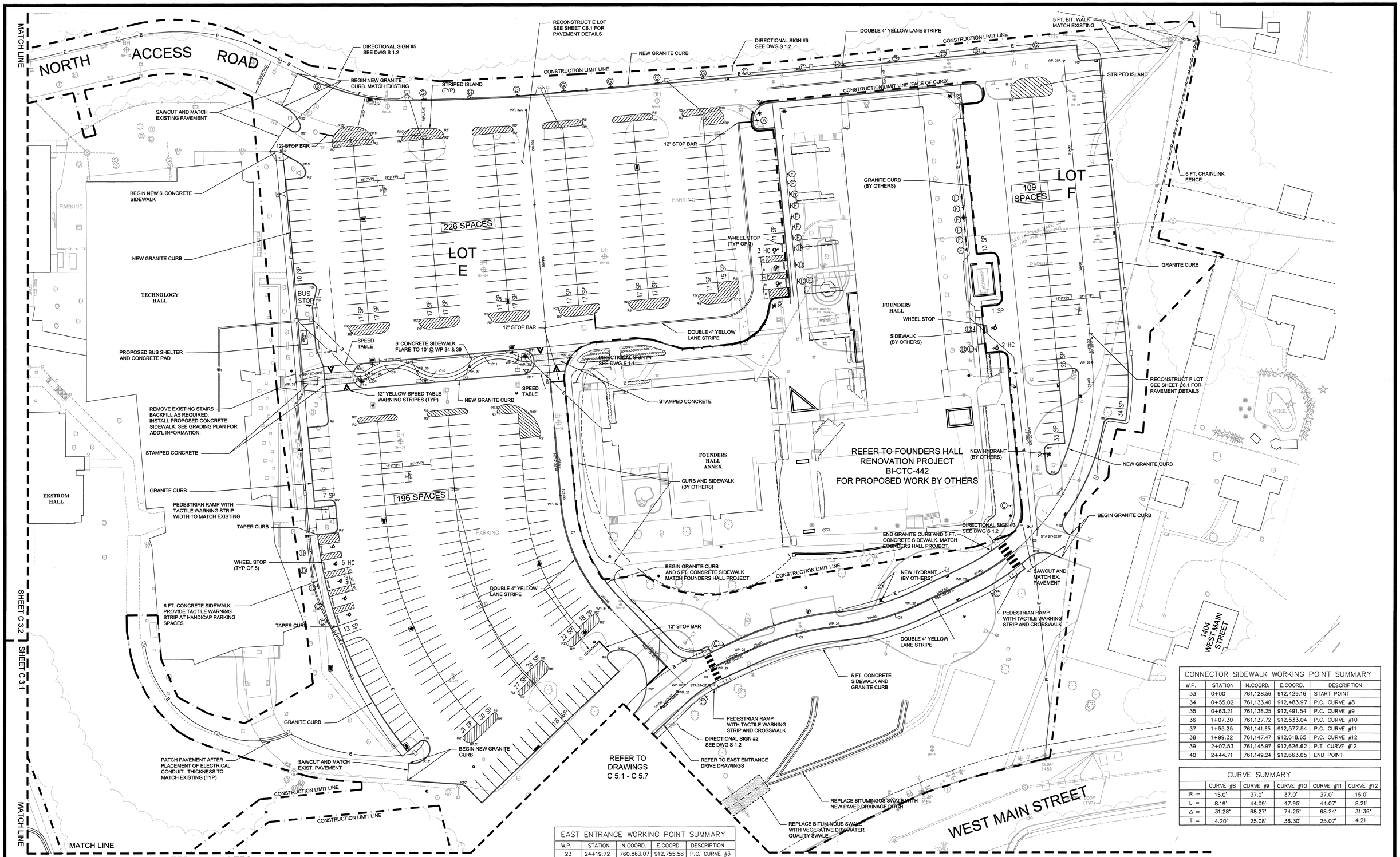
mark	date	description

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

date	1/15/2015
scale	1" = 30'-0"
drawn by	HSM
approved by	MRP
drawing no.	C3.2
CAD no.	C3.2.dwg
project no.	BI-CTC-436



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EAST ENTRANCE WORKING POINT SUMMARY

W.P.	STATION	N.COORD.	E.COORD.	DESCRIPTION
23	24+19.72	760,863.07	912,755.58	P.C. CURVE #3
24	24+56.43	760,883.67	912,785.77	P.T. CURVE #3
25	24+89.05	760,897.41	912,815.36	P.C. CURVE #4
26	25+71.35	760,918.85	912,894.41	P.C. CURVE #5
27	26+40.67	760,937.23	912,960.87	P.T. CURVE #5
28	26+88.21	760,957.69	913,003.78	P.C. CURVE #6
29	29+17.39	761,144.87	913,110.07	P.T. CURVE #6
29A	31+76.69	761,403.05	913,085.96	END PT. C.L. RD

CURVE SUMMARY

	CURVE #3	CURVE #4	CURVE #5	CURVE #6
R =	112.0'	242.0'	198.0'	188.0'
L =	36.72'	82.30'	69.32'	229.18'
Δ =	18.78°	19.49°	20.06°	69.85°
T =	18.52'	41.56'	35.02'	131.27'

*SEE C5.2 FOR REMAINDER OF EAST ENTRANCE LAYOUT

LOT E WORKING POINT SUMMARY

W.P.	STATION	N.COORD.	E.COORD.	DESCRIPTION
30	100+00	760,868.54	912,761.74	START POINT
31	100+93.37	760,935.35	912,696.53	P.C. CURVE #7
32	101+92.74	761,023.90	912,655.85	P.T. CURVE #7
32A	105+31.26	761,361.10	912,626.11	END PT. C.L. ROAD

CURVE SUMMARY

	CURVE #7
R =	145.0'
L =	99.38'
Δ =	39.27°
T =	51.73'

CONNECTOR SIDEWALK WORKING POINT SUMMARY

W.P.	STATION	N.COORD.	E.COORD.	DESCRIPTION
33	0+00	761,128.56	912,429.16	START POINT
34	0+55.02	761,133.40	912,483.97	P.C. CURVE #8
35	0+63.21	761,136.25	912,491.54	P.C. CURVE #9
36	1+07.30	761,137.72	912,533.04	P.C. CURVE #10
37	1+55.25	761,141.65	912,577.54	P.C. CURVE #11
38	1+99.32	761,147.47	912,618.65	P.C. CURVE #12
39	2+07.53	761,145.97	912,626.62	P.T. CURVE #12
40	2+44.71	761,149.24	912,663.65	END POINT

CURVE SUMMARY

	CURVE #8	CURVE #9	CURVE #10	CURVE #11	CURVE #12
R =	15.0'	37.0'	37.0'	37.0'	15.0'
L =	8.19'	44.09'	47.95'	44.07'	8.21'
Δ =	31.28°	68.27°	74.25°	68.24°	31.36°
T =	4.20'	25.08'	36.30'	25.07'	4.21

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

STATE OF CONNECTICUT PROFESSIONAL ENGINEER No. 17241 LICENSED

100% CONTRACT DOCUMENTS

drawing title: EAST CAMPUS MATERIAL & LAYOUT PLAN

REVISIONS

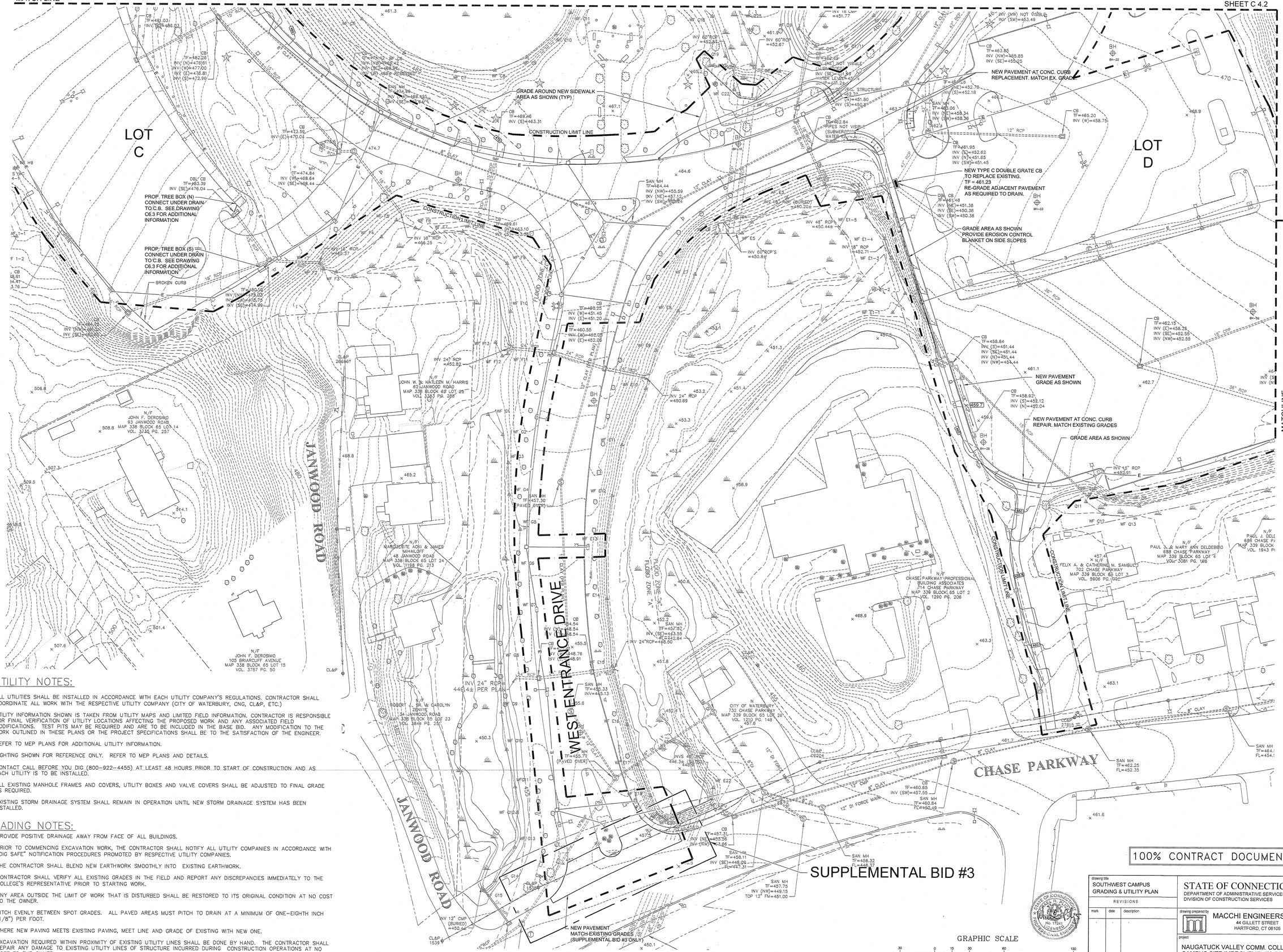
mark	date	description

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT

date	1/15/2015
scale	1" = 30'-0"
drawn by	HSM
approved by	MRP
drawing no.	C3.3
CAD no.	C3.3.dwg
project no.	BI-CTC-436



UTILITY NOTES:

1. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH EACH UTILITY COMPANY'S REGULATIONS. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE RESPECTIVE UTILITY COMPANY (CITY OF WATERBURY, CNG, CL&P, ETC.)
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3. REFER TO MEP PLANS FOR ADDITIONAL UTILITY INFORMATION.
4. LIGHTING SHOWN FOR REFERENCE ONLY. REFER TO MEP PLANS AND DETAILS.
5. CONTACT CALL BEFORE YOU DIG (800-922-4455) AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION AND AS EACH UTILITY IS TO BE INSTALLED.
6. ALL EXISTING MANHOLE FRAMES AND COVERS, UTILITY BOXES AND VALVE COVERS SHALL BE ADJUSTED TO FINAL GRADE AS REQUIRED.
7. EXISTING STORM DRAINAGE SYSTEM SHALL REMAIN IN OPERATION UNTIL NEW STORM DRAINAGE SYSTEM HAS BEEN INSTALLED.

GRADING NOTES:

1. PROVIDE POSITIVE DRAINAGE AWAY FROM FACE OF ALL BUILDINGS.
2. PRIOR TO COMMENCING EXCAVATION WORK, THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN ACCORDANCE WITH "DIG SAFE" NOTIFICATION PROCEDURES PROMOTED BY RESPECTIVE UTILITY COMPANIES.
3. THE CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING EARTHWORK.
4. CONTRACTOR SHALL VERIFY ALL EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE COLLEGE'S REPRESENTATIVE PRIOR TO STARTING WORK.
5. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
6. PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM OF ONE-EIGHTH INCH (1/8") PER FOOT.
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8. EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OF STRUCTURE INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
9. ALL PROPOSED TOP OF CURB ELEVATIONS ARE SIX INCHES (6") ABOVE BOTTOM OF CURB UNLESS SHOWN OTHERWISE.

100% CONTRACT DOCUMENTS

drawing title: SOUTHWEST CAMPUS GRADING & UTILITY PLAN

REVISIONS

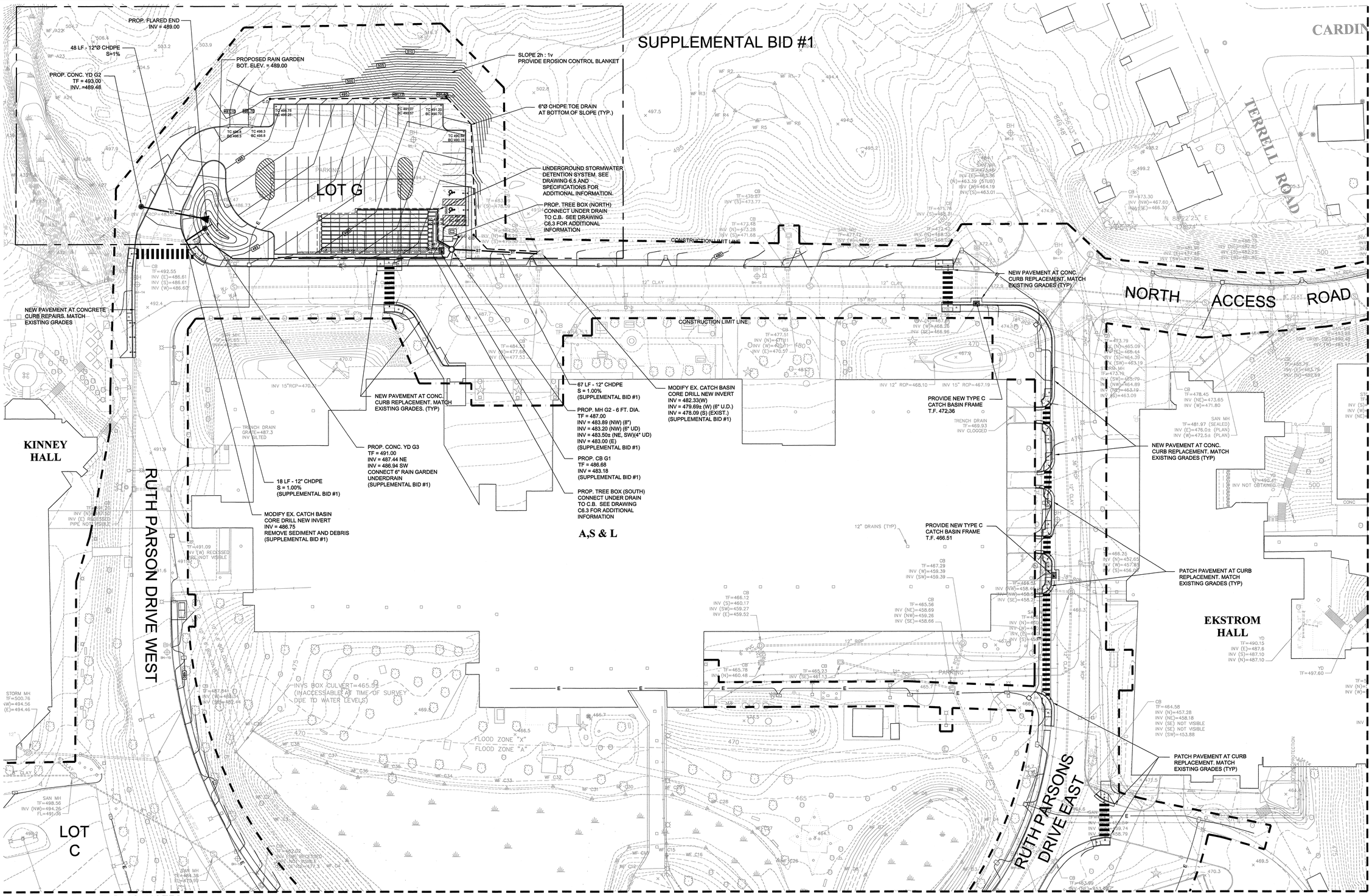
mark	date	description

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT

date	2/17/2015
scale	1" = 30'-0"
drawn by	HSM
approved by	MRP
drawing no.	C4.1
CAD no.	C4.1.dwg
project no.	BI-CTC-436



100% CONTRACT DOCUMENTS

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GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing title: NORTHWEST CAMPUS GRADING AND UTILITY PLAN

REVISIONS

mark	date	description
-	-	-

drawing prepared by: MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. C4.2.dwg
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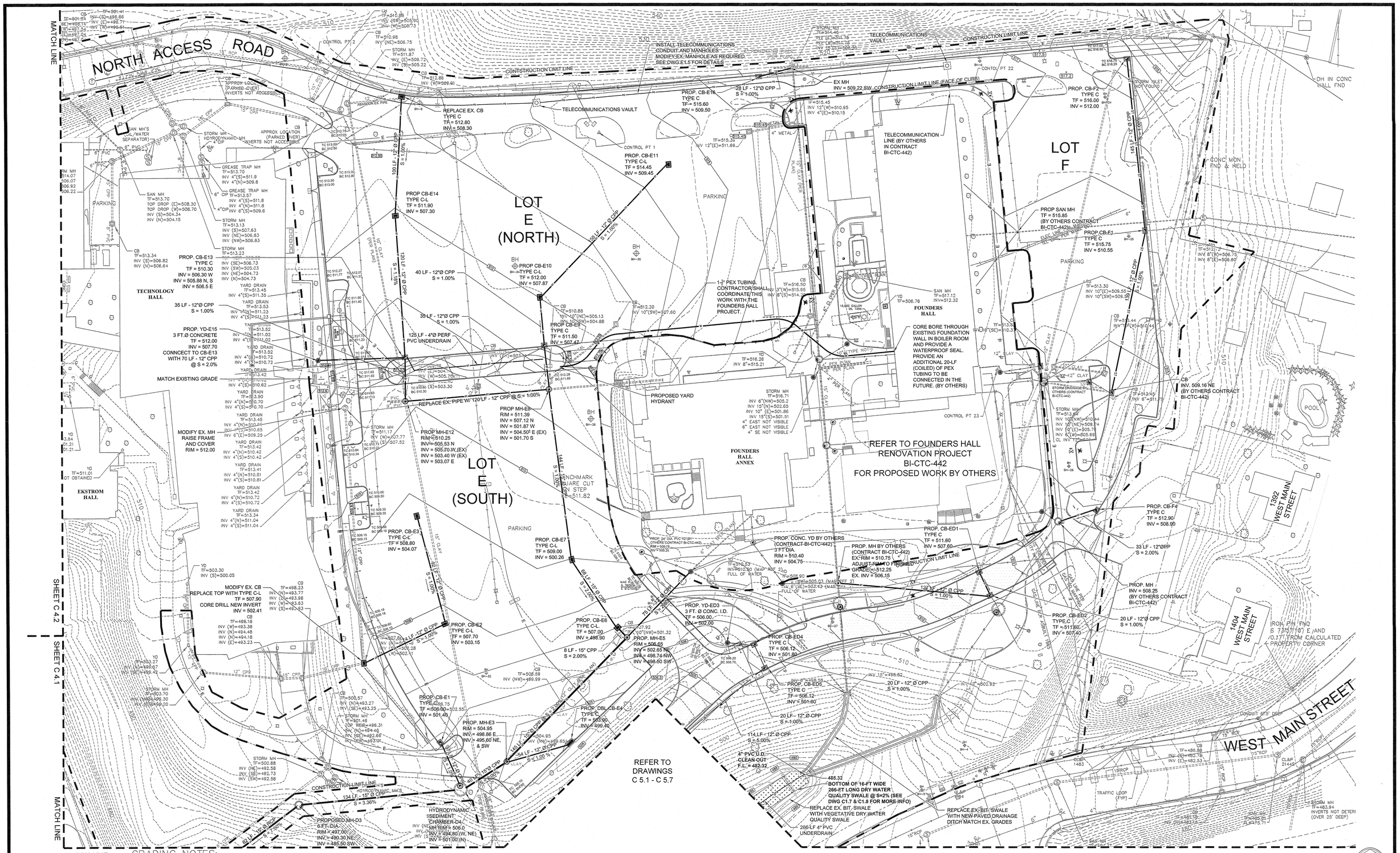

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STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

100% CONTRACT DOCUMENTS

drawing title: EAST CAMPUS GRADING & UTILITY PLAN

REVISIONS

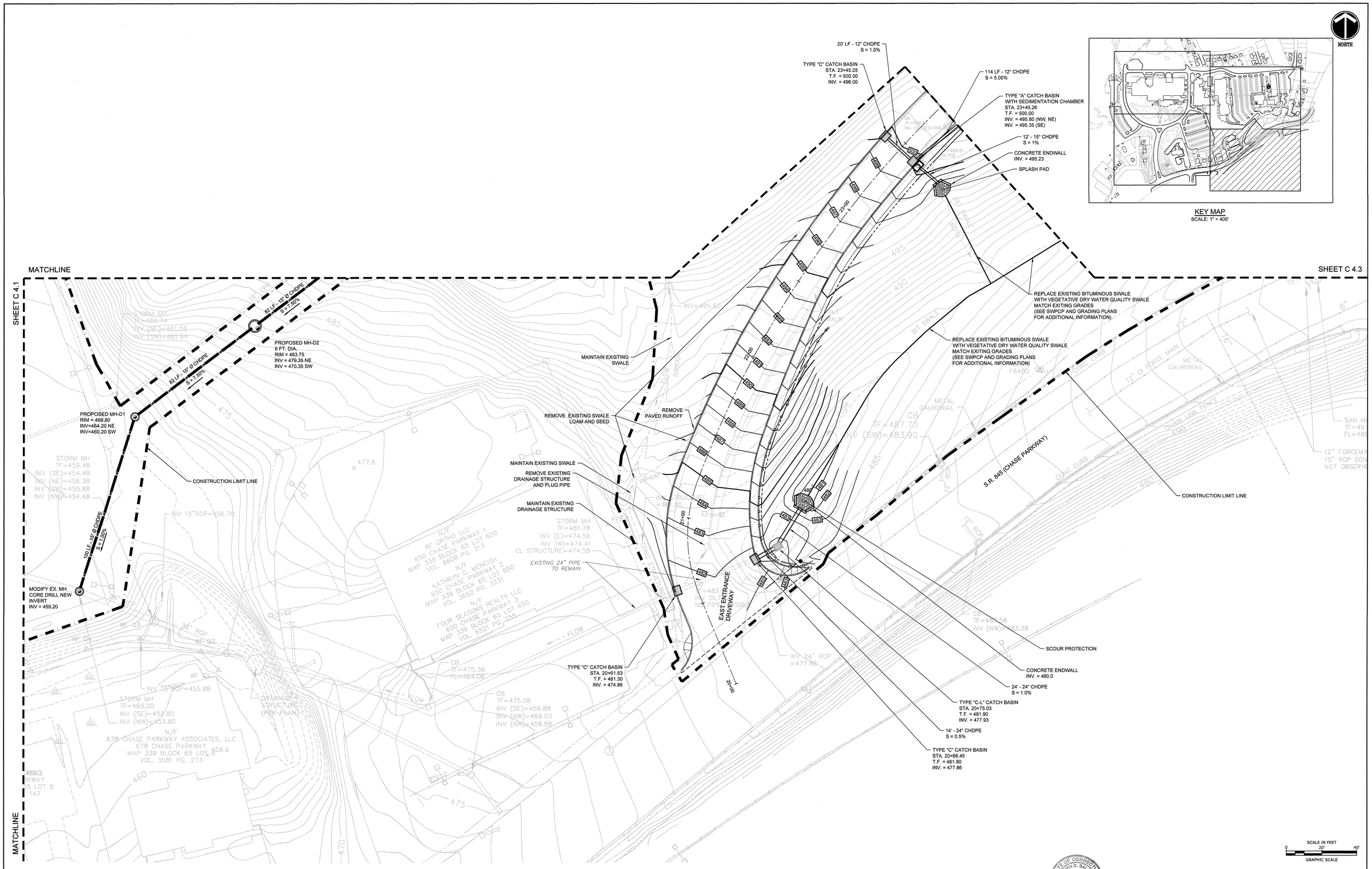
mark	date	description

drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT

CAD no. C4.3.dwg | project no. BI-CTC-436

date 1/15/2015 | scale 1" = 30'-0" | drawn by HSM | approved by MRP | drawing no. C4.3



100% CONTRACT DOCUMENTS

SEE DRAWINGS C1.7 AND C1.8 FOR ADDITIONAL GRADING AND STORM DRAINAGE ITEMS FOR THE DRY WATER QUALITY SWALE.

GRADING AND DRAINAGE PLAN NOTES:

1. BEARINGS AND NODE COORDINATES REFER TO THE CONNECTICUT COORDINATE SYSTEM (NAD 83) BASED UPON CONTROL POINT SHOWN ON DRAWING EC 1.
2. SITE DRIVEWAY AND PARKING LOT "E" LAYOUT SHOWN ON C3 SERIES PLANS.
3. TRAFFIC SIGNAL EQUIPMENT RELOCATION INFORMATION SHOWN ON TRAFFIC SIGNAL PERMIT PLAN, C5.6.
4. ROADWAY LIGHTING INSTALLATION INFORMATION SHOWN ON LIGHTING LAYOUT PLANS, E1.1 TO E1.3.

SURVEY NOTES:

1. SURVEY COMPLETED BY PEREIRA ENGINEERING, LLC, 1 ENTERPRISE DRIVE, SHELTON, CT. SURVEY CONFORMS TO HORIZONTAL ACCURACY CLASS A-2, VERTICAL ACCURACY CLASS V-3, AND TOPOGRAPHIC ACCURACY CLASS T-2 AND T-3. SEE SHEETS EC 1 TO EC 13.

Tighe&Bond
www.tighebond.com
213 Court Street
Suite 900
Middletown, CT 06457
(860) 704-4760

drawing title
EAST DRIVEWAY GRADING AND DRAINAGE PLAN

REVISIONS

mark	date	description
-	-	-

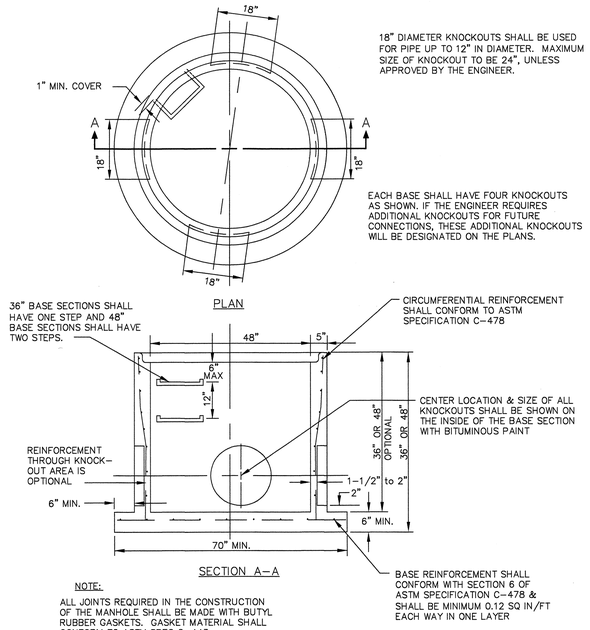
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

date	1/15/2015
scale	1"=20'
drawn by	CDY
approved by	JCB
drawing no.	C5.3
CAD no.	DRA-M1351-01.dwg
project no.	BI-CTC-436

Jan 15, 2015-8:53am Plotted By: CDY
Tighe & Bond: J:\M\M1351 NVCC\Drawings\Sheet\DRA-M1351-01.dwg

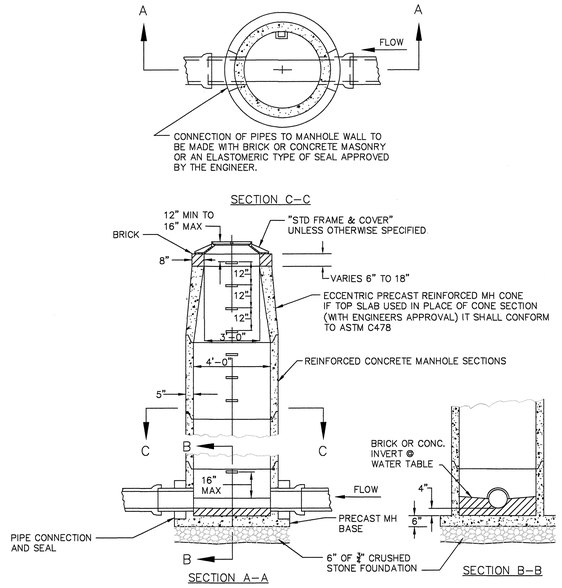


NOTE:

ALL JOINTS REQUIRED IN THE CONSTRUCTION OF THE MANHOLE SHALL BE MADE WITH BUTYL RUBBER GASKETS. GASKET MATERIAL SHALL CONFORM TO ASTM SPEC C-443

1 C6.3 MINIMUM REQUIREMENTS FOR 48" DIAMETER PRECAST MANHOLE BASE

NTS

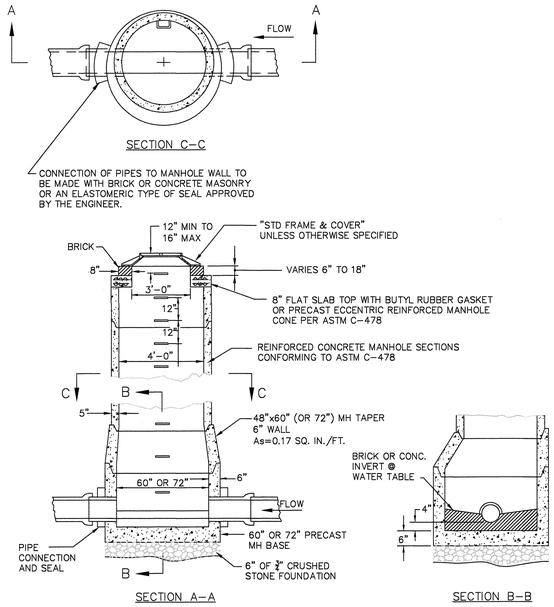


NOTES:

1. MAXIMUM SIZE OF PIPE TO BE INSTALLED IN A TYPE II MANHOLE TO BE 18"
2. MAXIMUM DEPTH OF R.C. PIPE MANHOLES WITH 5" THICK WALLS IS 30 FT.
3. BUTYL RUBBER GASKETS USED FOR JOINTS SHALL CONFORM TO ASTM SPEC C433
4. ALL PRECAST MANHOLE BASES SHALL COMPLY WITH THE "MINIMUM REQUIREMENTS FOR 48" DIAMETER PRECAST MANHOLE BASE"

2 C6.3 TYPE II MANHOLE TYPICAL PRECAST MANHOLE

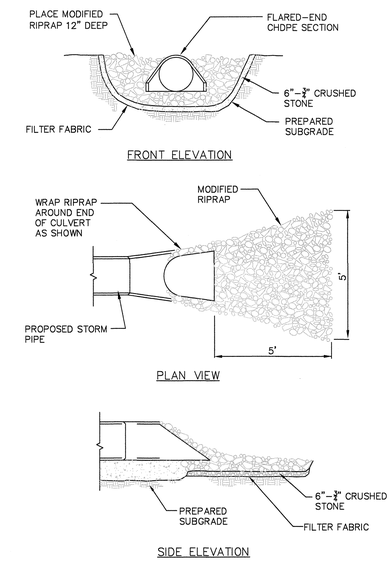
NTS



BUTYL RUBBER GASKETS USED FOR JOINTS SHALL CONFORM TO ASTM SPEC. C443

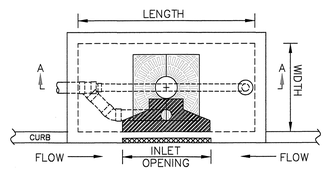
3 C6.3 TYPE VI MANHOLE TYPICAL PRECAST MANHOLE

NTS



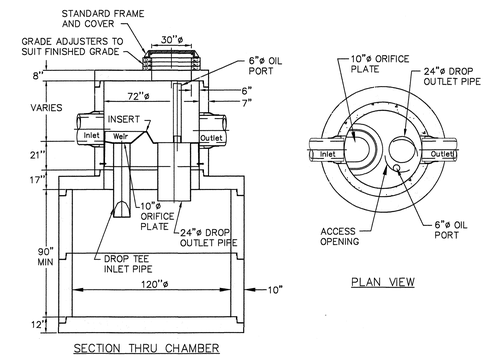
4 C6.3 TYPICAL RIPRAP PROTECTION

NTS



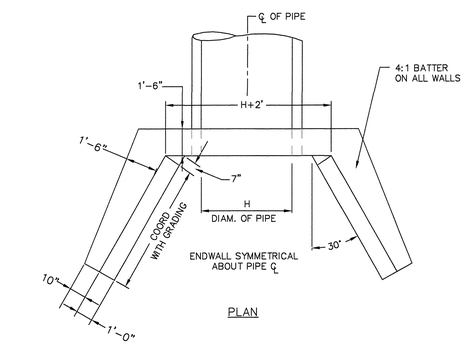
FILTERRA LOCATION	DESIGNATION (LENGTH x WIDTH)	INLET OPENING	BYPASS PIPE SIZE	BYPASS FLOW (CFS)	OUTLET PIPE SIZE
LOT 'C'	8' x 6'	2'-0"	8" PVC	1.57	8" PVC
LOT 'G' (NORTH)	8' x 4'	4'-0"	8" PVC	1.57	8" PVC
LOT 'G' (SOUTH)	6' x 4'	4'-0"	8" PVC	1.57	8" PVC

TREE BOX SIZES



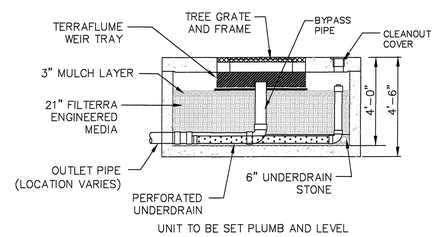
6 C6.3 PRECAST CONCRETE HYDRODYNAMIC SEDIMENT CHAMBER

NTS



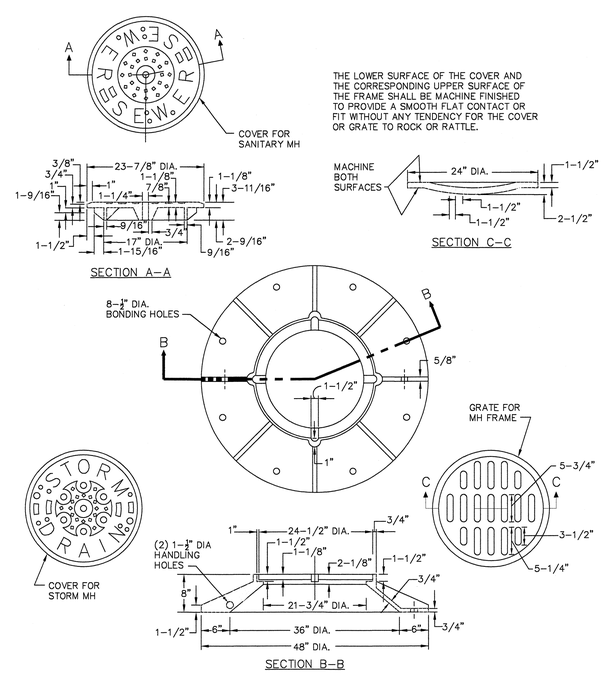
7 C6.3 STANDARD WING TYPE ENDWALL

NTS



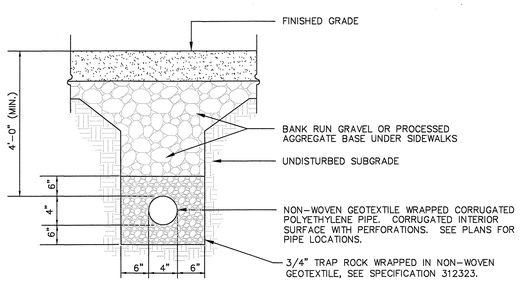
5 C6.3 TYPICAL TREE BOX

NTS



8 C6.3 STANDARD FRAME AND COVER

NTS



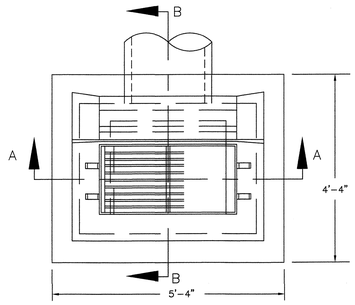
9 C6.3 4" Ø UNDER-DRAIN

NTS

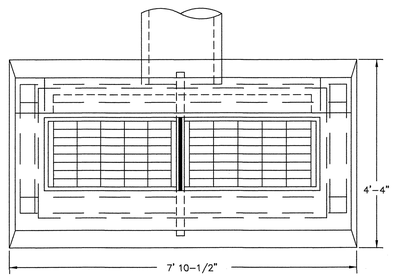
100% CONTRACT DOCUMENTS

STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER
No. 17241
1/15/2015

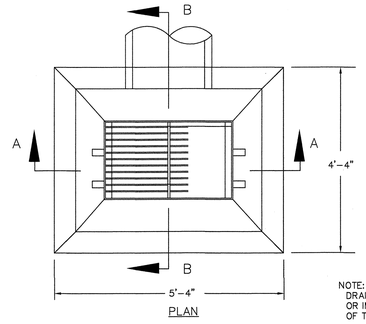
drawing title: STORM MANHOLE, END WALL AND FLARED END DETAILS	STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES		
REVISIONS			
mark / date / description	drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105	date: 1/15/2015	
		scale: AS NOTED	
	project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT	drawn by: HSM	
		approved by: MRP	
	CAD no. C6.3.dwg	project no. BI-CTC-436	drawing no. C6.3



PLAN

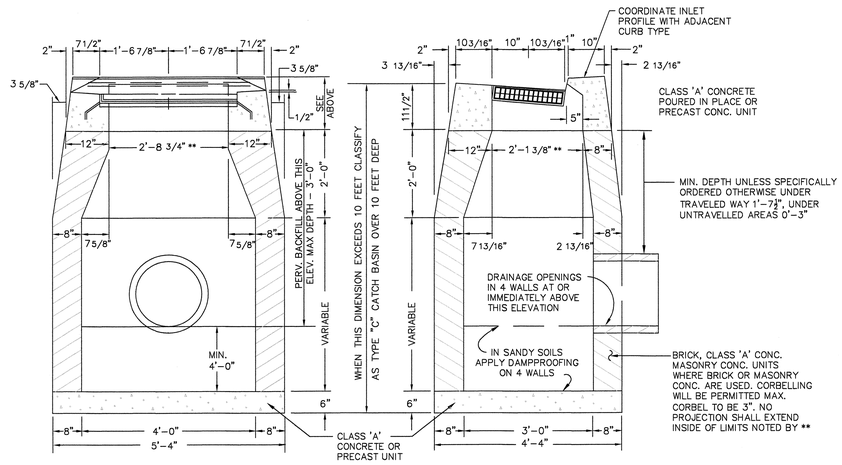


PLAN DOUBLE GRATE TYPE II



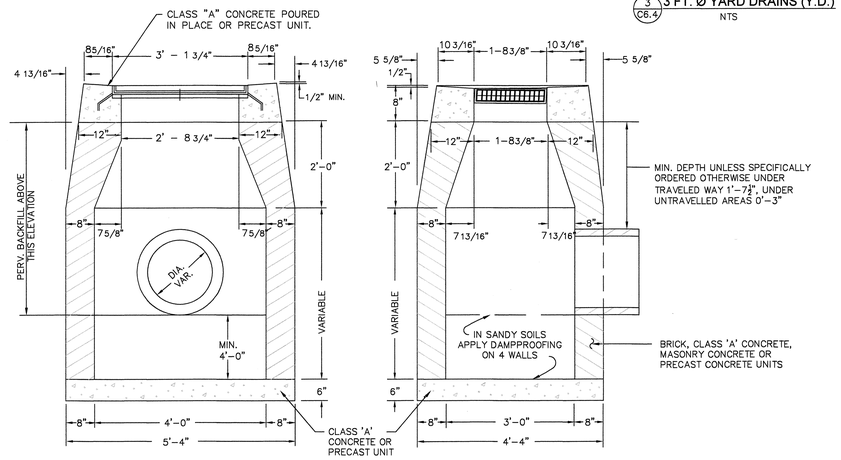
PLAN

NOTE:
DRAINAGE OPENINGS IN 4 WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF THE PERVIOUS BACKFILL

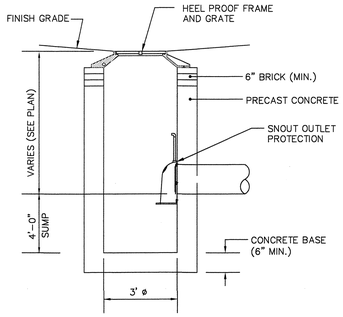


WHERE PRECAST CONC. UNIT IS USED FOR SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE PIPE OUTLETTING FROM THE CATCH BASIN

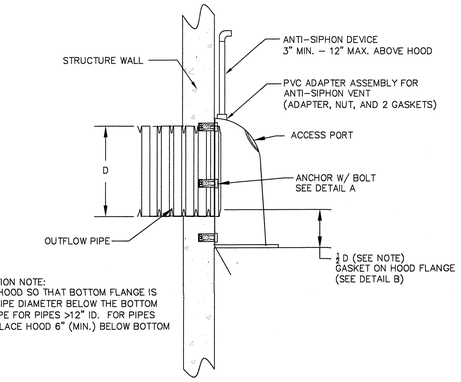
SECTION A–A SECTION B–B



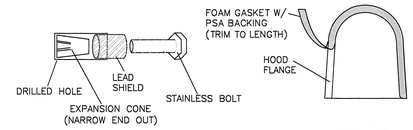
SECTION A–A SECTION B–B



3 / C6.4 **3 FT. Ø YARD DRAINS (Y.D.)**
NTS



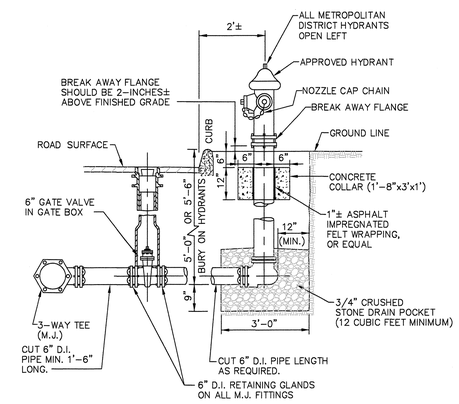
INSTALLATION NOTE:
POSITION HOOD SO THAT BOTTOM FLANGE IS 1/2 THE PIPE DIAMETER BELOW THE BOTTOM OF THE PIPE FOR PIPES >12" ID. FOR PIPES < 10" ID PLACE HOOD 6" (MIN.) BELOW BOTTOM OF PIPE.



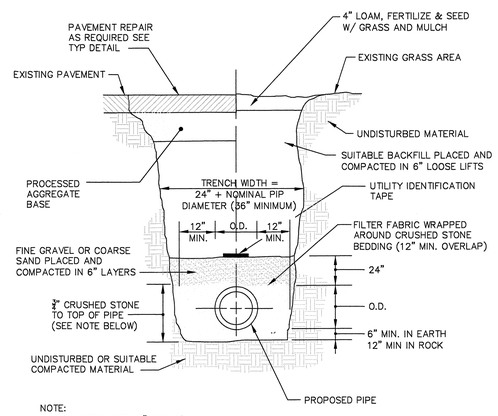
DETAIL A DETAIL B

NOTE: DETAIL TO BE PROVIDED AT DISCHARGE OF ALL CATCH BASINS

4 / C6.4 **DRAINAGE STRUCTURE OUTLET PROTECTION**
NTS

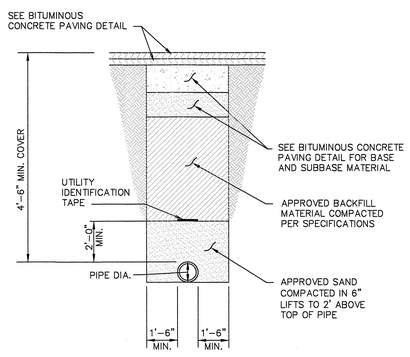


7 / C6.4 **FIRE HYDRANT ASSEMBLY DETAIL**
NTS

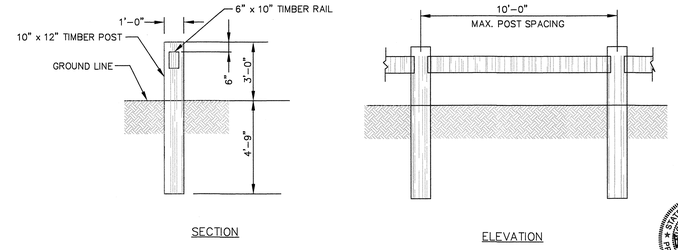


NOTE:
WHEN INSTALLING 10" PVC OR LARGER PIPE HAUNCHING SHALL EXTEND TO SPRING LINE

8 / C6.4 **STORM AND SANITARY SEWER TRENCH DETAIL**
NTS



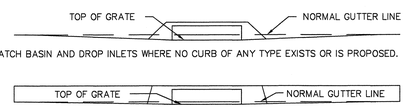
9 / C6.4 **1-1/2" PEX TUBING WATER TRENCH**
NTS



SECTION ELEVATION

10 / C6.4 **TIMBER RAIL DETAILS**
NTS

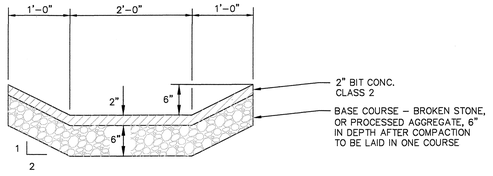
ALL CATCH BASINS AND CONCRETE YARD DRAINS, SHALL HAVE FOUR FOOT MIN. SUMP AND OUTLET PROTECTION



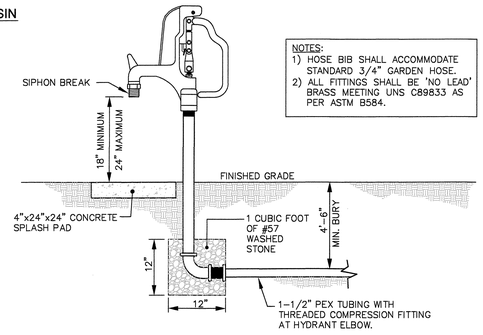
FOR CATCH BASIN AND DROP INLETS WHERE NO CURB OF ANY TYPE EXISTS OR IS PROPOSED.

1 / C6.4 **TYPE "C" CATCH BASIN**
NTS

2 / C6.4 **TYPE "C-L" CATCH BASIN**
NTS

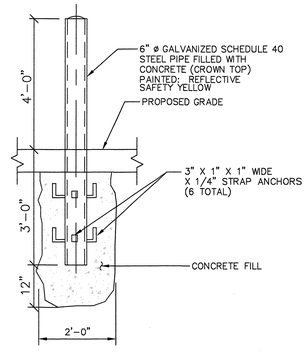


5 / C6.4 **PAVED DITCH DETAIL**
NTS



NOTES:
1) HOSE BIB SHALL ACCOMMODATE STANDARD 3/4" GARDEN HOSE.
2) ALL FITTINGS SHALL BE 'NO LEAD' BRASS MEETING UNS C89833 AS PER ASTM B584.

6 / C6.4 **YARD HYDRANT DETAIL**
NTS



11 / C6.4 **PIPE BOLLARD DETAIL**
NTS

100% CONTRACT DOCUMENTS

drawing title: STORM DRAINAGE, WATER AND MISC. DETAILS

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105

project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT

date	1/15/2015
scale	AS NOTED
drawn by	HSM
approved by	MRP
drawing no.	C6.4
CAD no.	C6.4.dwg
project no.	BI-CTC-436

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	ROB LEMIRE 860-464-1010 ROB.LEMIRE@ADS-PIPE.COM
ADS SALES REP:	ADAM HOLLENBACH 860-819-9483 ADAM.HOLLENBACH@ADS-PIPE.COM
PROJECT NO:	73024 REV1

ADVANCED DRAINAGE SYSTEMS, INC.

NAUGATUCK VALLEY COMMUNITY COLLEGE

WATERBURY, CT

STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740, SC-310, OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.

   STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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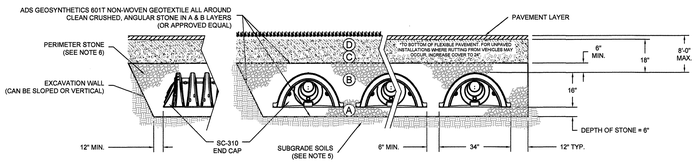
ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

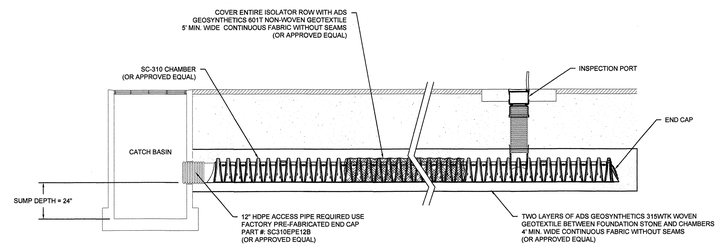
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
5. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
7. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



CHAMBER ISOLATOR ROW DETAIL
NTS

CONCEPTUAL LAYOUT

(116) STORMTECH SC-310 CHAMBERS (OR APPROVED EQUAL)
(20) STORMTECH SC-310 END CAPS (OR APPROVED EQUAL)
INSTALLED WITH 6" COVER STONE, 6" BASE STONE, 40% STONE VOID
INSTALLED SYSTEM VOLUME: 4,223 CF (PERIMETER STONE INCLUDED)
AREA OF SYSTEM: 3.434 FT²
PERIMETER OF SYSTEM: 257 FT

PROPOSED ELEVATIONS

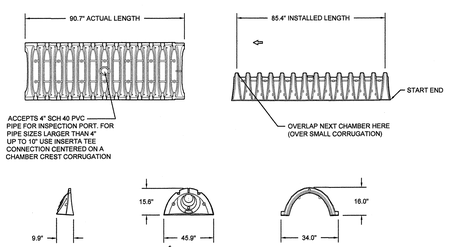
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	493.17
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	489.67
MINIMUM ALLOWABLE GRADE (TOP OF REINFORCED CONCRETE PAVEMENT):	488.67
TOP OF STONE:	485.67
TOP OF CHAMBER:	485.17
6" TOP MANIFOLD INVERT:	484.36
12" ISOLATOR ROW INVERT:	483.92
8" BOTTOM MANIFOLD INVERT:	483.89
BOTTOM OF CHAMBER:	483.84
UNDERDRAIN INVERT:	483.34
BOTTOM OF STONE:	483.34

NOTES

- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.

SC-310 TECHNICAL SPECIFICATION

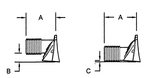
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"
CHAMBER STORAGE	14.7 CUBIC FEET
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET
WEIGHT	35.0 lbs.

*ASSUMES 6" ABOVE, BELOW, AND BETWEEN CHAMBERS



STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310EPE12B THE 12" STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25". BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
   A. INSPECTION PORTS (IF PRESENT)
      A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
      A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
      A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
      A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
      A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
   B. ALL ISOLATOR ROWS
      B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
      B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
         i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
         ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
      B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

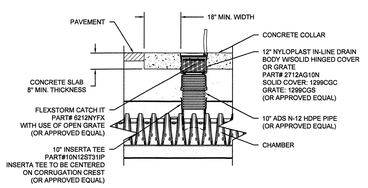
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
   A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
   B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
   C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

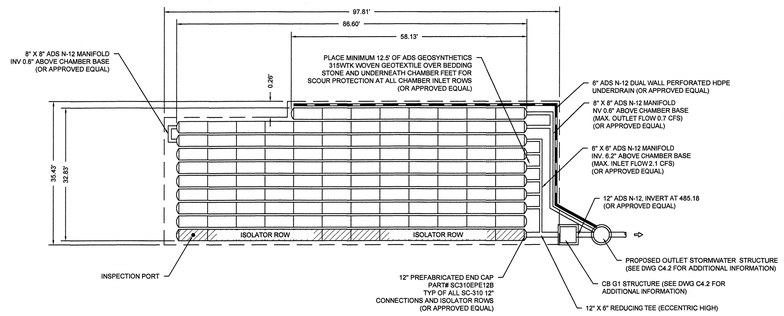
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

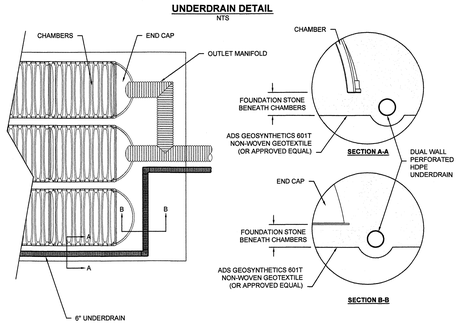
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



INSPECTION PORT DETAIL
NTS



UNDERDRAIN DETAIL
NTS



100% CONTRACT DOCUMENTS

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing title: UNDERGROUND STORM DRAINAGE CHAMBER DETAILS

REVISIONS

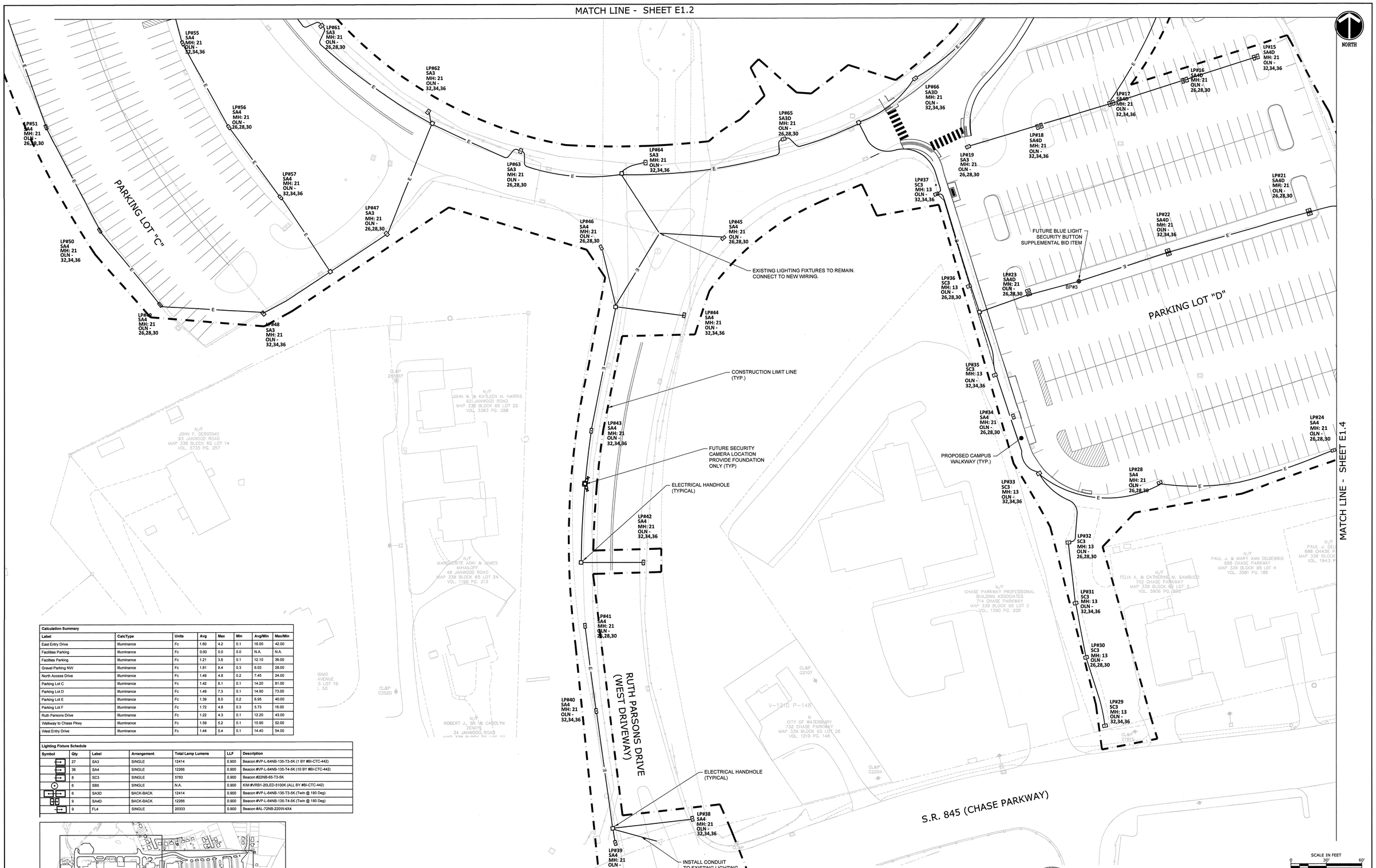
mark	date	description
-	-	-

STATE OF CONNECTICUT REGISTERED PROFESSIONAL ENGINEER No. 17241 LICENSED

drawing prepared by: MACCHI ENGINEERS, LLC, 44 GILLETT STREET, HARTFORD, CT 06105

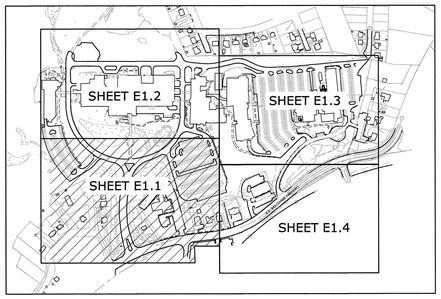
project: NAUGATUCK VALLEY COMM. COLLEGE CAMPUS SITE IMPROVEMENTS PROJECT, WATERBURY, CONNECTICUT

date	1/15/2015
scale	AS NOTED
drawn by	HSM
approved by	MRP
drawing no.	C6.5
CAD no.	C6.5.dwg
project no.	BI-CTC-436



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
East Entry Drive	Illuminance	Fc	1.60	4.2	0.1	16.00	42.00
Facilities Parking	Illuminance	Fc	0.00	0.0	0.0	N.A.	N.A.
Facilities Parking	Illuminance	Fc	1.21	3.6	0.1	12.10	36.00
Gravel Parking NW	Illuminance	Fc	1.81	8.4	0.3	6.03	28.00
North Access Drive	Illuminance	Fc	1.49	4.8	0.2	7.45	24.00
Parking Lot C	Illuminance	Fc	1.42	8.1	0.1	14.20	81.00
Parking Lot D	Illuminance	Fc	1.49	7.3	0.1	14.90	73.00
Parking Lot E	Illuminance	Fc	1.39	8.0	0.2	6.95	40.00
Parking Lot F	Illuminance	Fc	1.72	4.8	0.3	5.73	16.00
Ruth Parsons Drive	Illuminance	Fc	1.22	4.3	0.1	12.20	43.00
Walkway to Chase Pkwy	Illuminance	Fc	1.59	5.2	0.1	15.90	52.00
West Entry Drive	Illuminance	Fc	1.44	5.4	0.1	14.40	54.00

Lighting Fixture Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	27	SA3	SINGLE	12414	0.900	Beacon #VP-L-64NB-135-T3-5K (1 BY #BI-CTC-442)
	36	SA4	SINGLE	12266	0.900	Beacon #VP-L-64NB-135-T4-5K (10 BY #BI-CTC-442)
	8	SC3	SINGLE	5783	0.900	Beacon #22NB-65-T3-5K
	6	SB5	SINGLE	N.A.	0.900	KIM #VRB1-20LED-5100K (ALL BY #BI-CTC-442)
	6	SA3D	BACK-BACK	12414	0.900	Beacon #VP-L-64NB-135-T3-5K (Twin @ 180 Deg)
	9	SA4D	BACK-BACK	12266	0.900	Beacon #VP-L-64NB-135-T4-5K (Twin @ 180 Deg)
	9	FL4	SINGLE	20333	0.900	Beacon #AL-72NB-220W-4X4



KEY MAP
SCALE: 1" = 400'

LIGHTING FIXTURE KEYED NOTES

LP#39	LIGHTIING POLE NUMBER
SA4	LIGHTING FIXTURE LABEL
MH:21	LAMP TYPE
OLN-	PANELBOARD
26,28,30	CIRCUIT NUMBERS

ELECTRICAL LEGEND

- UNDERGROUND CONDUIT
- —E— HANDHOLE

LIGHTING PLAN NOTES:

1. EXISTING LIGHTING TO REMAIN IN OPERATION WITH TEMPORARY MEASURES UNTIL PROPOSED LIGHTING IS INSTALLED AND TESTED.
2. PROVIDE REFLECTIVE SIGNAGE ON FRONT SIDE OF EACH POLE INDICATING POLE NUMBER. COORDINATE NUMBERING WITH FOUNDERS HALL PROJ. NO. BI-CTC-442.
3. EXISTING ELECTRICAL MANHOLES, HANDHOLES AND CONDUIT SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH PROPOSED.
4. REFER TO DRAWING E1.1 FOR LIGHTING FIXTURE SCHEDULE.
5. TRENCHES TO FUTURE BLUE PHONE AND SECURITY CAMERA LOCATIONS TO HAVE TWO CONDUITS. SEE TYPICAL TRENCH DETAIL ON SHEET E1.5. (BASE BID)
6. BLUE PHONES SHALL BE A SUPPLEMENTAL BID ITEM.
7. ALL LIGHT POLES INSTALLED ADJACENT TO OR WITHIN PARKING/PAVED AREAS SHALL HAVE CONCRETE BASES ABOVE GROUND.

SURVEY NOTES:

1. SURVEY COMPLETED BY PEREIRA ENGINEERING, LLC, 1 ENTERPRISE DRIVE, SHELTON, CT. SURVEY CONFORMS TO HORIZONTAL ACCURACY CLASS A-2, VERTICAL ACCURACY CLASS V-3, AND TOPOGRAPHIC ACCURACY CLASS T-2 AND T-3. SEE SHEETS EC 1 TO EC 13.

STATE OF CONNECTICUT JOSEPH C. SALERNO LICENSED PROFESSIONAL ENGINEER

Tighe&Bond
www.tighebond.com
213 Court Street
Suite 900
Middletown, CT 06457
(860) 704-4760

100% CONTRACT DOCUMENTS

drawing title
CAMPUS LIGHTING PLAN

REVISIONS

mark	date	description
.	.	.

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

date	1/15/2015
scale	1"=30'
drawn by	ADM
approved by	JCB
drawing no.	E1.1
CAD no.	LIP-M1351-01.dwg
project no.	BI-CTC-436

Jan 16, 2015-12:00pm Plotted By: CDY
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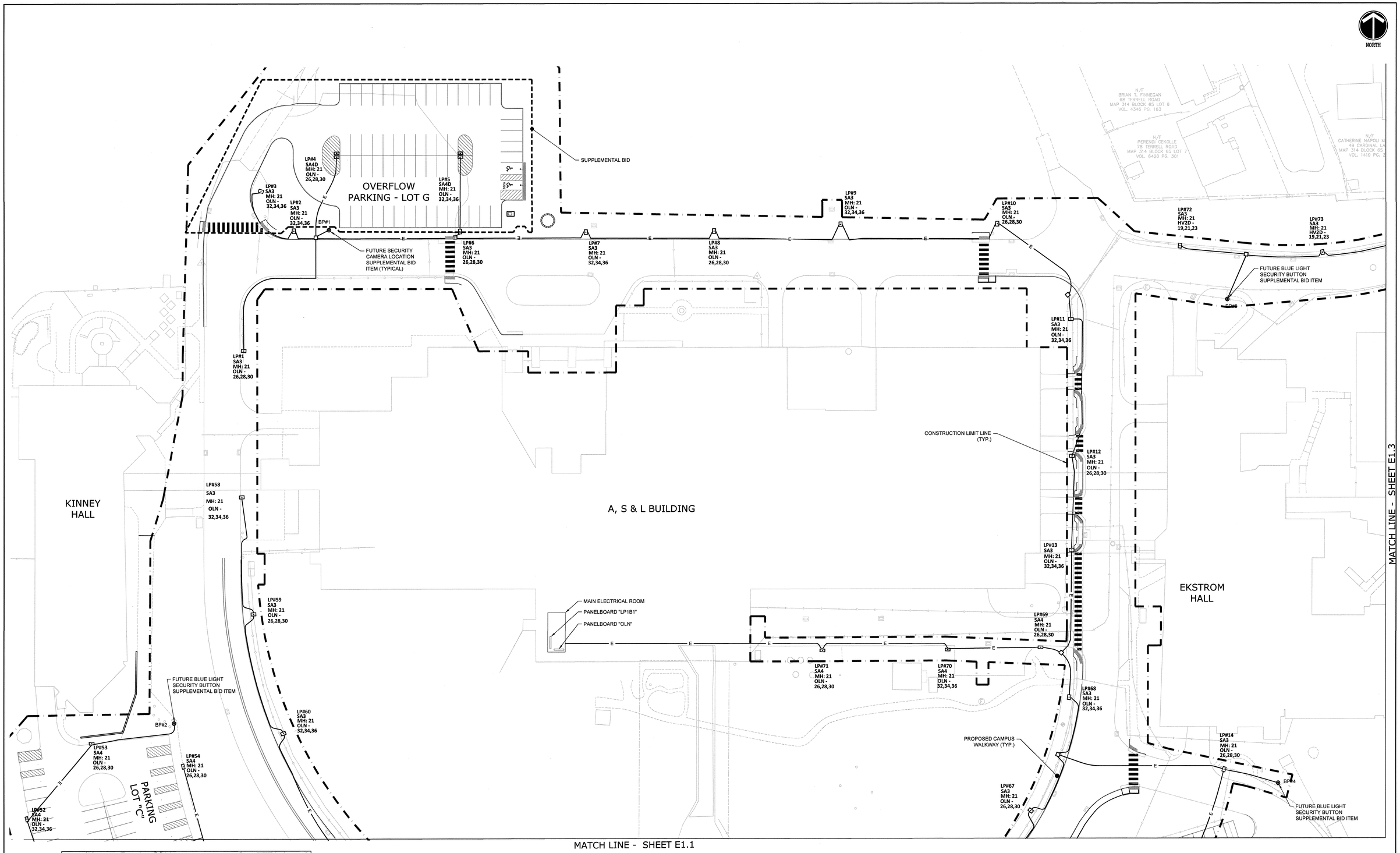

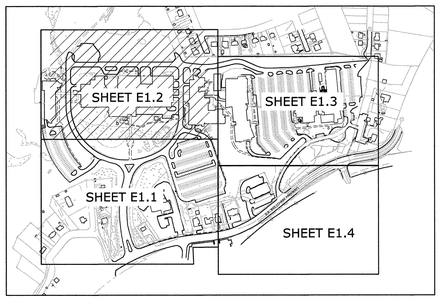

KEY MAP
SCALE: 1" = 400'

LIGHTING FIXTURE KEYED NOTES

LP#39	LIGHTIING POLE NUMBER
SA4	LIGHTING FIXTURE LABEL
MH:21	LAMP TYPE
OLN-	PANELBOARD
26,28,30	CIRCUIT NUMBERS

ELECTRICAL LEGEND

□	UNDERGROUND CONDUIT
—E—	HANDHOLE

LIGHTING PLAN NOTES:

1. EXISTING LIGHTING TO REMAIN IN OPERATION WITH TEMPORARY MEASURES UNTIL PROPOSED LIGHTING IS INSTALLED AND TESTED.
2. PROVIDE REFLECTIVE SIGNAGE ON FRONT SIDE OF EACH POLE INDICATING POLE NUMBER. COORDINATE NUMBERING WITH FOUNDERS HALL PROJ. NO. BI-CTC-442.
3. EXISTING ELECTRICAL MANHOLES, HANDHOLES AND CONDUIT SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH PROPOSED.
4. REFER TO DRAWING E1.1 FOR LIGHTING FIXTURE SCHEDULE.
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STATE OF CONNECTICUT
JOSEPH C. BARRETT
LICENSED PROFESSIONAL ENGINEER

Tighe&Bond
www.tighebond.com
213 Court Street
Suite 900
Middletown, CT 06457
(860) 704-4760

SCALE IN FEET
0 30' 60'
GRAPHIC SCALE

100% CONTRACT DOCUMENTS

drawing title
CAMPUS LIGHTING PLAN

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

date 1/15/2015
scale 1"=30'
drawn by ADM
approved by JCB
drawing no. E1.2

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. LIP-M1351-01.dwg
project no. BI-CTC-436

Jan 15, 2015-12:00pm Plotted By: CDY
Tighe & Bond, Inc. J:\M\M1351 INVCC\Drawing\Sheet\LIP-M1351-01.dwg

NORTH

MODIFY EXISTING TELECOMMUNICATION VAULT
(CORE OR BREAK INTO EXISTING VAULT SEAL OPENING)

TELECOMMUNICATION VAULT

FOUNDERS HALL TELECOMMUNICATION CONNECTION (BY #BI-CTC-442)

FUTURE BLUE LIGHT SECURITY BUTTON SUPPLEMENTAL BID ITEM

LP#74 SA3 MH: 21 HV2D - 19,21,23

LP#75 HV2D - 19,21,23 SA3 MH: 21

LP#76 HV2D - 19,21,23 SA4 MH: 21

LP#77 FL4 MH: 21 HV2D - 19,21,23

LP#78 FL4 MH: 21 HV2D - 19,21,23

LP#79 SA4 MH: 21 HV2D - 19,21,23

LP#80 HV2D - 19,21,23 SA4 MH: 21

LP#81 FL4 MH: 21 HV2D - 19,21,23

LP#82 FL4 MH: 21 HV2D - 19,21,23

LP#83 HV2D - 19,21,23 SA4 MH: 21

LP#84 FL4 MH: 21 HV2D - 19,21,23

LP#85 HV2D - 19,21,23 SA3 MH: 21

LP#86 HV2D - 19,21,23 SA3 MH: 21

LP#87 SA4 MH: 21 HV2D - 19,21,23

LP#88 SA4 MH: 21 HV2D - 19,21,23

LP#89 SA4 MH: 21 HV2D - 19,21,23

LP#90 SA3 MH: 21 HV2D - 19,21,23

LP#91 SA3 MH: 21 HV2D - 19,21,23

LP#92 SA3 MH: 21 HV2D - 19,21,23

LP#93 SA3 MH: 21 HV2D - 19,21,23

LP#94 SA4 MH: 21 HV2D - 19,21,23

LP#99 SA3D MH: 21 HV2D - 19,21,23

LP#100 SA3D MH: 21 HV2D - 19,21,23

LP#101C SA4 MH: 21 HV2D - 19,21,23

LP#103 SA4 MH: 21 HV2D - 19,21,23

LP#104 SA4 MH: 21 HV2D - 19,21,23

LP#105 SA4 MH: 21 HV2D - 19,21,23

LP#106 SB5 MH: 3.5 HV2D - 19,21,23

LP#107 FL4 MH: 21 HV2D - 19,21,23

LP#108 SB5 MH: 3.5 HV2D - 19,21,23

LP#109 SA3D MH: 21 HV2D - 19,21,23

LP#110 SB5 MH: 3.5 HV2D - 19,21,23

LP#111 SA3D MH: 21 HV2D - 19,21,23

LP#112 SB5 MH: 3.5 HV2D - 19,21,23

LP#113 SB5 MH: 3.5 HV2D - 19,21,23

LP#114 SA3D MH: 21 HV2D - 19,21,23

LP#115 SB5 MH: 3.5 HV2D - 19,21,23

LP#116 SA4 MH: 21 HV2D - 19,21,23

BP#6A

BP#6

CONSTRUCTION LIMIT LINE (TYP.)

TECHNOLOGY HALL

PANELBOARD "HV2D"

TECHNOLOGY HALL ELECTRICAL ROOM T513

FUTURE BLUE LIGHT SECURITY BUTTON SUPPLEMENTAL BID ITEM

FUTURE BLUE LIGHT SECURITY BUTTON SUPPLEMENTAL BID ITEM

CONDUIT TO FUTURE BLUE LIGHT SECURITY BUTTON SUPPLEMENTAL BID ITEM

PARKING LOT "E" NORTH

PARKING LOT "E" SOUTH

ELECTRICAL HANDHOLE (TYPICAL)

FUTURE ELECTRIC VEHICLE CHARGING STATIONS (3 SPACES)

MATCH LINE - SHEET E1.2

MATCH LINE - SHEET E1.4

MATCH LINE - SHEET E1.4

FOUNDERS HALL

LIGHTING FIXTURE INCLUDED IN FOUNDERS HALL PROJECT (BY #BI-CTC-442) (TYPICAL)

FUTURE BLUE LIGHT SECURITY BUTTON SUPPLEMENTAL BID ITEM (BY #BI-CTC-442)

PANELBOARD "12"

FOUNDER'S HALL ELECTRICAL ROOM

GENERATOR

WALKWAY LIGHTING (SA3/4) (BY OTHERS) REFER TO FOUNDER'S HALL RENOVATION PROJECT BI-CTC-442

FOUNDERS HALL ANNEX

BOLLARD WALKWAY LIGHTING (SB5) (BY OTHERS) REFER TO FOUNDER'S HALL RENOVATION PROJECT BI-CTC-442

PARKING LOT "F"

ELEC. LINE PER BASE WORK
TEL LINE PER BASE WORK

EAST ENTRANCE DRIVEWAY

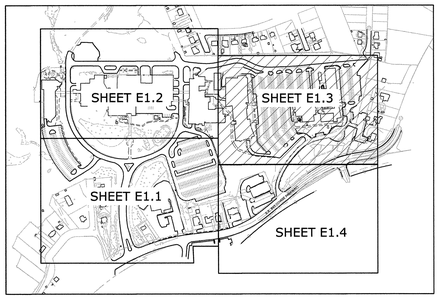
N/F
DIMI LLC
1404 WEST MAIN STREET
MAP 339 BLOCK 46 LOT 8
VOL. 5086 PG. 193

PROPOSED UNDERGROUND PRIMARY ELECTRIC, TELEPHONE AND CCTV SERVICE (HANDHOLE BY OTHERS) REFER TO FOUNDERS HALL RENOVATION PROJECT BI-CTC-442

FOUNDERS HALL PROJECT PROJ. #BI-CTC-442

FOUNDERS HALL PROJECT #BI-CTC-442 CONTRACT LIMIT LINE

SCALE IN FEET 0 30' 60'
GRAPHIC SCALE



KEY MAP
SCALE: 1" = 400'

LIGHTING FIXTURE KEYED NOTES

LP#39	LIGHTIING POLE NUMBER
SA4	LIGHTING FIXTURE LABEL
MH:21	LAMP TYPE
OLN-	PANELBOARD
26,28,30	CIRCUIT NUMBERS

ELECTRICAL LEGEND

□	UNDERGROUND CONDUIT
—E—	HANDHOLE

LIGHTING PLAN NOTES:

1. EXISTING LIGHTING TO REMAIN IN OPERATION WITH TEMPORARY MEASURES UNTIL PROPOSED LIGHTING IS INSTALLED AND TESTED.
2. PROVIDE REFLECTIVE SIGNAGE ON FRONT SIDE OF EACH POLE INDICATING POLE NUMBER. COORDINATE NUMBERING WITH FOUNDERS HALL PROJ. NO. BI-CTC-442.
3. EXISTING ELECTRICAL MANHOLES, HANDHOLES AND CONDUIT SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH PROPOSED.
4. REFER TO DRAWING E1.1 FOR LIGHTING FIXTURE SCHEDULE.
5. TRENCHES TO FUTURE BLUE PHONE AND SECURITY CAMERA LOCATIONS TO HAVE TWO CONDUITS. SEE TYPICAL TRENCH DETAIL ON SHEET E1.5 (BASE BID)
6. BLUE PHONES SHALL BE A SUPPLEMENTAL BID ITEM.
7. ALL LIGHT POLES INSTALLED ADJACENT TO OR WITHIN PARKING/PAVED AREAS SHALL HAVE CONCRETE BASES ABOVE GROUND.

SURVEY NOTES:

1. SURVEY COMPLETED BY PEREIRA ENGINEERING, LLC, 1 ENTERPRISE DRIVE, SHELTON, CT. SURVEY CONFORMS TO HORIZONTAL ACCURACY CLASS A-2, VERTICAL ACCURACY CLASS V-3, AND TOPOGRAPHIC ACCURACY CLASS T-2 AND T-3. SEE SHEETS EC 1 TO EC 13.

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213 Court Street
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(860) 704-4760

100% CONTRACT DOCUMENTS

drawing title
CAMPUS LIGHTING PLAN

REVISIONS

mark	date	description
-	-	-

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

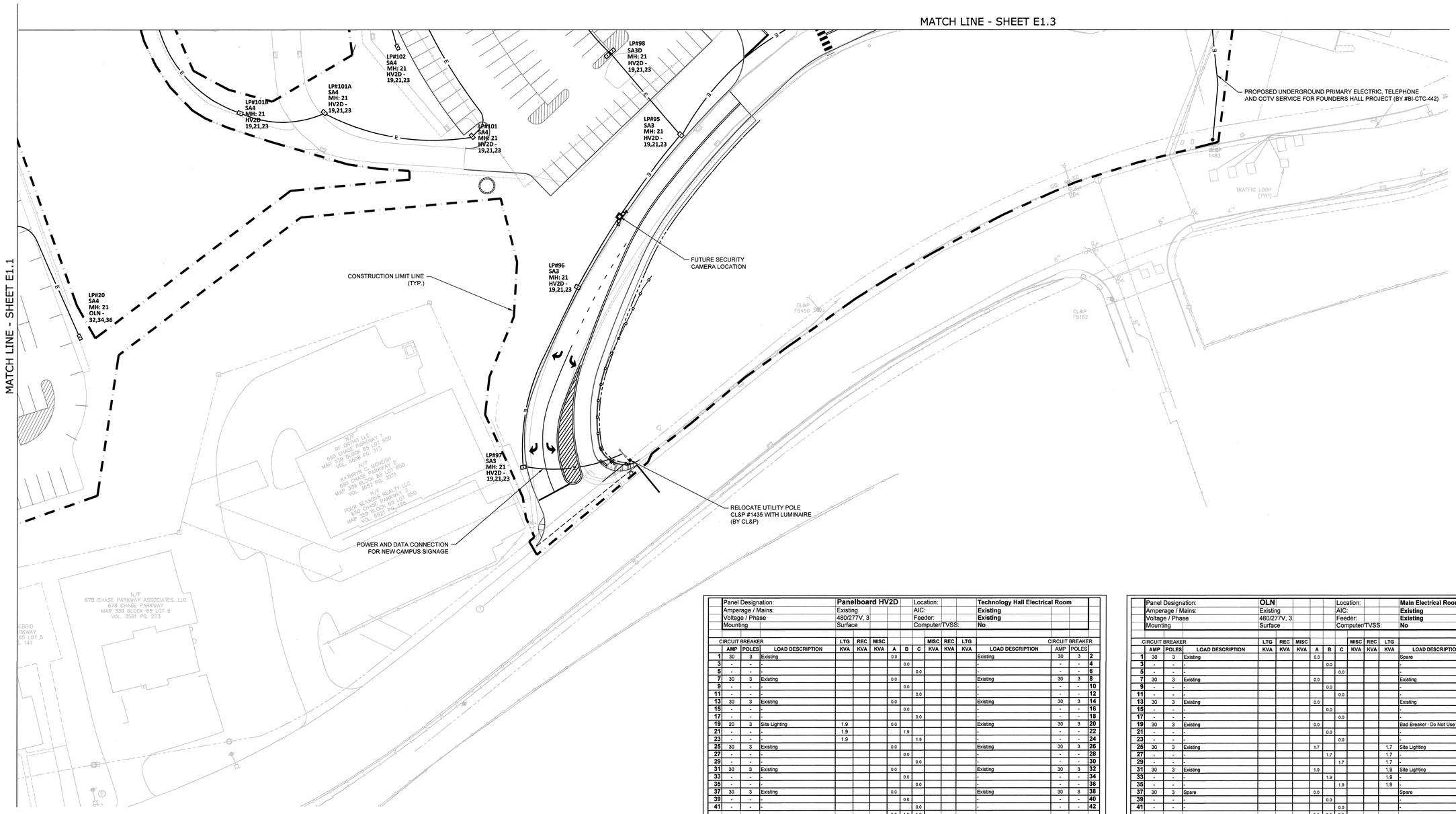
drawing prepared by
MACCHI ENGINEERS, LLC
44 GILLETT STREET
HARTFORD, CT 06105

project
NAUGATUCK VALLEY COMM. COLLEGE
CAMPUS SITE IMPROVEMENTS PROJECT
WATERBURY, CONNECTICUT

CAD no. LIP-M1351-01.dwg
project no. BI-CTC-436

date 1/15/2015
scale 1"=30'
drawn by ADM
approved by JCB
drawing no. E1.3

Jan 16, 2015-12:01pm Plotted By: CDY
Tighe & Bond, Inc. J:\MW\135\WVCC\Drawings\Sheet\LIP-M1351-01.dwg

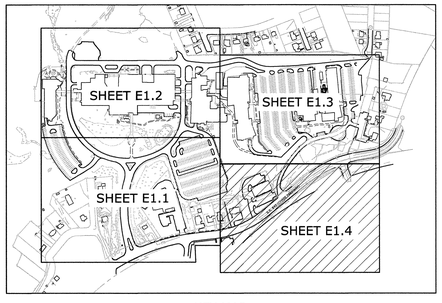


Panel Designation:	Panelboard HV2D	Location:	Technology Hall Electrical Room
Amperage / Mains:	Existing	AIC:	Existing
Voltage / Phase	480/277V, 3	Feeder:	Existing
Mounting	Surface	Computer/TVSS:	No

CIRCUIT BREAKER				LTG	REC	MISC				MISC	REC	LTG		CIRCUIT BREAKER		
	AMP	POLES	LOAD DESCRIPTION	KVA	KVA	KVA	A	B	C	KVA	KVA	KVA	LOAD DESCRIPTION	AMP	POLES	
1	30	3	Existing				0.0						Existing	30	3	2
3	-	-	-					0.0					-	-	-	4
5	-	-	-						0.0				-	-	-	6
7	30	3	Existing				0.0						Existing	30	3	8
9	-	-	-					0.0					-	-	-	10
11	-	-	-						0.0				-	-	-	12
13	30	3	Existing				0.0						Existing	30	3	14
15	-	-	-					0.0					-	-	-	16
17	-	-	-						0.0				-	-	-	18
19	20	3	Site Lighting	1.9			0.0						Existing	30	3	20
21	-	-	-	1.9				1.9					-	-	-	22
23	-	-	-	1.9					1.9				-	-	-	24
25	30	3	Existing				0.0						Existing	30	3	26
27	-	-	-					0.0					-	-	-	28
29	-	-	-						0.0				-	-	-	30
31	30	3	Existing				0.0						Existing	30	3	32
33	-	-	-					0.0					-	-	-	34
35	-	-	-						0.0				-	-	-	36
37	30	3	Existing				0.0						Existing	30	3	38
39	-	-	-					0.0					-	-	-	40
41	-	-	-						0.0				-	-	-	42
							0.0	1.9	1.9							
			Connected Load (KVA):	5.6	0.0	0.0				0.0	0.0	0.0		Poles Used:		42
			Computed Load * (KVA):	5.6	0.0	0.0				0.0	0.0	0.0				
			* per NEC 220-10													
			Total Connected Load (KVA):	5.6			Computed Load (A):			7						
			Total Computed Load * (KVA):	5.6			125% of Computed Load			8						

Panel Designation:	OLN	Location:	Main Electrical Room West Campus
Amperage / Mains:	Existing	AIC:	Existing
Voltage / Phase	480/277V, 3	Feeder:	Existing
Mounting	Surface	Computer/TVSS:	No

CIRCUIT BREAKER				LTG	REC	MISC				MISC	REC	LTG		CIRCUIT BREAKER		
	AMP	POLES	LOAD DESCRIPTION	KVA	KVA	KVA	A	B	C	KVA	KVA	KVA	LOAD DESCRIPTION	AMP	POLES	
1	30	3	Existing				0.0						Spare	30	3	2
3	-	-	-					0.0					-	-	-	4
5	-	-	-						0.0				-	-	-	6
7	30	3	Existing				0.0						Existing	30	3	8
9	-	-	-					0.0					-	-	-	10
11	-	-	-						0.0				-	-	-	12
13	30	3	Existing				0.0						Existing	50	3	14
15	-	-	-					0.0					-	-	-	16
17	-	-	-						0.0				-	-	-	18
19	30	3	Existing				0.0						Bad Breaker - Do Not Use	50	3	20
21	-	-	-					0.0					-	-	-	22
23	-	-	-						0.0				-	-	-	24
25	30	3	Existing				1.7					1.7	Site Lighting	30	3	26
27	-	-	-					1.7				1.7	-	-	-	28
29	-	-	-						1.7			1.7	-	-	-	30
31	30	3	Existing				1.9					1.9	Site Lighting	30	3	32
33	-	-	-					1.9				1.9	-	-	-	34
35	-	-	-						1.9			1.9	-	-	-	36
37	30	3	Spare				0.0						Spare	30	3	38
39	-	-	-					0.0					-	-	-	40
41	-	-	-						0.0				-	-	-	42
							3.5	3.5	3.5							
			Connected Load (KVA):	0.0	0.0	0.0				0.0	0.0	10.6		Poles Used:		42
			Computed Load * (KVA):	0.0	0.0	0.0				0.0	0.0	10.6				
			* per NEC 220-10													
			Total Connected Load (KVA):	10.6			Computed Load (A):			13						
			Total Computed Load * (KVA):	10.6			125% of Computed Load			16						



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CAD no. LIP-M1351-01.dwg
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date 1/15/2015
scale 1"=30'
drawn by ADM
approved by JCB
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Jan 16, 2015-12:01pm Plotted By: CDY
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