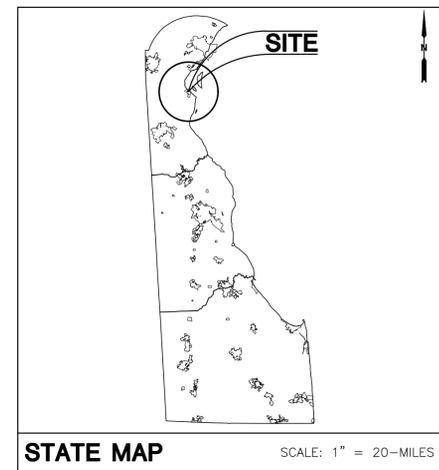
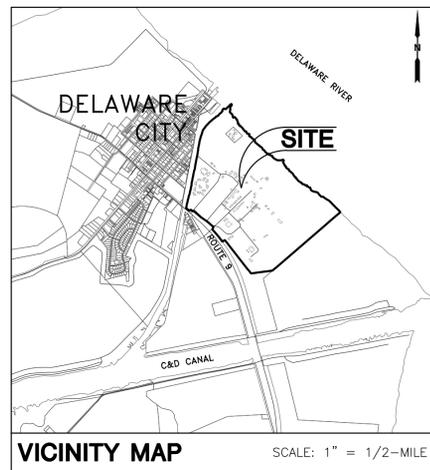


GOVERNOR BACON HEALTH CENTER TILTON PARKING LOT EXPANSION

DELAWARE HEALTH AND SOCIAL SERVICES
GOVERNOR BACON CAMPUS
NEW CASTLE COUNTY, DELAWARE 19706

DBF # 586B035.S01
FINAL PLAN
MAY, 2016



DATA COLUMN

TAX MAP ID: 1202300021
ACRES: 291.07
ZONING: SR-UDC - SUBURBAN RESERVE
EXISTING: SR-UDC - SUBURBAN RESERVE
PROPOSED IMPERVIOUS AREAS:
TOTAL = 14,200sf
PARKING PROPOSED: 24 SPACES
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83/STATE PLANE

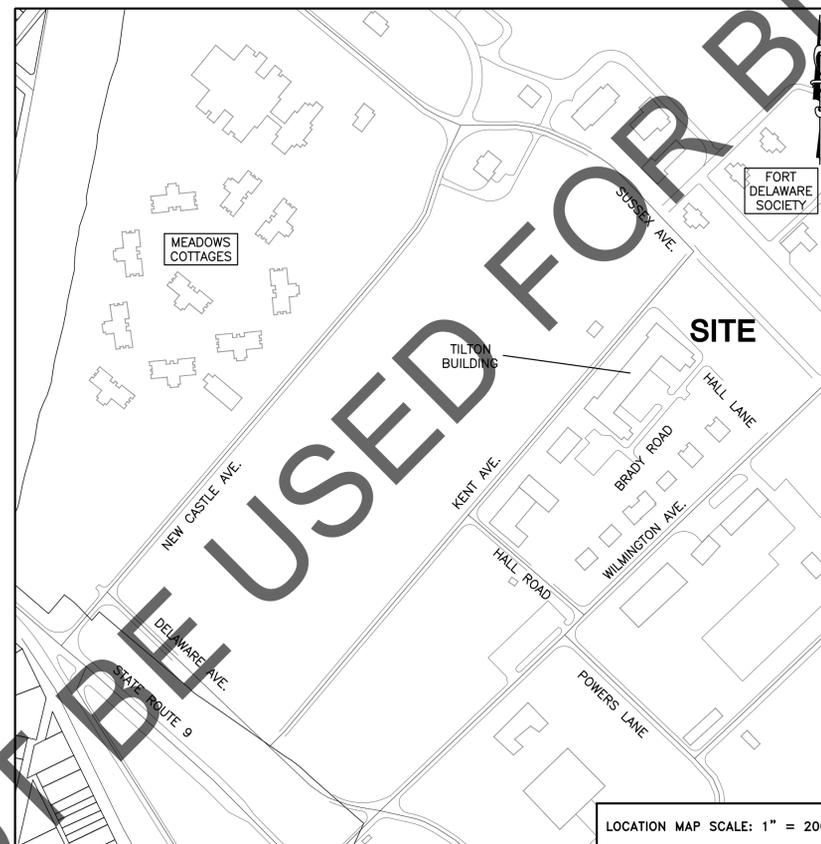
PROPERTY OWNER:
STATE OF DELAWARE
DEPARTMENT OF HEALTH AND SOCIAL SERVICES
1901 NORTH DUPONT HIGHWAY - MAIN BUILDING
NEW CASTLE, DE 19720
PHONE: 302-255-9335

ENGINEER:
DAVIS, BOWEN, & FRIEDEL, INC.
23 NORTH WALNUT STREET
MILFORD, DE 19963
PHONE: 302-424-1441
FAX: 302-424-0430

PROPERTY ADDRESS:
GOVERNOR BACON HEALTH CAMPUS
248 KENT AVE
DELAWARE CITY, DE 19706

GENERAL NOTES:

- MISS UTILITY OF DELMARVA SHALL BE NOTIFIED THREE CONSECUTIVE WORKING DAYS PRIOR TO EXCAVATION, AT 1-800-282-8555.
- EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. COMPLETENESS OR CORRECTNESS THEREOF IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITY COMPANIES INVOLVED IN ORDER TO SECURE THE MOST ACCURATE INFORMATION AVAILABLE AS TO UTILITY LOCATION AND ELEVATION. NO CONSTRUCTION AROUND OR ADJACENT TO UTILITIES SHALL BEGIN WITHOUT NOTIFYING THEIR OWNERS AT LEAST 48 HOURS IN ADVANCE. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE AND ANY DAMAGE DONE TO THEM DUE TO HIS/HER NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED AT THE CONTRACTOR'S EXPENSE. TO LOCATE EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MISS UTILITY OF DELMARVA.
- DELAWARE REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING THE EXCAVATION FOR STRUCTURES AND UTILITY LINES ON AND OFF SITE MUST BE REMOVED AND PROPERLY DISCARDED. ANY REMEDIAL ACTION REQUIRED IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM. ADDITIONAL COSTS WILL BE NEGOTIATED WITH THE OWNER.
- DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL WORK MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
- THE CONTRACTOR SHALL PROVIDE SEDIMENT CONTROL MEASURES TO PROTECT STOCKPILE AREAS AND STORAGE AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOPSOILED, SEEDED AND MULCHED TO THE SATISFACTION OF THE ENGINEER. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- HOT MIX ASPHALT SHALL BE INSTALLED IN ACCORDANCE WITH THE 2001 DELDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, INCLUDING ALL SUPPLEMENTAL SPECIFICATIONS.
- ALL DISTURBED AREAS NOT COVERED WITH IMPERVIOUS MATERIAL, SHALL BE TOPSOILED (6" MINIMUM), FERTILIZED, SEEDED AND MULCHED.
- DESIGN, FABRICATION, AND INSTALLATION OF ALL PERMANENT SIGNING SHALL BE AS OUTLINED IN THE 2011 DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
- FOR FINAL PERMANENT PAVEMENT MARKINGS, EPOXY RESIN PAINT SHALL BE REQUIRED FOR LONG LINE STRIPING AND THERMO WILL BE REQUIRED FOR SHORT LINE STRIPING, I.E. SYMBOLS/LEGENDS.
- ALL TRAFFIC CONTROL DEVICES SHALL BE IN NEW OR REFURBISHED CONDITION, SHALL COMPLY WITH THE 2011 DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION), AND SHALL BE NCHRP - 350 APPROVED AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED IN GOOD CONDITION FOR DURATION OF USE.
- BREAKAWAY POSTS SHALL BE USED WHEN INSTALLING ALL SIGNS. DETAIL CAN BE FOUND IN DELDOT'S STANDARD CONSTRUCTION DETAILS.
- PLAN LOCATION AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- CONCRETE SHALL BE PLACED IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATIONS.
- BOUNDARY AND TOPOGRAPHIC SURVEY WAS PERFORMED BY DAVIS, BOWEN & FRIEDEL, INC.
- CONTRACTOR SHALL PROVIDE STAKEOUT NECESSARY FOR THE INSTALLATION OF UTILITIES, STORM DRAINS, PAVING AND ALL OTHER SITE WORK INCLUDED IN THESE PLANS. ALL STAKEOUT WORK IS TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE.
- ACCORDING TO FEMA FLOOD INVENTORY MAP #10003C0160J, DATED JANUARY 17, 2007, THE SITE IS NOT LOCATED WITHIN THE 100 YEAR FLOOD PLAIN.
- WETLANDS DO NOT EXIST ON THIS SITE PER NWI.
- BUILDING IS TO REMAIN OPEN DURING ALL PHASES OF PROJECT. CONTRACTOR TO PROVIDE UNIMPEDED ACCESS AT ALL TIMES.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO WEEKS PRIOR TO THE START OF CONSTRUCTION AND SHALL APPRISE AND COORDINATE DURING ALL PHASES OF CONSTRUCTION:
DAVIS, BOWEN & FRIEDEL, INC. ...302-424-1441
FACILITIES MANAGEMENT302-744-1176
DNREC302-739-9921
DHSS302-255-4429



SHEET INDEX

TITLE SHEET	CN-01
PAVEMENT REHABILITATION OVERVIEW PLAN	OV-01
EXISTING CONDITIONS / DEMOLITION PLAN	D-01 - D-02
SITE PLAN	C-01 - C-02
EROSION AND SEDIMENT CONTROL PLAN	ES-01
EROSION AND SEDIMENT CONTROL PLAN DETAILS	ES-02 - ES-03
GRADING PLAN	G-01
CONSTRUCTION DETAILS	DT-01



DAVIS, BOWEN & FRIEDEL, INC.
ARCHITECTS, ENGINEERS & SURVEYORS

(302) 424-1441

	EXISTING	PROPOSED
BOUNDARY LINE	---	---
ADJACENT PROPERTY OWNER	---	---
CONTOUR ELEVATION AND LABEL	---33---	---
CATCH BASIN, STORM PIPE, STORM MANHOLE	□	□
SANITARY SEWER MANHOLE, PIPE, FLOW ARROW, PIPE SIZE	● Ex-12SS →	□
SEWER CLEAN-OUT	⊙	□
WATER VALVE	⊕	□
GAS MANHOLE, GAS VALVE	⊙	□
UTILITY POLE AND GUY WIRES, TELEPHONE	⊕	□
SIGN, POSTS	⊕	□
EXISTING SIDEWALK	▨	▨
TREES	⊙	⊙
PAVEMENT	▨	▨
PAVEMENT TO BE REMOVED	▨	▨
BUILDING	▭	▭
FENCE	×	×

	PROPOSED
CATCH BASIN, STORM PIPE, STORM MANHOLE, LABELS	□
SIGN	⊕
PAVEMENT / FULL DEPTH	▨
PAVEMENT REHABILITATION	▨
SIDEWALK	▨
PARKING COUNT IDENTIFICATION	9
ELEVATION	44.83
CONTOUR ELEVATION AND LABEL	47

LIST OF ABBREVIATIONS

AC	ACRE
FF	FINISH FLOOR
EX	EXISTING
CB	CATCH BASIN
RCP	REINFORCED CONCRETE PIPE
INV	INVERT
MH	MANHOLE
P	PIPE
DI	DRAINAGE INLET
°	DEGREE
'	INCH
FT	FOOT
%	PERCENT
MAX	MAXIMUM
MIN	MINIMUM
TYP	TYPICAL
TW	TOP OF WALL

ENGINEER'S STATEMENT

I, RING W. LARDNER, P.E., HEREBY STATE THAT I AM A REGISTERED ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

DAVIS, BOWEN & FRIEDEL, INC.
by RING W. LARDNER, P.E.

DATE

CN-01

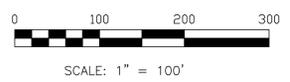
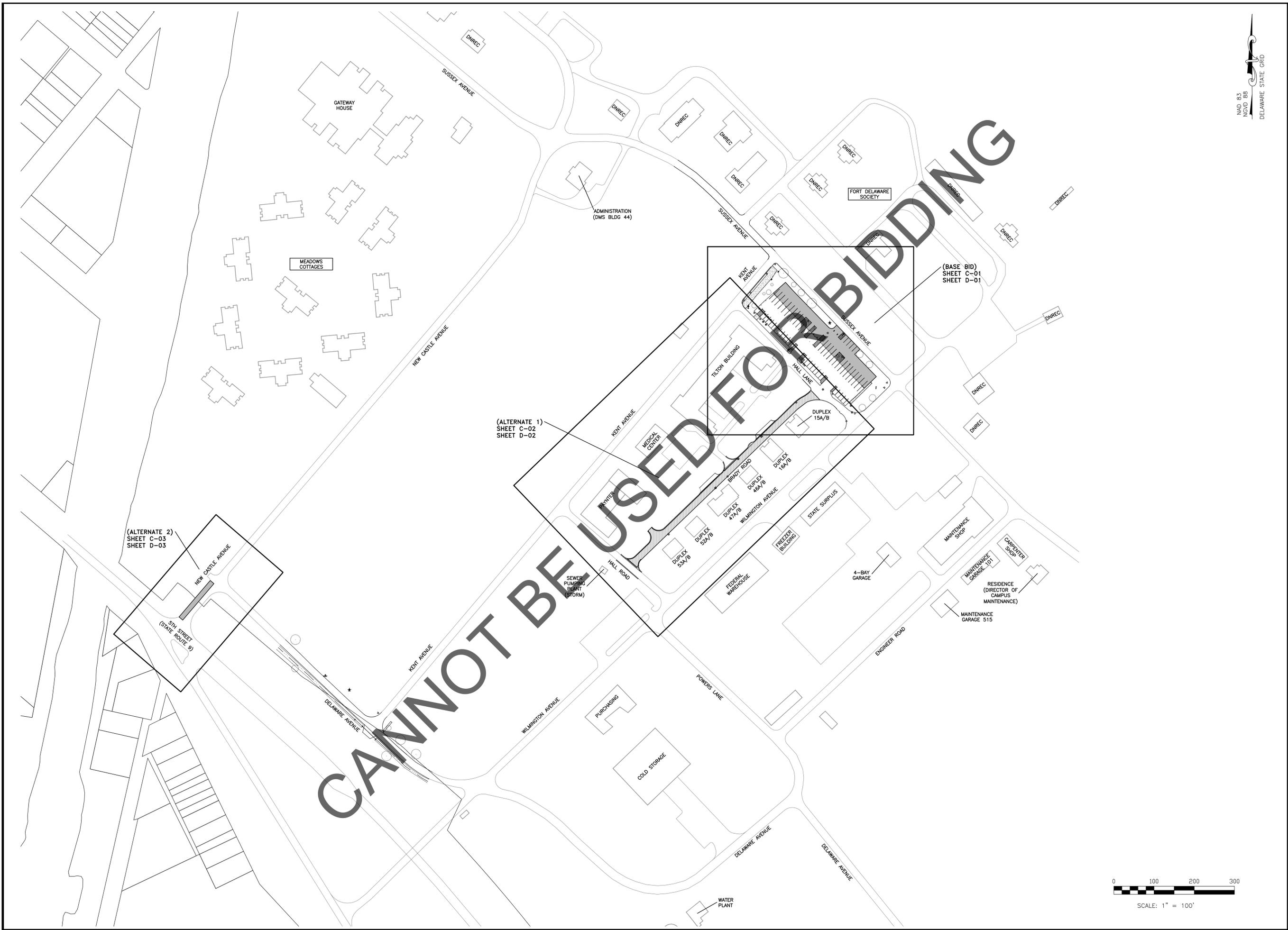


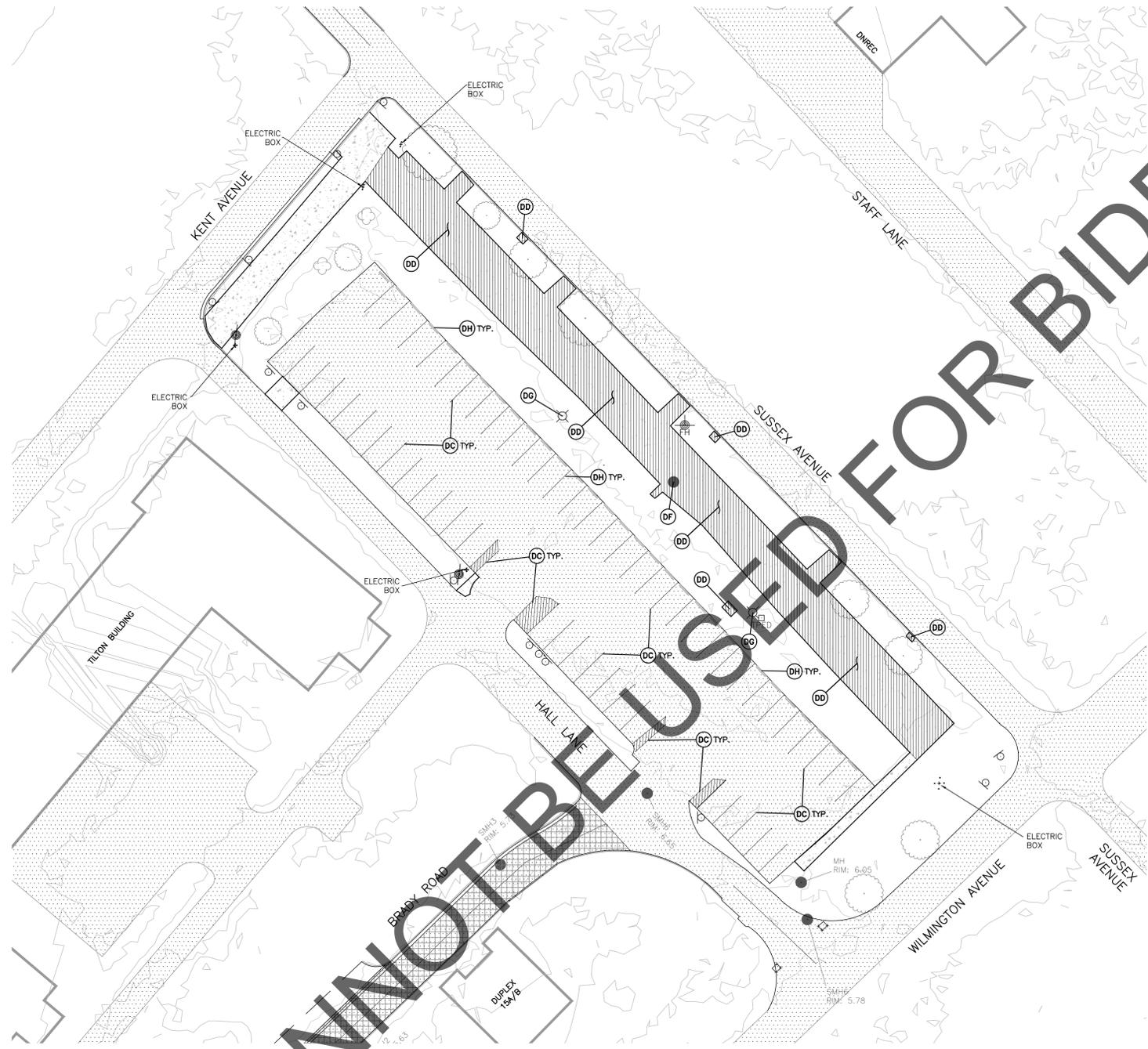
**TILTON PARKING LOT EXPANSION
 GOVERNOR BACON HEALTH CAMPUS
 NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE**

REVISIONS:

Date: **MAY 2016**
 Scale: **AS NOTED**
 Dwn.By: **ACM**
 Proj.No.: **5868035.501**
 Dwg.No.:

OV-01





(SEE SHEET D-02 FOR BRADY ROAD DEMOLITION PLAN)

BASE BID
SCALE: 1" = 30'



KEY LEGEND	
LABEL	DESCRIPTION
DA	PAVEMENT - TO BE MILLED & OVERLAYED
DB	SAWCUT LINE
DC	STRIPING - TO BE SAND BLASTED, AS NEEDED (TYPICAL)
DD	CONCRETE PAD - TO BE REMOVED
DE	CURB - TO BE REMOVED (ASSUME A DEPTH OF 6")
DF	SEWER MANHOLE - TO BE ADJUSTED
DG	LIGHT POLE - TO REMAIN
DH	PARKING BUMPERS - TO BE REMOVED

**TILTON PARKING LOT EXPANSION
GOVERNOR BACON HEALTH CAMPUS
NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE**

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Dwg.No.:	



(SEE SHEET C-02 FOR BRADY ROAD - ALTERNATE 1 SITE PLAN)

BASE BID
SCALE: 1" = 30'



NAD 83
NGVD 88
DELAWARE STATE GRID

CONSTRUCTION ALIGNMENT CONTROL		
POINT	NORTH	EAST
1000	572598.5850	608837.6790
1002	572625.1009	608867.6287
1003	572603.8140	608887.1076
1004	572554.7695	608934.9248
1005	572513.6091	608974.9813
1006	572510.5841	608982.0313
1007	572513.1786	608988.8686
1008	572519.0799	608994.8965
1009	572459.5726	609052.6886
1010	572447.1302	609039.6805
1011	572391.6904	609093.6105
1012	572362.8810	609063.6010
1013	572369.1880	609057.7550
1014	572403.9380	609022.8990
1015	572438.9250	608990.0290
1016	572458.1480	608971.5250
1017	572493.6640	608938.2370
1018	572529.0820	608903.2840
1019	572563.9820	608869.3430

KEY LEGEND	
LABEL	DESCRIPTION
CA	1 1/2" MILL AND OVERLAY
CB	PROPOSED 4" WIDE PAINTED WHITE LINE
CC	PROPOSED 4" WIDE PAINTED BLUE LINE TO DELINEATE HANDICAP PARKING
CD	PROPOSED 4" WIDE PAINTED YELLOW ISLAND STRIPING
CE	PROPOSED FULL DEPTH ASPHALT PARKING
CF	PROPOSED "HANDICAP PARKING" SIGN
CG	PROPOSED PAINTED HANDICAP SPACE
CH	WHITE PAINTED DIRECTIONAL ARROWS
CI	PROPOSED "STOP" (R1-1) SIGN - 36"x36"
CJ	PROPOSED 16" WIDE BY 12" LONG WHITE STOP BAR - THERMO STRIPING
CK	PROPOSED CONCRETE BUMP STOP

DAVIS, BOWEN & FRIEDEL, INC.
ARCHITECTS, ENGINEERS & SURVEYORS
SALISBURY, MARYLAND (410) 543-9091
MILFORD, DELAWARE (302) 424-1441



SITE PLAN

TILTON PARKING LOT EXPANSION
GOVERNOR BACON HEALTH CAMPUS
NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE

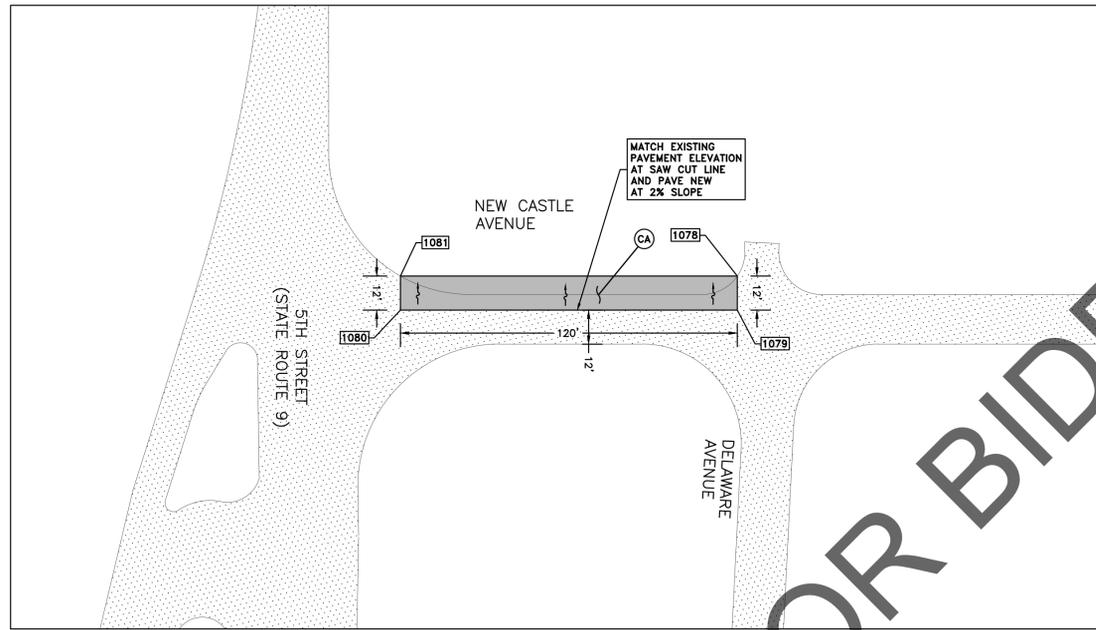
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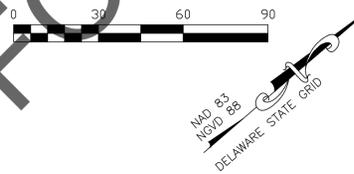
C-01

CONSTRUCTION ALIGNMENT CONTROL

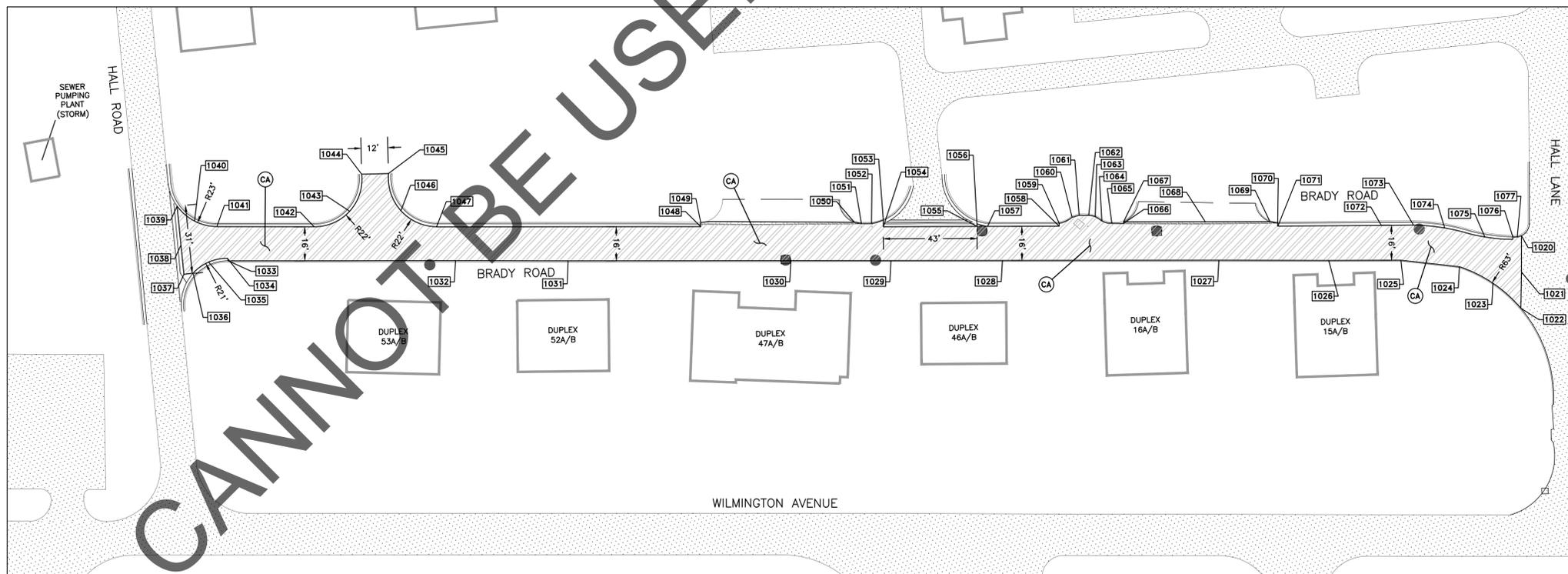
POINT	NORTH	EAST
1020	572358.0552	608930.5928
1021	572346.0490	608942.1300
1022	572333.8552	608953.3383
1023	572333.2440	608936.1839
1024	572328.0350	608919.8280
1025	572311.5900	608898.2820
1026	572288.5480	608874.3740
1027	572253.6310	608837.8110
1028	572184.6940	608765.9280
1029	572149.1790	608728.9390
1030	572117.3200	608695.6930
1031	572046.3520	608621.7340
1032	572010.5840	608584.2580
1033	571938.2260	608508.8290
1034	571938.7840	608507.6790
1035	571931.5944	608502.6474
1036	571922.9840	608500.9540
1037	571919.6360	608498.3030
1038	571928.4190	608488.0094
1039	571940.0000	608474.4460
1040	571940.6010	608484.9750
1041	571945.8958	608494.0955
1042	571976.8100	608526.5120
1043	571993.2414	608533.4025
1044	572009.2980	608525.6790
1045	572018.0480	608534.3740
1046	572009.6955	608550.2878
1047	572015.7580	608567.2070
1048	572099.8769	608654.9454
1049	572101.2370	608653.6300
1050	572150.2130	608704.5940
1051	572152.0230	608707.3870
1052	572155.2310	608710.7460
1053	572160.1503	608713.5745
1054	572157.9600	608715.6660
1055	572187.8670	608746.7220
1056	572188.7294	608745.9097
1057	572191.2150	608750.1930
1058	572214.0859	608773.9601
1059	572215.0646	608773.0099
1060	572221.1620	608775.3650
1061	572224.0760	608777.1130
1062	572227.0880	608780.3020
1063	572228.7350	608782.9130
1064	572229.4137	608786.4805
1065	572231.7700	608790.5520
1066	572235.4937	608794.4776
1067	572236.0420	608793.9550
1068	572262.0440	608821.1100
1069	572282.6670	608842.5390
1070	572284.6435	608845.5462
1071	572283.9327	608846.5060
1072	572316.8850	608880.7570
1073	572327.1990	608891.3300
1074	572336.1781	608902.5962
1075	572345.9905	608918.8621
1076	572354.9500	608928.0730
1077	572356.3005	608929.5820
1078	571886.7267	607437.0051
1079	571878.9065	607446.1070
1080	571796.3184	607359.3285
1081	571788.4983	607368.4304



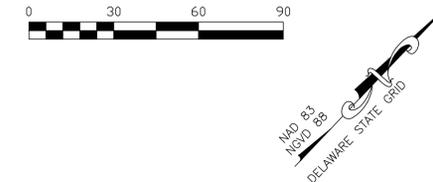
ALTERNATE 2
SCALE: 1" = 30'



KEY LEGEND	
LABEL	DESCRIPTION
CA	1 1/2" MILL AND OVERLAY
CB	PROPOSED 4" WIDE PAINTED WHITE LINE
CC	PROPOSED 4" WIDE PAINTED BLUE LINE TO DELINEATE HANDICAP PARKING
CD	PROPOSED 4" WIDE PAINTED YELLOW ISLAND STRIPING
CE	PROPOSED FULL DEPTH ASPHALT PARKING
CF	PROPOSED "HANDICAP PARKING" SIGN
CG	PROPOSED PAINTED HANDICAP SPACE
CH	WHITE PAINTED DIRECTIONAL ARROWS
CI	PROPOSED "STOP" (R1-1) SIGN - 36"x36"
CJ	PROPOSED 16" WIDE BY 12' LONG WHITE STOP BAR - THERMO STRIPING



ALTERNATE 1
SCALE: 1" = 30'



(SEE SHEET C-01 FOR TILTON PARKING - BASE BID LOT SITE PLAN)

CANNOT BE USED FOR BIDDING

DAVIS, BOWEN & FRIEDEL, INC.
ARCHITECTS, ENGINEERS & SURVEYORS
SALISBURY, MARYLAND (410) 543-9091
MILFORD, DELAWARE (302) 424-1441



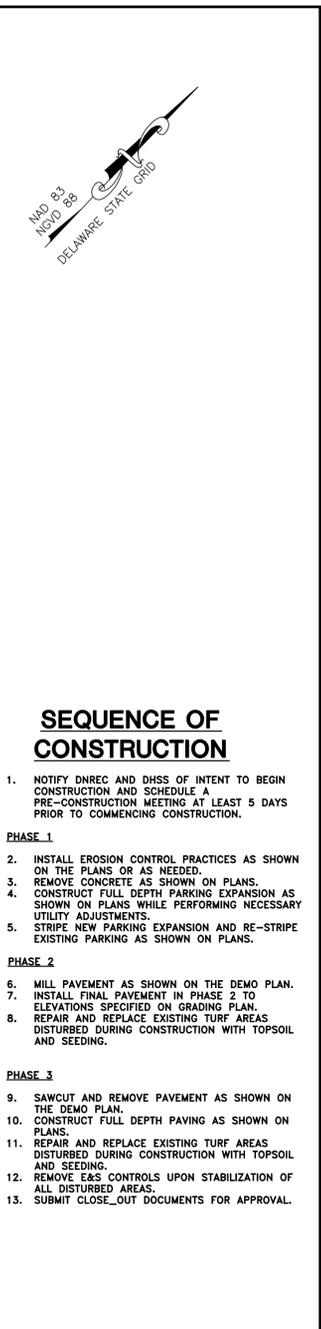
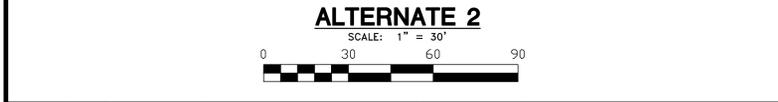
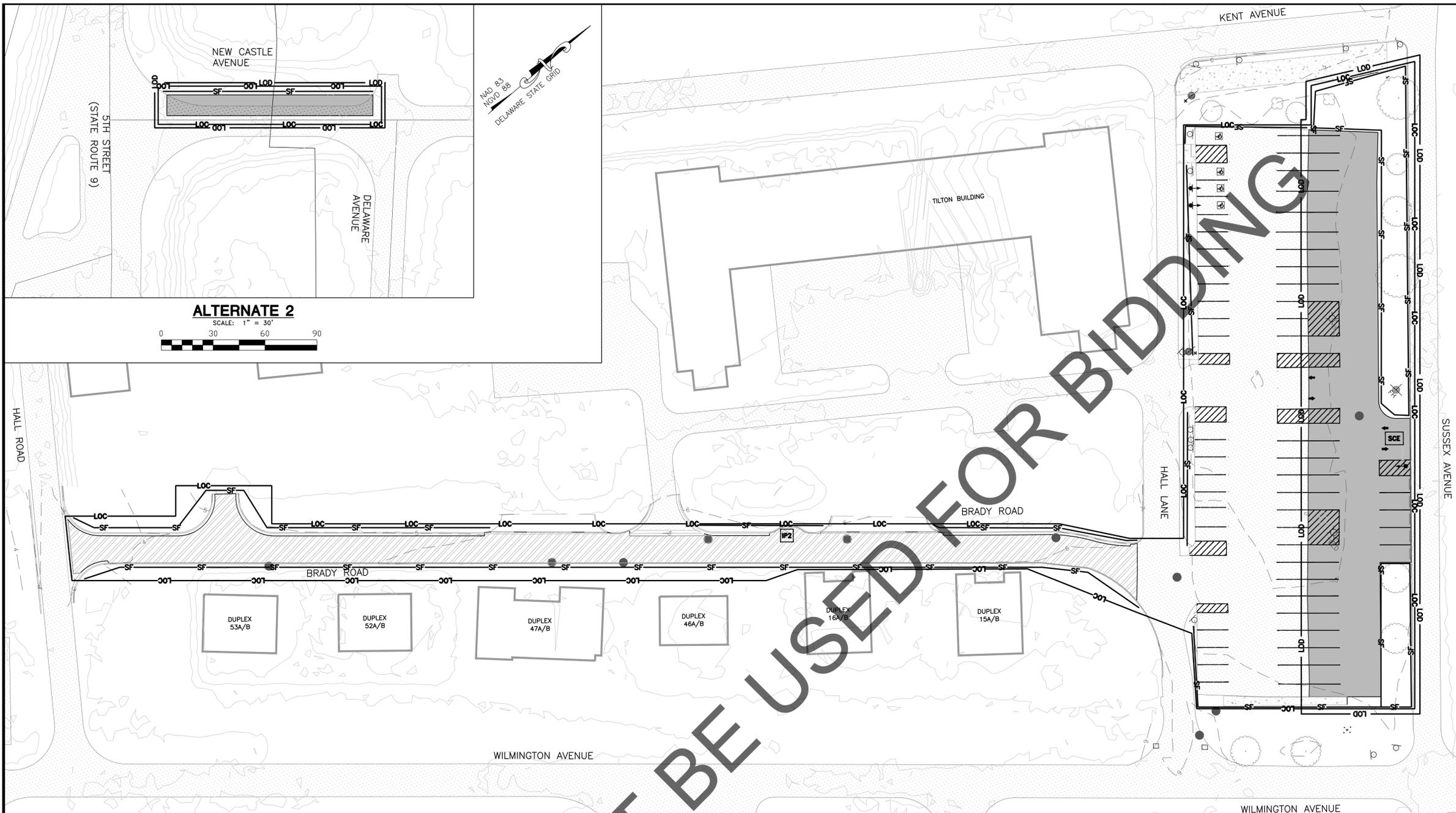
SITE PLAN

TILTON PARKING LOT EXPANSION
GOVERNOR BACON HEALTH CAMPUS
NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE

REVISIONS:

Date: **MAY 2016**
Scale: **AS NOTED**
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Dwg.No.:

C-02



SEQUENCE OF CONSTRUCTION

1. NOTIFY DNREC AND DHSS OF INTENT TO BEGIN CONSTRUCTION AND SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 5 DAYS PRIOR TO COMMENCING CONSTRUCTION.
- PHASE 1
2. INSTALL EROSION CONTROL PRACTICES AS SHOWN ON THE PLANS OR AS NEEDED.
3. REMOVE CONCRETE AS SHOWN ON PLANS.
4. CONSTRUCT FULL DEPTH PARKING EXPANSION AS SHOWN ON PLANS WHILE PERFORMING NECESSARY UTILITY ADJUSTMENTS.
5. STRIKE NEW PARKING EXPANSION AND RE-STRIPE EXISTING PARKING AS SHOWN ON PLANS.
- PHASE 2
6. MILL PAVEMENT AS SHOWN ON THE DEMO PLAN.
7. INSTALL FINAL PAVEMENT IN PHASE 2 TO ELEVATIONS SPECIFIED ON GRADING PLAN.
8. REPAIR AND REPLACE EXISTING TURF AREAS DISTURBED DURING CONSTRUCTION WITH TOPSOIL AND SEEDING.
- PHASE 3
9. SAWCUT AND REMOVE PAVEMENT AS SHOWN ON THE DEMO PLAN.
10. CONSTRUCT FULL DEPTH PAVING AS SHOWN ON PLANS.
11. REPAIR AND REPLACE EXISTING TURF AREAS DISTURBED DURING CONSTRUCTION WITH TOPSOIL AND SEEDING.
12. REMOVE E&S CONTROLS UPON STABILIZATION OF ALL DISTURBED AREAS.
13. SUBMIT CLOSE_OUT DOCUMENTS FOR APPROVAL.

EROSION AND SEDIMENT CONTROL NOTES

1. DNREC SEDIMENT AND STORMWATER MANAGEMENT SECTION MUST BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
2. REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC OR THE DELEGATED AGENCY.
4. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK LATEST EDITION.
6. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND REPAIR ALL EROSION, SEDIMENT CONTROL AND STORMWATER MANAGEMENT PRACTICES DURING UTILITY INSTALLATION AND SITE CONSTRUCTION.
7. IT SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER TO MAINTAIN AND REPAIR ALL EROSION, SEDIMENT CONTROL AND STORMWATER MANAGEMENT PRACTICES AFTER COMPLETION AND APPROVAL OF ALL STORMWATER MANAGEMENT PRACTICES.
8. AT ANYTIME A DEWATERING OPERATING IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.
9. APPROVED PLANS REMAIN VALID FOR 3 YEARS FROM THE DATE OF APPROVAL.
10. APPROVAL OF A SEDIMENT AND STORMWATER MANAGEMENT PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
11. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.
12. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
13. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7 DEL. C. CH. 80, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES, AND DEPARTMENT POLICIES, PROCEDURES, AND GUIDANCE.
14. DOCUMENTATION OF SOIL TESTING AND MATERIALS USED FOR TEMPORARY OR PERMANENT STABILIZATION INCLUDING BUT NOT LIMITED TO SOIL TEST RESULTS, SEED TAGS, SOIL AMENDMENT TAGS, ETC. SHALL BE PROVIDED TO THE DEPARTMENT OR DELEGATED AGENCY TO VERIFY THAT THE PERMANENT OR TEMPORARY STABILIZATION HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN. THE DEPARTMENT OR DELEGATED AGENCY MAY REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH SPECIFICATIONS PROVIDED IN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, OR ALTERNATIVE MEASURES THAT PROVIDE FUNCTIONAL EQUIVALENCY.
15. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ESTABLISHED.
16. ALL AREAS NOT COVERED BY PAVEMENT WILL BE SEEDED USING PERMANENT STABILIZATION.
17. UPON COMPLETION OF STOCKPILING TOPSOIL, SEED AND MULCH USING TEMPORARY SEED MIX #5 IF TO REMAIN IN PLACE LONGER THAN 14 DAYS.
18. PERMANENT STABILIZATION: SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD DETAIL 3.4.3, USING SEED MIX #9.
19. TEMPORARY STABILIZATION: SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD DETAIL 3.4.3, USING SEED MIX #5.
20. IF TEMPORARY STABILIZATION IS REQUESTED, PERMANENT SEEDING SHALL BE PERFORMED DURING THE NEXT APPLICABLE PERIOD PER NOTE 21 ABOVE.
21. ALL FILL SLOPE AREAS SHOWN HEREON ARE TO BE STABILIZED PER NOTE 21 OR 22 ABOVE IMMEDIATELY AFTER COMPLETION OF GRADING OPERATIONS FOR THESE SLOPES.
22. TEMPORARY VEGETATIVE COVER, MULCHING AND/OR SPRINKLING WITH WATER SHALL BE THE METHODS USED AS NECESSARY TO CONTROL DUST.
23. EROSION CONTROL MATTING IS REQUIRED IN ALL OPEN CHANNELS AND ON ALL SLOPES 3:1 OR GREATER.
24. UPON COMPLETION OF THE PROJECT, THE OWNER WILL BE RESPONSIBLE FOR PERPETUAL MAINTENANCE OF THE STORMWATER FACILITIES.
25. TO LIMIT TRACKING OF SEDIMENT DURING CONSTRUCTION, ALL ROADWAYS (PAVEMENT) WILL BE SWEEP DAILY AT THE END OF EACH WORK DAY.
26. A CERTIFIED CONSTRUCTION REVIEWER (CCR) MAY BE REQUIRED TO REVIEW THE EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT WORK FOR THIS PROJECT.
27. THE TOTAL LAND DISTURBANCE PROPOSED BY THIS PLAN IS 6,212 SQUARE FEET.

BASE BID & ALTERNATE 1



LEGEND

- EXISTING PAVEMENT
- EXISTING CONCRETE
- MILL & OVERLAY
- PROPOSED PAVEMENT

LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION TYPE 2
- SILT FENCE
- LIMIT OF DISTURBANCE
- LIMIT OF CONSTRUCTION

OWNER'S CERTIFICATION

I, THE UNDERSIGNED, CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL (I.E., BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT AS REFERENCED ON THIS SHEET.

DATE _____

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

DATE _____

RING W. LARDNER, P.E.
DAVIS, BOWEN & FRIEDEL, INC.
23 N. WALNUT STREET
MILFORD, DE 19663
302-424-1441

IMPERVIOUS AREA:

TOTAL ADDITIONAL IMPERVIOUS: 7,017 S.F. (0.16 AC)
LIMIT OF DISTURBANCE IS .43 ACRES

DNREC APPROVAL BOX

DAVIS, BOWEN & FRIEDEL, INC.
ARCHITECTS, ENGINEERS & SURVEYORS
SALISBURY, MARYLAND (410) 543-9091
MILFORD, DELAWARE (302) 424-1441



EROSION & SEDIMENT CONTROL PLAN

TILTON PARKING LOT EXPANSION
GOVERNOR BACON HEALTH CAMPUS
NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE

Date: MAY 2016
Scale: AS NOTED
Dwn.By: ACM
Proj.No.: 586B035.501
Dwg.No.:

ES-01

Standard Detail & Specifications
Silt Fence

Section

Plan

Source: Adapted from MD Sds. & Specs. for ESC
Symbol: **SF**
Detail No: **DE-ESC-3.1.2.1**
Sheet 1 of 2
Date: 6/05

Standard Detail & Specifications
Silt Fence

Construction Detail

Construction Notes:

- Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
- When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

Materials:

- Stakes: Steel (either 1" or 1 1/2" x 2" x 2") hardwood
- Geosynthetic Fabric: Type GD-1
- Reinforcing strip: Wooden lath, plastic strip or other approved equivalent
- Prefabricated Unit: Geotab, Enviroforce, or approved equivalent

Source: Adapted from MD Sds. & Specs. for ESC
Symbol: **SF**
Detail No: **DE-ESC-3.1.2.1**
Sheet 2 of 2
Date: 6/05

Standard Detail & Specifications
Inlet Protection - Type 2

Bag Detail

Perspective

Source: Adapted from ACF Products, Inc.
Symbol: **IP-2**
Detail No: **DE-ESC-3.1.5.2**
Sheet 1 of 2
Date: 12/03

Standard Detail & Specifications
Inlet Protection - Type 2

Notes:

- This practice shall only be used in situations in which Inlet Protection - Type 1 cannot be used due to site constraints. These include, but are not limited to partially completed parking areas, streets, roads, etc.
- It may be necessary to transition from Type 1 to Type 2 Inlet Protection as construction proceeds.
- For areas where there is a concern for oil run-off or spills, insert shall meet one of the above specifications with an oil-absorbent pillow or shall be made completely from an oil-absorbent material with a woven pillow.

Materials:

The geotextile inlet insert shall meet or exceed the specifications of Type GD-1 geotextile in accordance with Appendix A-3 of the Delaware Erosion & Sediment Control Handbook.

Source: Adapted from ACF Products, Inc.
Symbol: **IP-2**
Detail No: **DE-ESC-3.1.5.2**
Sheet 2 of 2
Date: 12/03

Standard Detail & Specifications
Dust Control

Temporary Methods:

- Mulches - See **DE-ESC-3.4.5**, Standard Detail and Specifications for Mulching.
- Vegetative cover - See **DE-ESC-3.4.3**, Std. Detail and Specifications for Vegetative Stabilization.
- Adhesives - Use an mineral soils only (not effective on muck soils). Keep traffic off these areas. The following table may be used for general guidance.

Type of Emulsion	Water Dilution	Type of Nozzle	Apply Gal./Ac.
Latex emulsion	12.5:1	Fine spray	235
Resin in water emulsion	4:1	Fine spray	300
Acrylic emulsion (non-traffic)	7:1	Coarse spray	450
Acrylic emulsion (traffic)	3.5:1	Coarse spray	350

- Tillage - For emergency temporary treatment, scarify the soil surface to prevent or reduce the amount of blowing dust until a more appropriate solution can be implemented. Begin the tillage operation on the windward side of the site using a chisel-type plow for best results.
- Sprinkling - Sprinkle site with water until the surface is moist. Repeat as needed.
- Calcium Chloride - Apply as flakes or granular material with a spreader at a rate that will keep the soil surface moist. Re-apply as necessary.
- Barriers - Place barriers such as solid board fences, snow fences, hay bales, etc. at right angles to the prevailing air currents at intervals of approx. 10X their height.

Permanent Methods:

- Vegetative cover - See **DE-ESC-3.4.3**, Std. Detail and Specifications for Vegetative Stabilization.
- Stone - Apply layer of crushed stone or coarse gravel to protect soil surface.

Source: Adapted from VA ESC Handbook
Symbol:
Detail No: **DE-ESC-3.4.8**
Sheet 1 of 1
Date: 12/03

Standard Detail & Specifications
Construction Site Waste Mgt & Spill Control

DATA TO BE PROVIDED:

- Volume of Potential Pollution
- Height of containment
- Area of containment
- Volume of containment

Source: Delaware ESC Handbook
Symbol:
Detail No: **DE-ESC-3.6.1**
Sheet 1 of 5
Date: 03/13

Standard Detail & Specifications
Construction Site Waste Mgt & Spill Control

Pollution Prevention - Spill Prevention

- Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
- Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
- Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
- Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
- Place a "Fueling Area" sign next to each fueling area.
- Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
- Inspect vehicles and equipment for leaks on each day of use. Repair fuel and oil leaks immediately.
- Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
- If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

CLEAN UP SPILLS

- If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
- Do not bury spills or wash them down with water.

LEAKS AND DRIPS

- Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
- Do not allow oil, grease, fuel or chemicals to drip onto the ground.
- Have spill kits and clean up material on-site.
- Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
- Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
- Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source: Delaware ESC Handbook
Symbol:
Detail No: **DE-ESC-3.6.1**
Sheet 2 of 5
Date: 03/13

Standard Detail & Specifications
Construction Site Waste Mgt & Spill Control

Notes:

The Construction Site Pollution Prevention Plan should include the following elements:

- Material Inventory**
Document the storage and use of the following materials:
a. Concrete
b. Detergents
c. Paints (enamel and latex)
d. Cleaning solvents
e. Pesticides
f. Wood scraps
g. Fertilizers
h. Petroleum based products
- Good housekeeping practices**
a. Store only enough product required to do the job.
b. All materials shall be stored in a neat, orderly manner in their original labeled containers and covered.
c. Substances shall not be mixed.
d. When possible, all old product shall be used up prior to disposal of the container.
e. Manufacturers' instructions for disposal shall be strictly adhered to.
f. The site foreman shall designate someone to inspect all BMPs daily.
- Waste management practices**
a. All waste materials shall be collected and stored in securely lidded dumpsters in a location that does not drain to a waterbody.
b. Waste materials shall be salvaged and/or recycled whenever possible.
c. The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source: Adapted from USEPA Pub. 840-B-92-002
Symbol:
Detail No: **DE-ESC-3.6.1**
Sheet 3 of 5
Date: 03/13

Standard Detail & Specifications
Construction Site Waste Mgt & Spill Control

Notes (cont.)

- Trash shall be disposed of in accordance with all applicable Delaware laws.
- Trash cans shall be placed at all lunch spots and littering is strictly prohibited. Recycle bins shall be placed near the construction trailer.
- Fertilizer bags can not be stored in a weather-proof location, they shall be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.
- Equipment maintenance practices**
a. If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
b. If performed on-site, vehicles shall be washed with high-pressure water spray without detergents in an area contained by an impervious berm.
c. Drip pans shall be used for all equipment maintenance.
d. Equipment shall be inspected for leaks on a daily basis.
e. Washout from concrete trucks shall be disposed of in a temporary pit for hardening and proper disposal.
f. Fuel nozzles shall be equipped with automatic shut-off valves.
g. All used products such as oil, antifreeze, solvents and tires shall be disposed of in accordance with manufacturers' recommendations and local, state and federal laws and regulations.
- Spill prevention practices**
a. Potential spill areas shall be identified and contained in covered areas with no connection to the storm drain system.
b. Warning signs shall be posted in hazardous material storage areas.
c. Preventive maintenance shall be performed on all tanks, valves, pumps, pipes and other equipment as necessary.
d. Low or non-toxic substances shall be prioritized for use.

Source: Adapted from USEPA Pub. 840-B-92-002
Symbol:
Detail No: **DE-ESC-3.6.1**
Sheet 4 of 5
Date: 03/13

Standard Detail & Specifications
Construction Site Waste Mgt & Spill Control

Notes (cont.)

- Contact information for reporting spills through the DNREC 24-Hour Toll Free Number shall be prominently posted.
- Education**
a. Best management practices for construction site pollution control shall be a part of regular progress meetings.
b. Information regarding waste management, equipment maintenance and spill prevention shall be prominently posted in the construction trailer.

CONTACT INFORMATION

DNREC 24-Hour Toll Free Number 800-662-8802
DNREC Solid & Hazardous Waste Branch 302-739-9403

Source: Adapted from USEPA Pub. 840-B-92-002
Symbol:
Detail No: **DE-ESC-3.6.1**
Sheet 5 of 5
Date: 03/13

Standard Detail & Specifications
Topsoiling

Construction Notes:

- Site Preparation** (Where Topsoil is to be added)
Note: When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, waterways and sediment basins.
a. Grading - Grades on the areas to be topsoiled which have been previously established shall be maintained.
b. Liming - Where the topsoil is either highly acid or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet). Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
c. Tilling - After the areas to be topsoiled have been brought to grade, and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by digging or by scarifying to a depth of at least 3 inches to permit bonding of the topsoil to the subsoil. Rock by passing a bulldozer up and down over the entire surface area of the slope to create horizontal erosion check slots to prevent topsoil from sliding down the slope.
- Topsoil Material and Application**
Note: Topsoil salvaged from the existing site may often be used but it should meet the same standards as set forth in these specifications. The depth of topsoil to be salvaged shall be no more than the depth described as a representative profile for that particular soil type as described in the soil survey published by the USDA-SCS in cooperation with Delaware Agricultural Experimental Station.
a. Materials - Topsoil shall be a loam, sandy loam, clay loam, silty loam, sandy clay loam, loamy sand or other soil as approved by an agronomist or soil scientist. It shall have a minimum of contrasting textured subsoil and contain no more than 5 percent by volume of cinders, stones, slag, coarse fragments (narrow slits, rock, trash or other extraneous materials larger than 1/2 inches in diameter), roots, stumps, plants or plant parts of bermudagrass, quackgrass, Johnsongrass, wildsage, poison ivy, hickies, or others as specified. All topsoil shall be tested by a reputable laboratory for organic matter content, pH and soluble salts. A pH of 6.0 to 7.0 and an organic content of not less than 1.5 percent by weight is required. If pH value is less than 6.0 lime shall be applied and incorporated with the topsoil to adjust the pH to 6.5 or higher. Topsoil containing soluble salts greater than 500 parts per million shall not be used.
b. Application - The topsoil shall be uniformly distributed and compacted to a minimum of four (4) inches. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may be harmful to environmental to proper grading and seedbed preparation.
c. Note: Topsoil substitutes or amendments as approved by a qualified agronomist or soil scientist, may be used in lieu of natural topsoil. Compost material used to improve the percentage of organic matter shall be provided by a certified supplier.
d. Compost amendments that are intended to meet a specific post-construction stormwater management goals shall further meet the requirements of **Appendix 3.06.2 Post Construction Stormwater Management BMP Standards and Specifications, Section 14.0 Soil Amendments**.

Source: USDA - NRCS
Symbol:
Detail No: **DE-ESC-3.4.1**
Sheet 1 of 2
Date: 03/13

Standard Detail & Specifications
Topsoiling

Construction Notes (cont.)

- Materials** - Topsoil shall be a loam, sandy loam, clay loam, silty loam, sandy clay loam, loamy sand or other soil as approved by an agronomist or soil scientist. It shall have a minimum of contrasting textured subsoil and contain no more than 5 percent by volume of cinders, stones, slag, coarse fragments (narrow slits, rock, trash or other extraneous materials larger than 1/2 inches in diameter), roots, stumps, plants or plant parts of bermudagrass, quackgrass, Johnsongrass, wildsage, poison ivy, hickies, or others as specified. All topsoil shall be tested by a reputable laboratory for organic matter content, pH and soluble salts. A pH of 6.0 to 7.0 and an organic content of not less than 1.5 percent by weight is required. If pH value is less than 6.0 lime shall be applied and incorporated with the topsoil to adjust the pH to 6.5 or higher. Topsoil containing soluble salts greater than 500 parts per million shall not be used.
b. Application - The topsoil shall be uniformly distributed and compacted to a minimum of four (4) inches. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may be harmful to environmental to proper grading and seedbed preparation.
c. Note: Topsoil substitutes or amendments as approved by a qualified agronomist or soil scientist, may be used in lieu of natural topsoil. Compost material used to improve the percentage of organic matter shall be provided by a certified supplier.
d. Compost amendments that are intended to meet a specific post-construction stormwater management goals shall further meet the requirements of **Appendix 3.06.2 Post Construction Stormwater Management BMP Standards and Specifications, Section 14.0 Soil Amendments**.

Source: USDA - NRCS
Symbol:
Detail No: **DE-ESC-3.4.1**
Sheet 2 of 2
Date: 03/13

Standard Detail & Specifications
Mulching

1. Materials and Amounts

- Straw - Straw shall be unrotted small grain straw applied at the rate of 1-1/2 to 2 tons per acre, or 70 to 90 pounds (two bales per 1,000 square feet). Mulch materials shall be relatively free of weeds and shall be free of noxious weeds such as, reeds, Johnsongrass, and quackgrass. Spread mulch uniformly by hand spreader or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square feet sections and place 70-90 pounds (two bales) of mulch in each section.
- Wood chips - Apply at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet when available and when feasible. These are particularly well suited for utility and road right-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds of N per acre (200 pounds of 10-10-10 or 46-0-0 per acre).
c. Hydroculturally applied mulch - The following conditions apply to hydroculturally applied mulch:
i. Definitions:
a. Wood fiber mulch shall consist of specially prepared wood that has been processed to a uniform state, is packaged for sale as a hydrocult mulch for use with hydraulic seeding equipment, and consists of a minimum of 70% virgin or recycled wood fiber combined with 30% paper fiber and additives.
b. Blended fiber mulch shall consist of any hydrocult mulch that contains greater than 30% paper fiber. The paper component must consist of specially prepared paper that has been processed to a uniform fibrous state and is packaged for sale as a hydrocult mulch for use with hydraulic seeding equipment.
c. A bonded fiber mat BFM consists of long strand, specially prepared wood fibers that have been processed to a uniform state held together by a water resistant bonding agent. BFMs shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.
d. Refer to **Figure 3.4.5a** for conditions and limitations of use for each of the above categories of hydrocult mulch.
ii. All components of the hydroculturally applied mulches shall be pre-packaged by the manufacturer to ensure material performance. Field mixing of the mulch components is acceptable, but must be done per manufacturers recommendations to ensure the proper results.
iii. Hydrocult mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.
iv. Hydroculturally applied mulches and additives shall be mixed according to manufacturers recommendations.
v. Materials within this category shall only be used when hydroculturally applied mulch has been specified for use on the approved Sediment and Stormwater Plan, or supplemental approval from the plan approved agency has been obtained in writing for a specific area.

Source: Delaware ESC Handbook & Filtrax™ International
Symbol:
Detail No: **DE-ESC-3.4.5**
Sheet 1 of 3
Date: 03/13

Standard Detail & Specifications
Mulching

Application:

- Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.
b. Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.
c. During the spring (March) to May 31 and fall (September) to November 30 seasons, hydrocult mulches may be applied in a one-step process where all components are mixed together in single tank loads. It is recommended that the product be applied from opposing directions to achieve optimum soil coverage.
d. During the summer (June 1 to August 31) and winter (December 1 to February 28) seasons, the following two-step process is required:
Step One - Mix and apply seed and soil amendments with a small amount of mulch for visual maturing.
Step Two - Mix and apply mulch at manufacturers recommended rates over freshly seeded surfaces. Apply from opposing directions to achieve optimum soil coverage.
e. Minimum curing temperatures is 40°F (4°C). The best results are more rapid curing are achieved at temperatures exceeding 60°F (15°C). Curing times may be accelerated in high temperatures, low humidity conditions or dry soils.
vi. Recommended application rates are for informational purposes only. Conformance with this standard and specification shall be performance-based and requires **100% soil coverage**. Any areas with bare soil showing shall be top dressed until full coverage is achieved.
d. **Compost (Biomat) BFM** - Loosely apply with a pneumatic blower so that a P compost blanket uniformly covers the soil with **100% coverage**. This application can be used with seed to promote germination by applying the approved seed mix directly into the loosely blown compost. The compost blanket performs best on slopes less than 2:1 and requires no mulch anchoring.
- Anchoring mulch** - Mulch must be anchored immediately to minimize loss by wind or water. This may be done by one of the following methods, depending upon size of area, erosion hazard, and cost.
a. **Chaining** - A chain or a tractor drawn implement designed to punch and anchor mulch into the top two (2) inches of soil. This practice efforts maximum erosion control but is limited to better slopes where equipment can operate safely. On sloping land, chaining should be done on the contour whenever possible.
b. **Tracking** - Tracking is the process of cutting mulch usually straight into the soil using a bulldozer or other equipment that runs on cleated tracks. Tracking is used primarily on slopes 3:1 or steeper and should be done up and down the slope with cleat marks running across the slope.
c. **Liquid mulch binders** - Applications of liquid mulch binders should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch will be moved by wind or water. All other areas should have uniform applications. The use of synthetic binders to the preference of mulch binders and should be applied at the rates recommended by the manufacturer.
d. **Paper fiber** - The fiber binder shall be applied at a net dry weight of 750 lb/acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons.
e. **Nailings** - Synthetic or organic nailings may be used to secure straw mulch. Install and secure according to the manufacturers recommendations.

Source: Delaware ESC Handbook & Filtrax™ International
Symbol:
Detail No: **DE-ESC-3.4.5**
Sheet 2 of 3
Date: 03/13

Standard Detail & Specifications
Mulching

MULCHING MATERIAL SELECTION GUIDE

Material	Application											
	1	2	3	4	5	6	7	8	9	10	11	12
Straw	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wood chips	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydrocult mulch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compost (Biomat) BFM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other												

Source: Delaware ESC Handbook & Filtrax™ International
Symbol:
Detail No: **DE-ESC-3.4.5**
Sheet 3 of 3
Date: 03/13

TILTON PARKING LOT EXPANSION
GOVERNOR BACON HEALTH CAMPUS
NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE

EROSION & SEDIMENT CONTROL DETAILS

Date: **MAY 2016**
Scale: **AS NOTED**
Dwn. By: **ACM**
Proj. No.: **586035.501**
Dwg. No.: **ES-02**

DAVIS, BOWEN & FRIEDEL, INC.
ARCHITECTS, ENGINEERS & SURVEYORS
SALISBURY, MARYLAND (410) 543-9091
MILFORD, DELAWARE (302) 424-1441

Standard Detail & Specifications

Sensitive Area Protection

10' min. setback applies to all sensitive areas covered by this specification.

Location of Sensitive Area Protection

Method of Sensitive Area Protection

Source: Adapted from VA ESC Handbook
 Symbol: **SAP**
 Detail No. **DE-ESC-3.7.2**
 Sheet 1 of 3
 Date: 03/15

Standard Detail & Specifications

Sensitive Area Protection

Construction Notes:

Fencing shall be installed at the extents of all sensitive areas. For trees, the fencing shall be installed outside the drip line canopy and at no time within 5 feet of the trunk. Personnel must be instructed to honor protective devices. The devices described are suggested only, and are not intended to exclude the use of other devices which will protect the trees to be retained. If a fence is to be used for demarcation purposes, appropriate signage shall be provided a minimum of every 20 feet denoting the area as a sensitive area protection zone.

Materials:

- Snow Fence - Standard 40-inch high snow fence shall be placed at the limits of clearing or construction on standard steel posts set 6 feet apart.
- Board Fence - Board fencing consisting of 4-inch square posts set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with a minimum of two horizontal boards between posts. For tree protection, if it is not practical to erect a fence at the drip line, construct a triangular fence nearer the trunk. The limits of clearing will still be located at the drip line, since the root zone within the drip line will still require protection.
- Plastic Fencing - 40-inch high "international orange" plastic (polyethylene) web fencing secured to conventional metal "T" or "U" posts driven to a minimum depth of 18 inches on 6-foot minimum centers shall be installed at the limits of clearing. The fence should have the following minimum physical qualities:
 - Tensile yield: Average 2,000 lbs. per 4-foot width (ASTM D638)
 - Ultimate tensile yield: Average 2,900 lbs. per 4-foot width (ASTM D638)
 - Elongation at break (%): Greater than 1000% (ASTM D638)
 - Chemical resistance: Inert to most chemicals and acids

Source: Adapted from VA ESC Handbook
 Symbol: **SAP**
 Detail No. **DE-ESC-3.7.2**
 Sheet 2 of 3
 Date: 03/15

Standard Detail & Specifications

Sensitive Area Protection

- Cord Fence - Posts with a minimum size of 2 inches square or 2 inches in diameter set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with two rows of cord 1/4-inch or thicker at least 2 feet apart running between posts with strips of colored surveyor's flagging tied securely to the string at intervals no greater than 3 feet.
- Earth Berms - Temporary earth berms shall be constructed according to specifications for a Temporary Earth Dike with the base of the berm on the sensitive area side located along the limits of clearing. Earth berms may not be used for this purpose if their presence will conflict with drainage patterns.
- Trunk Armoring (Tree Protection Only) - As a last resort, a tree trunk can be armored with burlap wrapping and 2-inch slats wired vertically no more than 2 inches apart to a height of 5 feet encircling the trunk. If this alternative is used, the root zone within the drip line will still require protection. Nothing should ever be nailed to a tree.

Maintenance:

Fencing and armoring devices shall be in place before any excavation or grading is begun, shall be kept in good repair for the duration of construction activities, and shall be the last items removed during the final cleanup after the completion of the project.

Source: Adapted from VA ESC Handbook
 Symbol: **SAP**
 Detail No. **DE-ESC-3.7.2**
 Sheet 3 of 3
 Date: 03/15

Standard Detail & Specifications

Stabilized Construct. Entrance

Plan

Profile

Section A-A (Std.)

Source: Adapted from VA ESC Handbook
 Symbol: **SCF**
 Detail No. **DE-ESC-3.4.7**
 Sheet 1 of 2
 Date: 12/05

Standard Detail & Specifications

Stabilized Construct. Entrance

Section A-A (Opt.)

Construction Notes:

- Stone size - Use DE #3 stone.
- Length - As required, but not less than 50 feet except on a single residence lot where a 30 foot minimum length would apply.
- Thickness - Not less than size (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width of points where ingress or egress occurs.
- Geotextile - Type GS-4 placed over the entire area prior to placing of stone.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mounable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights of way. This may require periodic top dressing with additional stone as conditions demand and repair and/or disposal of any materials used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

Source: Adapted from VA ESC Handbook
 Symbol: **SCF**
 Detail No. **DE-ESC-3.4.7**
 Sheet 2 of 2
 Date: 12/05

Standard Detail & Specifications

Vegetative Stabilization

TEMPORARY SEEDING BY RATES, DEPTHS AND DATES									
Mix #	Species*	Seeding Rate	Optimum Seeding Dates ¹					Planting Depth ²	
			1	2	3	4	5		
1	Bermuda	150	A	O	A	O	1-2 inches		
2	St. Augustine	150	A	O	A	O	1-2 inches		
3	Flora	150	A	O	A	O	1-2 inches		
4	Perennial Ryegrass	150	A	O	A	O	1-2 inches		
5	Annual Ryegrass	150	A	O	A	O	1-2 inches		
6	Winter Wheat	150	A	O	A	O	1-2 inches		
7	Trifolium	30 PLS	O				0.5 inches		
8	Poa Millet	20 PLS	O				0.5 inches		

Source: Delaware ESC Handbook
 Symbol: **SAP**
 Detail No. **DE-ESC-3.4.3**
 Sheet 1 of 4
 Date: 12/05

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES (cont.)									
Mix #	Certified Seed ³	Seeding Rate ⁴	Optimum Seeding Dates ¹					Remarks	
			1	2	3	4	5		
1	Well Drained Soils	150	A	O	A	O	1-2 inches		
2	Well Drained Soils	150	A	O	A	O	1-2 inches		
3	Well Drained Soils	150	A	O	A	O	1-2 inches		
4	Well Drained Soils	150	A	O	A	O	1-2 inches		
5	Well Drained Soils	150	A	O	A	O	1-2 inches		
6	Well Drained Soils	150	A	O	A	O	1-2 inches		
7	Well Drained Soils	150	A	O	A	O	1-2 inches		
8	Well Drained Soils	150	A	O	A	O	1-2 inches		
9	Well Drained Soils	150	A	O	A	O	1-2 inches		
10	Well Drained Soils	150	A	O	A	O	1-2 inches		

Source: Delaware ESC Handbook
 Symbol: **SAP**
 Detail No. **DE-ESC-3.4.3**
 Sheet 2 of 4
 Date: 12/05

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES (cont.)									
Mix #	Certified Seed ³	Seeding Rate ⁴	Optimum Seeding Dates ¹					Remarks	
			1	2	3	4	5		
11	Well Drained Soils	150	A	O	A	O	1-2 inches		
12	Well Drained Soils	150	A	O	A	O	1-2 inches		
13	Well Drained Soils	150	A	O	A	O	1-2 inches		
14	Well Drained Soils	150	A	O	A	O	1-2 inches		
15	Well Drained Soils	150	A	O	A	O	1-2 inches		
16	Well Drained Soils	150	A	O	A	O	1-2 inches		
17	Well Drained Soils	150	A	O	A	O	1-2 inches		
18	Well Drained Soils	150	A	O	A	O	1-2 inches		
19	Well Drained Soils	150	A	O	A	O	1-2 inches		
20	Well Drained Soils	150	A	O	A	O	1-2 inches		

Source: Delaware ESC Handbook
 Symbol: **SAP**
 Detail No. **DE-ESC-3.4.3**
 Sheet 3 of 4
 Date: 12/05

Standard Detail & Specifications

Vegetative Stabilization

Construction Notes:

- Site Preparation
 - Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.
 - Final grading and shaping is not necessary for temporary seedings.
- Seedbed Preparation
 - It is important to prepare a good seedbed to insure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.
- Soil Amendments
 - Lime - Apply liming materials based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
 - Fertilizer - Apply fertilizer based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soil.
- Seeding
 - For temporary stabilization, select a mixture from Sheet 1. For permanent stabilization, select a mixture from Sheet 2 or Sheet 3 depending on the conditions.
 - Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
 - Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.
- Mulching
 - All mulching shall be done in accordance with detail DE-ESC-3.4.5.

Source: Delaware ESC Handbook
 Symbol: **SAP**
 Detail No. **DE-ESC-3.4.3**
 Sheet 4 of 4
 Date: 12/05

CANNOT BE USED FOR BIDDING

dbf

DAVIS, BOWEN & FRIEDEL, INC.
 ARCHITECTS, ENGINEERS & SURVEYORS

SALISBURY, MARYLAND (410) 543-9091
 MILFORD, DELAWARE (302) 424-1441

EROSION & SEDIMENT CONTROL DETAILS

TILTON PARKING LOT EXPANSION
GOVERNOR BACON HEALTH CAMPUS
NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE

Date: **MAY 2016**
 Scale: **AS NOTED**
 Dwn. By: **ACM**
 Proj. No.: **586035.501**
 Dwg. No.: **ES-03**



CANNOT BE USED FOR BIDDING

BASE BID & ALTERNATE 1

SCALE: 1" = 30'



GENERAL NOTE:

1. ABBREVIATION INDEX
 EP = EDGE OF PAVEMENT
 PS = PAVEMENT SPOT ELEVATION
 EX = EXISTING ELEVATION

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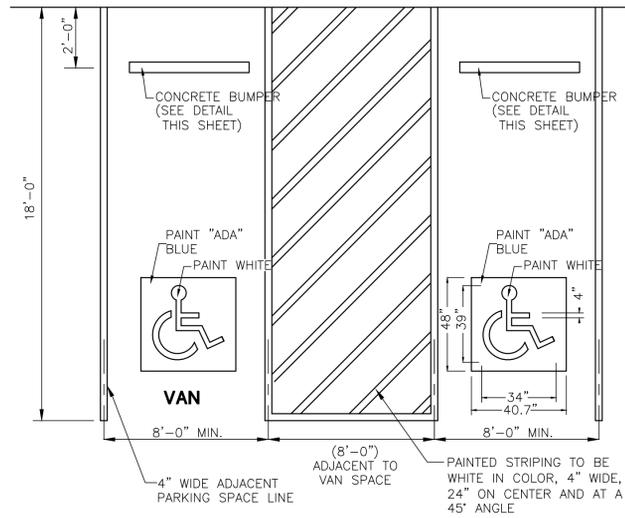


GRADING PLAN

**TILTON PARKING LOT EXPANSION
 GOVERNOR BACON HEALTH CAMPUS
 NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE**

Date: MAY 2016
 Scale: AS NOTED
 Dwn.By: ACM
 Proj.No.: 5868035.S01
 Dwg.No.:

G-01



HANDICAP PARKING DETAIL (CC) (CG)

NO SCALE

NOTES:

1. SQUARE TUBES ARE TO BE FORMED FROM GALVANIZED SHEET STRUCTURAL (PHYSICAL) QUALITY, ASTM A 446, GRADE A, COATING DESIGNATION G 90, REGULAR SPANGLE, OR HOT ROLLED CARBON SHEET STEEL STRUCTURAL (PHYSICAL) QUALITY, ASTM A 570, GRADE 33.

A. NOMINAL OUTSIDE DIMENSION, (INCHES):

2 X 2 +/- .008
 2 1/4 X 2 1/4 +/- .010
 2 1/2 X 2 1/2 +/- .010

B. ALL FOUR SIDES ARE TO HAVE EVENLY SPACED 7/16" DIAMETER HOLES ON 1" CENTERS THE ENTIRE LENGTH OF THE TUBE.

C. TOLERANCE ON HOLE SIZE IS +/- 1/32", TOLERANCE ON HOLE SPACING IS +/- 1/8" IN 20 FEET. SHEETING AND SHALL BE APPLIED TO SIGN GRADE ALUMINUM SHEET (MINIMUM THICKNESS +/- 0.080").

D. STANDARD CORNER RADIUS SHALL BE 3/32" +/- 1/64".

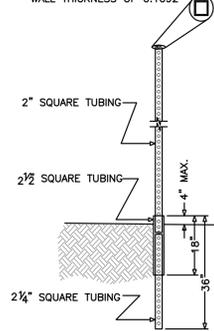
E. THE FASTENERS TO BE SUPPLIED UNDER THIS SPECIFICATION SHALL BE 3/16" GRADE 5 UNC CORNER BOLTS WITH CADMIUM OR ZINC PLATING, INSTALLATION OF SIGNS SHALL BE WITH 3/8" X 2 1/2" BOLT WITH LOCKNUT AND WASHER.

2. THE CONTRACTOR SHALL PROVIDE AND INSTALL PVC (POLYVINYL CHLORIDE) SLEEVES (4" INSIDE DIAMETER MINIMUM, 6" INSIDE DIAMETER MAXIMUM) IN PROPOSED CONCRETE SIDEWALKS, ISLANDS, AND MEDIANS FOR FUTURE TRAFFIC SIGN POSTS AS DIRECTED BY THE ENGINEER. THE LOWER END OF THE SLEEVE SHALL BE SET ON THE TOP OF THE SOIL.

3. FLAT PANEL SIGN MATERIALS:
 STOP SIGN FACES SHALL BE FABRICATED OF TYPE "IX" ENCLOSED LENS (DIAMOND GRADE) REFLECTIVE SHEETING. ALL OTHER SIGNS SHALL BE A MINIMUM TYPE "III" ENCAPSULATED LENS (HIGH INTENSITY) REFLECTIVE SHEETING AND SHALL BE APPLIED TO SIGN GRADE ALUMINUM SHEET (MINIMUM THICKNESS +/- 0.080").

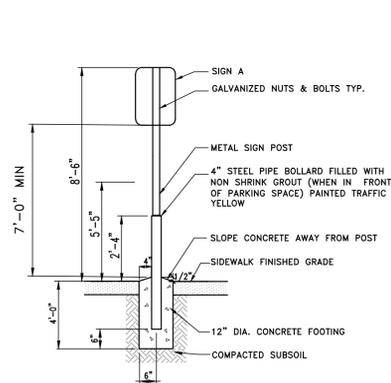
BREAK-AWAY ASSEMBLY

SQUARE POST SHALL NOT BE LESS THAN 2" X 2" WITH A WALL THICKNESS OF 0.1092"



SIGN POST SPECIFICATIONS & GENERAL NOTES

NO SCALE



HANDICAP PARKING POST DETAIL (CF)

NOT TO SCALE



HANDICAP PARKING SIGN DETAIL (CF)

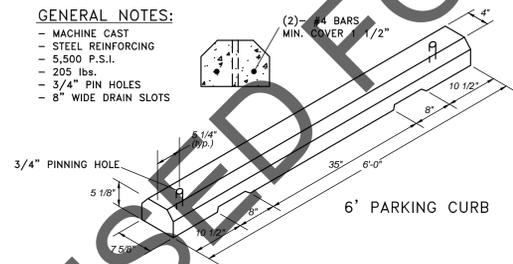
NOT TO SCALE

DETAIL INFORMATION TABLE						
ITEM	LOCATION OF DETAIL	YEAR	SECTION	NAME	DESCRIPTION	SHEET NUMBER(S)
BREAKAWAY POST	DEMDOT - STANDARD CONSTRUCTION DETAILS	2014	SECTION VIII - TRAFFIC	BREAKAWAY SIGN POST AND PIN ASSEMBLY DETAILS	BREAKAWAY SIGN POST AND PIN ASSEMBLY DETAILS	T-15 (2013)
SIGN(S)	DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES - DE MUTCD	2011	PART 2, CHAPTER 2B	STOP SIGN	STOP SIGN (R1-1), 30"X30"	2B-2, 2B-9 & 2B-10

KEY LEGEND	
LABEL	DESCRIPTION
CA	1 1/2" MILL AND OVERLAY
CB	PROPOSED 4" WIDE PAINTED WHITE LINE
CC	PROPOSED 4" WIDE PAINTED BLUE LINE TO DELINEATE HANDICAP PARKING
CD	PROPOSED 4" WIDE PAINTED YELLOW ISLAND STRIPING
CE	PROPOSED FULL DEPTH ASPHALT PARKING
CF	PROPOSED "HANDICAP PARKING" SIGN
CG	PROPOSED PAINTED HANDICAP SPACE
CH	WHITE PAINTED DIRECTIONAL ARROWS
CI	PROPOSED "STOP" (R1-1) SIGN - 36"X36"
CJ	PROPOSED 16" WIDE BY 12" LONG WHITE STOP BAR - THERMO STRIPING
CK	PROPOSED CONCRETE BUMP STOP

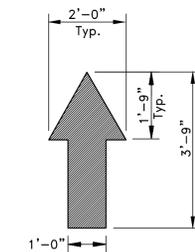
GENERAL NOTES:

- MACHINE CAST
- STEEL REINFORCING
- 5,500 P.S.I.
- 205 lbs.
- 3/4" PIN HOLES
- 8" WIDE DRAIN SLOTS



STANDARD PARKING BUMP STOP DETAIL (CK)

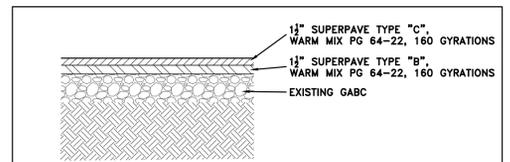
NO SCALE
 DETAIL FOR EXAMPLE (EQUIVALENT MAY BE USED)



NOTE: ALL TRAFFIC FLOW ARROWS TO BE PAINTED WHITE

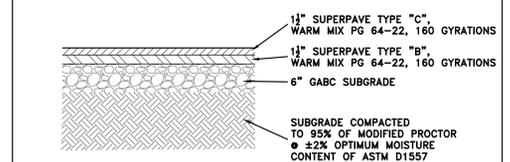
TRAFFIC FLOW ARROW (CH)

SCALE: NOT TO SCALE



PAVEMENT SECTION (MILL & OVERLAY REHAB) (CA)

NO SCALE



PAVEMENT SECTION (FULL DEPTH REHAB) (CE)

NO SCALE