FINAL LAND DEVELOPMENT PLANS
FOR PROPOSED
CENTRE SQUARE COMMONS
BLOCK 4 : LOTS 1-4; BLOCK 5 : LOTS 2-5 AND 9-12
DEKALB PIKE AT SKIPPACK PIKE
WHITPAIN TOWNSHIP
MONTGOMERY COUNTY PENNSYLVANIA

ZONING REQUIREMENTS

PROJECT/MUNICIPALITY :	DEKALB PIKE AT SKIPPACK PIKE WHITPAIN TOWNSHIP MONTGOMERY COUNTY, PENNSYLVANIA
ZONING	C: COMMERCIAL DISTRICT SC: SHOPPING CENTER DISTRICT R1: RESIDENTIAL DISTRICT
EXISTING USE:	UNDEVELOPED LAND RESIDENTIAL OFFICE RESTAURANT
PROPOSED USE:	SHOPPING CENTER
CONDITIONAL USE:	COMMUNITY SHOPPING CENTER OVERLAY DISTRICT ORDINANCE NO. 4-237

CONDITIONAL USE
COMMUNITY SHOPPING CENTER OVERLAY DISTRICT: ORDINANCE No. 4-237

DESCRIPTION	REQUIRED	PROPOSED
TRACT AREA: MINIMUM NET EXCLUDING PENNDOT BASIN PARCEL	18 ACRES	21.78 ACRES 20.95 ACRES
BUILDING COVERAGE	22 PERCENT MAXIMUM	12.1 PERCENT
FRONT SETBACK: ULTIMATE RIGHT OF WAY	25 FEET MINIMUM	75.6 FEET
PROPERTY LINE SETBACK	25 FEET	39.0 FEET
TENANT "A" PROPERTY LINE SETBACK	15 FEET MINIMUM	23.6 FEET
SIDE SETBACK: RESIDENTIAL USE	225 FEET MINIMUM	225.2 FT.
REAR SETBACK: RESIDENTIAL USE	250 FEET MINIMUM	252.8 FT.
PARKING SETBACK: ULTIMATE RIGHT OF WAY PROPERTY LINE	 10 FEET MINIMUM 25 FEET MINIMUM	 12.6 FEET 25.0 FEET
GREEN AREA	35 PERCENT	43.7 PERCENT
SECTION 160-260 C — NO MORE THAN A SINGLE TENANT OR BLDG. OCCUPY MORE THAN 40% OF TOTAL GROUND FLOOR AREA		30.6 PERCENT (BUILDING NO. 1)
SECTION 160-260.D — AT LEAST THREE (3) BUILDINGS BE LOCATED WITHIN 120 FT. OF THE ULTIMATE RIGHT-OF-WAY ALONG ROAD FRONTAGES		BUILDINGS 1, 6 AND 7
SECTION 160-261.A — NO MORE THAN 22% OF THE NET LOT AREA OCCUPIED BY BUILDINGS (AFTER DEDICATION OR DEED RESTRICTION)		16.2 PERCENT
SECTION 160-261.K — IF EATING AND DRINKING ESTABLISHMENTS ARE (AT ANY TIME) TO COMPRISE MORE THAN 30% (33,135 S.F.) OF THE TOTAL SQUARE FOOTAGE OF THE COMMUNITY CENTER A CONDITIONAL USE TO PROVIDE REQUIRED PARKING SPACES MUST BE OBTAINED.		29.7% (32,600 S.F.)

SIGNAGE
COMMUNITY SHOPPING CENTER OVERLAY DISTRICT
SHOPPING CENTER SIGN

ONE (1) TYPE "A" SIGN,GROUND SIGN, PERMITTED PER STREET FRONTAGE

MAXIMUM NUMBER OF SIGNS	2 : ONE PER STREET	2 : ONE PER STREET
MAXIMUM GROUND SIGN AREA:	200 SQ. FT.	200 SQ. FT.

PARKING
SHOPPING CENTER:
4.5 PARKING SPACES PER 1,000 SQ. FT. OF GROUND LEVEL FLOOR AREA (INCLUDES OUTDOOR SEATING AND DAYCARE)
3 PARKING SPACES PER 1,000 SQ. FT. SECOND FLOOR OR MEZZANINE AREA (SUPER MARKET AND FITNESS FACILITY)

BUILDING AREA	110,450 SQ. FT.	497.0 SPACES	
OUTDOOR SEATING AREA	5,200 SQ. FT.	23.4 SPACES	
MEZZANINE AREA	11,500 SQ. FT.	34.5 SPACES	
		554.9 SPACES REQUIRED	555 SPACES PROVIDED
PARKING SPACE SIZE		9 1/2 FT. x 19 FT. MINIMUM	9 1/2 FT. x 19 FT. 9 1/2 FT. x 17 FT.@ LANDSCAPING
PARKING GREEN AREA PARKING AREA: 163,044 SQ. FT.		10 PERCENT MINIMUM 16,304 SQ. FT.	10.2 PERCENT 16,612 SQ. FT.

SITE DATA

TRACT AREA	21.78+/- ACRES
NET TRACT AREA	20.95+/- ACRES (EXCLUDING PENNDOT BASIN PARCEL)
BUILDING AREA	110,450 SQ. FT. (INCLUDING 27,600 SQ. FT. OF RESTAURANT)
IMPERVIOUS AREA	514,055 SQ. FT. (56.3 PERCENT)
GREEN AREA	394,658 SQ. FT. (43.2 PERCENT)

LANDSCAPING DATA

STREET TREES EVERY 50 FT. (935 LF OF FRONTAGE)	18 TREES REQUIRED	17 TREES PROPOSED
PARKING LOT SHADE TREES 1 SHADE TREE PER 10 STALLS	56 TREES REQUIRED	67 TREES PROPOSED

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6 OF 38	OVERALL GRADING AND DRAINAGE PCSM PLAN AND NOTES
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33 OF 38	SPRAY IRRIGATION: PCSM PUMP AND DETAIL PLAN
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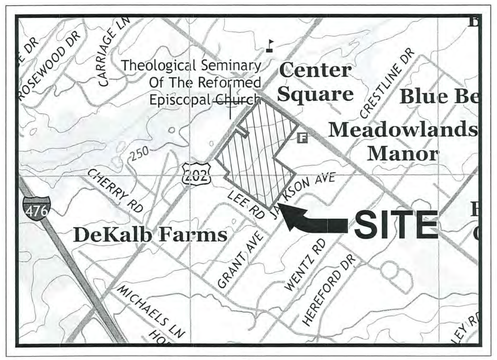
LEGEND

	EXISTING	PROPOSED
CONCRETE CURB		
CONCRETE DEP. CURB		
TRAFFIC FLOW		
I.D. SIGN		
SIGN		
ENTER AND EXIT SIGNS		
POLE MOUNTED LIGHT		
UTILITY POLE		
TRANSFORMER		
CHAIN FENCE		
BOARD-ON-BOARD FENCE		
WALL		
BUILDING ENTRANCE		
FIRE HYDRANT		
WATER VALVE		
GAS VALVE		
CONTOUR	89	89
SPOT ELEVATION	× 96.7	× 100.00
UNMARKED MANHOLE		

	EXISTING	PROPOSED
ELECTRICAL MANHOLE		
DRAINAGE MANHOLE		
SANITARY MANHOLE		
TELEPHONE MANHOLE		
MONITORING WELL		
TYPE 'B' INLET		
DBL. 'B' INLET		
TYPE 'E' INLET		
DBL. 'E' INLET		
ROOF LEADER W/C.O.		
FLARED END SECTION		
WATER MAIN	W	W
GAS MAIN	G	
SANITARY LATERAL	S	
ELECTRIC	E	
TELEPHONE	T	
UNDER GROUND FIBER OPTIC LINE	FO	
DRAINAGE FLOW ARROW		

APPLICANT/EQUITABLE OWNER
MADISON DEVELOPMENT GROUP, INC AND
CENTER SQUARE COMMONS, LP
ATTN:JOHN MCKENNA
PO BOX 507
SOUTHEASTERN, PA 19399
PHONE: 215-568-9495
FAX: 215-359-1370



N W E S

USGS QUADRANGLE: LANSDALE, PENNSYLVANIA, U.S.

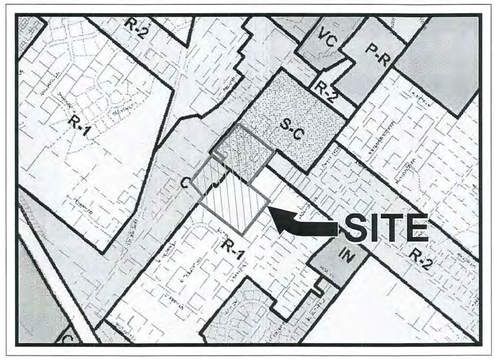
VICINITY/USGS MAP

SCALE: 1" = 1000' (APPROXIMATE)

GRAPHIC SCALE

1000 0 500 1000 2000 4000

(IN FEET)
1 inch = 1000 ft.



N W E S

ZONING MAP

SCALE: 1" = 1000' (APPROXIMATE)

GRAPHIC SCALE

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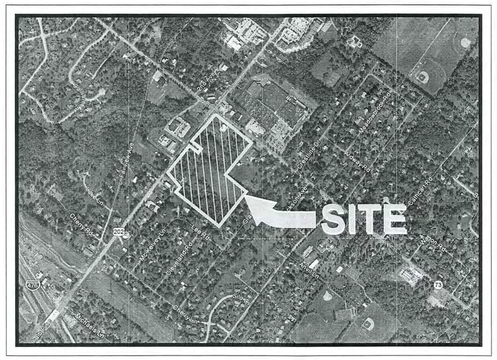
(IN FEET)
1 inch = 1000 ft.



N W E S

AERIAL MAP

SCALE: 1" = 1000' (APPROXIMATE)

GRAPHIC SCALE

1000 0 500 1000 2000 4000

(IN FEET)
1 inch = 1000 ft.

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2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	1/13/16	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
RUSSELL T. McFALL II

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
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email: solutions@maserconsulting.com

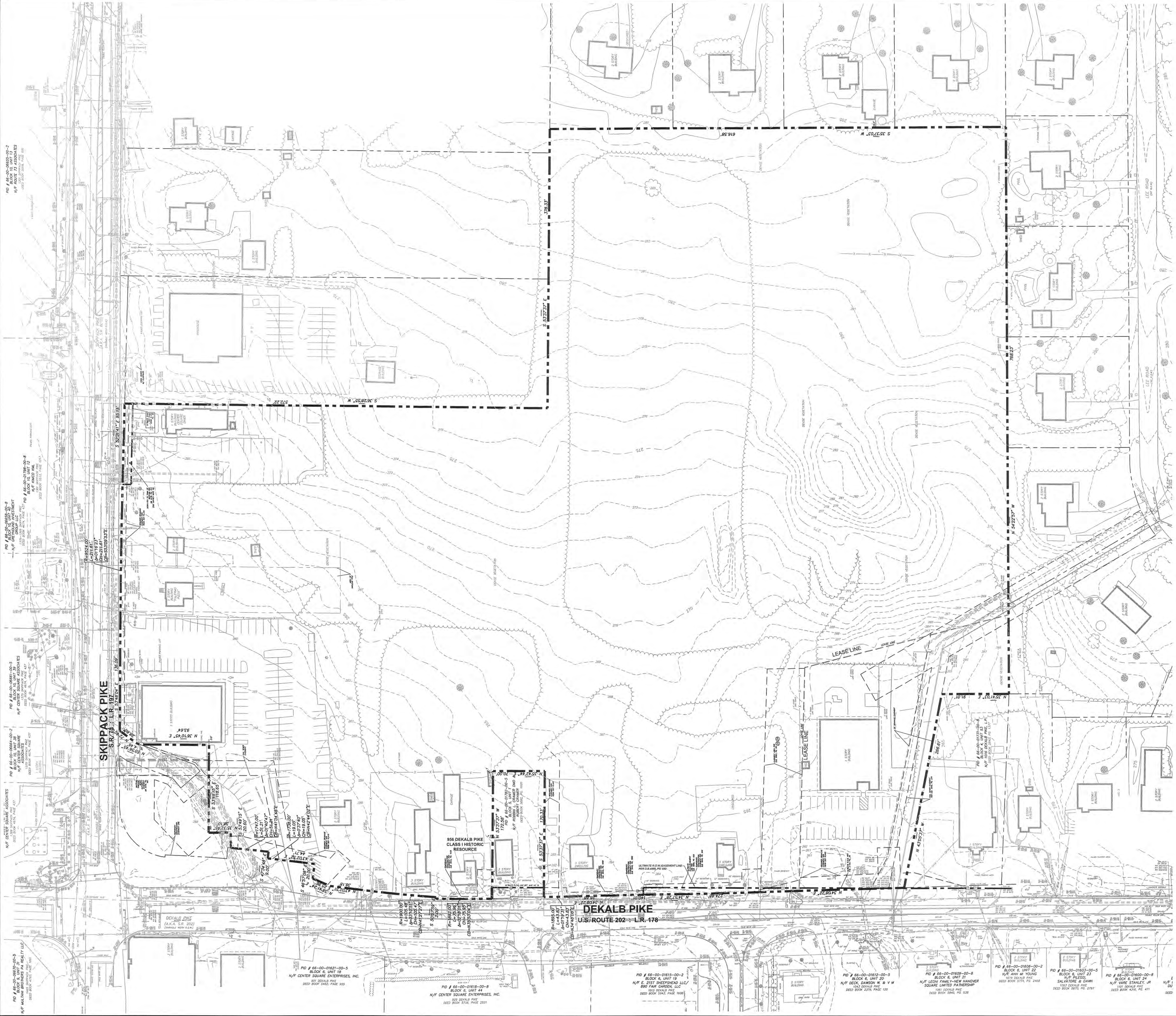
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM

PROJECT NUMBER: 12000830A
DRAWING NAME: C-CVER

SHEET TITLE:
COVER SHEET

SHEET NUMBER:
1 of 38

LD 3-15 & 5-3-15



GENERAL NOTES

1. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION HAS BEEN PROVIDED TO THE BEST ABILITY OF THE ENGINEER, HOWEVER, THE CONTRACTOR IS ADVISED TO VERIFY IN THE FIELD ALL THE FACTORS CONCERNING THE LOCATION OF ALL UTILITIES PRIOR TO BIDDING AND CONSTRUCTION. LOCATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS ARE TO BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR.
2. DO NOT SCALE DRAWINGS AS THEY PERTAIN TO ADJACENT AND SURROUNDING PHYSICAL CONDITIONS, BUILDINGS, STRUCTURES, ETC. THEY ARE SCHEMATIC ONLY, EXCEPT WHERE DIMENSIONS ARE SHOWN THERETO.
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4. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD OR SOIL CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE OR INEFFECTIVE.
5. HORIZONTAL DATUM IS NAD 1983 PA STATE PLANE COORDINATE SYSTEM. VERTICAL DATUM IS USGS 1929. VERTICAL RELIEF IS SHOWN AT A CONTOUR OF 1' ESTABLISHED BY AERIAL PHOTOGRAPHIC MAPPING PROVIDED BY PROMAPS BASED ON A PHOTOGRAPHY DATED 12-4-14 AND GROUND SURVEY WITHIN THE ROADWAYS.
6. EXISTING SITE FEATURES AND TOPOGRAPHIC DATA FROM ALTA/ACSM LAND TITLE SURVEY PREPARED FOR CENTRE SQUARE COMMONS BY MASER CONSULTING P.A., JOB NUMBER 12000830A/HASU032176, PLAN DATED JANUARY 21, 2015.
7. PURSUANT TO SECTION 129-58.C.(4)(a) OF THE TOWNSHIP CODE, THERE ARE NO HERITAGE TREES AS IDENTIFIED IN THE WHITPAIN TOWNSHIP "2009 HERITAGE TREE REGISTRY" LOCATED ON THE PROPERTIES THAT COMPRISE THE OVERALL TRACT.
8. PURSUANT TO SECTION 129-58.c.(4)(b) OF THE TOWNSHIP CODE, 956 DEKALB PIKE IS LISTED AS A CLASS I HISTORIC RESOURCE IN THE "WHITPAIN TOWNSHIP HISTORIC PROPERTIES".

LEGEND

EXISTING	EXISTING
CONCRETE CURB	ELECTRICAL MANHOLE
CONCRETE DEP. CURB	DRAINAGE MANHOLE
TRAFFIC FLOW	SANITARY MANHOLE
I.D. SIGN	TELEPHONE MANHOLE
SIGN	MONITORING WELL
ENTER AND EXIT SIGNS	TYPE 'B' INLET
POLE MOUNTED LIGHT	DBL. 'B' INLET
UTILITY POLE	TYPE 'E' INLET
TRANSFORMER	DBL. 'E' INLET
CHAIN FENCE	ROOF LEADER W/C.O.
BOARD-ON-BOARD FENCE	FLARED END SECTION
WALL	WATER MAIN
BUILDING ENTRANCE	GAS MAIN
FIRE HYDRANT	SANITARY LATERAL
WATER VALVE	ELECTRIC
GAS VALVE	TELEPHONE
CONTOUR	UNDER GROUND FIBER OPTIC LINE
SPOT ELEVATION	DRAINAGE FLOW ARROW
UNMARKED MANHOLE	

SCALE : 1" = 60'

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RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

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FOR

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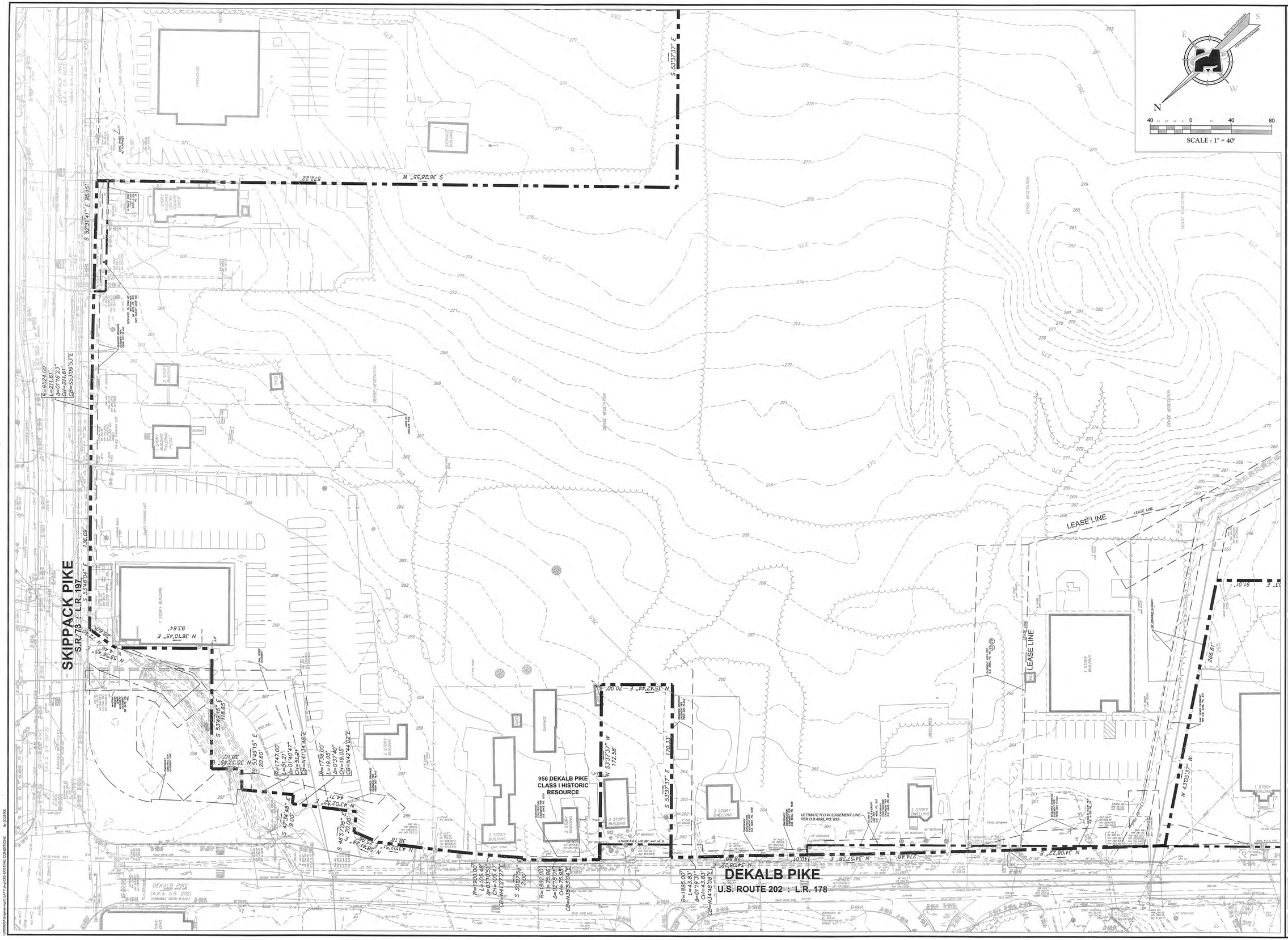
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-LAYT		

SHEET TITLE: OVERALL EXISTING CONDITIONS AND NOTES

12000830A\Engineering\C-LAYT.dwg\C02-OVERALL EXISTING CONDITIONS By: JDUMKE



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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
RUSSELL T. McFALL II

RUSSELL T. McFALL II
PENNSYLVANIA LICENSE NUMBER: PE060408
ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS

FOR

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DEKALB PIKE AT SKIPPACK PIKE

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AS SHOWN	06/10/15	DIII	RTM

PROJECT NUMBER:	DRAWING NAME:
12000830A	C-LAYT

SHEET TITLE:

EXISTING CONDITIONS PLAN

SHEET NUMBER:

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GENERAL NOTES

1. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION HAS BEEN PROVIDED TO THE BEST ABILITY OF THE ENGINEER, HOWEVER, THE CONTRACTOR IS ADVISED TO VERIFY IN THE FIELD ALL THE FACTORS CONCERNING THE LOCATION OF ALL UTILITIES PRIOR TO BIDDING AND CONSTRUCTION. LOCATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS ARE TO BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR.
2. THIS SET OF PLANS HAS BEEN PREPARED FOR PURPOSE OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OR APPROVALS HAVE BEEN SATISFIED ON THE DRAWINGS AND EACH DRAWING HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION". THE CLIENT OR OWNER AND CONTRACTOR ARE RESPONSIBLE TO ASSURE THAT THE APPROVED PLANS ONLY, ARE USED FOR BIDDING AND CONSTRUCTION.
3. DO NOT SCALE DRAWINGS AS THEY PERTAIN TO ADJACENT AND SURROUNDING PHYSICAL CONDITIONS, BUILDINGS, STRUCTURES, ETC. THEY ARE SCHEMATIC ONLY, EXCEPT WHERE DIMENSIONS ARE SHOWN THERETO.
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5. FINAL LOCATIONS, NUMBERS AND SIZE OF ALL PROPOSED UTILITIES SERVICING BUILDINGS ARE TO BE VERIFIED WITH THE ARCHITECT, OWNER AND APPROPRIATE UTILITY AUTHORITY BY THE CONTRACTOR.
6. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:
   A. PENNSYLVANIA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AS CURRENTLY AMENDED.
   B. CURRENT PREVAILING WHITPAIN TOWNSHIP SPECIFICATIONS, STANDARDS AND REQUIREMENTS.
   C. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY AND OWNER SPECIFICATIONS, STANDARDS AND REQUIREMENTS.
7. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD OR SOIL CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE OR INEFFECTIVE.
8. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL APPROPRIATE SAFETY DEVICES AND TRAINING TO ALL WORKERS IN ORDER TO MAINTAIN SAFE CONDITIONS ON THE PROJECT SITE.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED CONSTRUCTION PERMITS NECESSARY FOR THE CONSTRUCTION AND COMPLETION OF THE APPROVED IMPROVEMENTS.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER REMOVAL AND DISPOSAL OF ANY AND ALL EXISTING OBJECTS, STRUCTURES, ETC. THAT ARE IN THE WAY OF PROPOSED CONSTRUCTION, OR INDICATED AS 'TO BE REMOVED'.
11. ALL PROPOSED SPOT ELEVATIONS ARE GRADE OR BOTTOM OF CURB UNLESS OTHERWISE NOTED.
12. WALKWAYS ARE TO SLOPE AWAY FROM BUILDINGS AT A MAXIMUM PITCH OF ¼ INCH PER FOOT. HANDICAP RAMPS ARE TO HAVE A MAXIMUM SLOPE OF 1" PER FOOT.
13. THE CONTRACTOR SHALL TAKE ADDITIONAL PRECAUTIONS TO WATERPROOF AREAS WHERE THE EXTERIOR FINISHED GRADE IS HIGHER THAN THE FINISHED FLOOR ELEVATION. ALTERNATELY, FOUNDATION WALLS IN EXCESS OF 6" BELOW FINISHED FLOOR SHALL BE FINISHED SUITABLY.
14. THE APPLICANT TO PROVIDE PRIVATE TRASH CARTING FOR THE PROPOSED FACILITIES AND WILL COMPLY WITH ALL RECYCLING REQUIREMENTS OF THE MUNICIPALITY, COUNTY AND STATE.
15. ALL DIMENSIONS LABELED ARE IN UNITED STATES STANDARD.
16. ALL ELECTRIC, TELEPHONE, AND CABLE TV UTILITY DISTRIBUTION LINES SHALL BE INSTALLED UNDERGROUND.
17. ALL STORMWATER BMP'S AND STORMWATER MANAGEMENT FACILITIES ARE TO BE PERMANENT FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY THE TOWNSHIP OF A REVISED PLAN WHICH SHALL BE APPLICABLE TO ALL FUTURE OWNERS OF THIS PROPERTY.
18. THE PROPERTY IS SERVICED BY PUBLIC WATER AND PUBLIC SEWER.
19. EXISTING SITE FEATURES AND TOPOGRAPHIC DATA FROM ALTA/ACSM LAND TITLE SURVEY PREPARED FOR CENTRE SQUARE COMMONS BY MASER CONSULTING P.A., JOB NUMBER 12000830A/HASUO32176, PLAN DATED JANUARY 21, 2015.
20. A HIGHWAY OCCUPANCY PERMIT IS REQUIRED PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945, KNOWN AS THE "STATE HIGHWAY LAW", BEFORE DRIVEWAY ACCESS TO A STATE HIGHWAY IS PERMITTED.
21. THE OPEN SPACE AS SHOWN IS TO BE DEED RESTRICTED AGAINST DEVELOPMENT AND REMAIN AS OPEN SPACE.
22. WHITPAIN TOWNSHIP HAS THE RIGHT TO INSPECT ALL STORMWATER BMP'S INSTALLED ON SITE AT ANY TIME.
23. SANITARY SEWER LINES AND LATERALS WIL BE PRIVATELY OWNED.
24. NO PLANTINGS OR STRUCTURES SHOULD BE LOCATED WITHIN 10 FEET OF THE SANITARY SEWERS OR LATERALS.

APPLICANT/EQUITABLE OWNER

MADISON DEVELOPMENT GROUP, INC. AND
CENTER SQUARE COMMONS, LP
ATTN:JOHN MCKENNA
PO BOX 507
SOUTHEASTERN, PA 19399
PHONE:215-568-9495
FAX:215-359-1370

N E S W

60 48 36 24 12 0 30 60 120

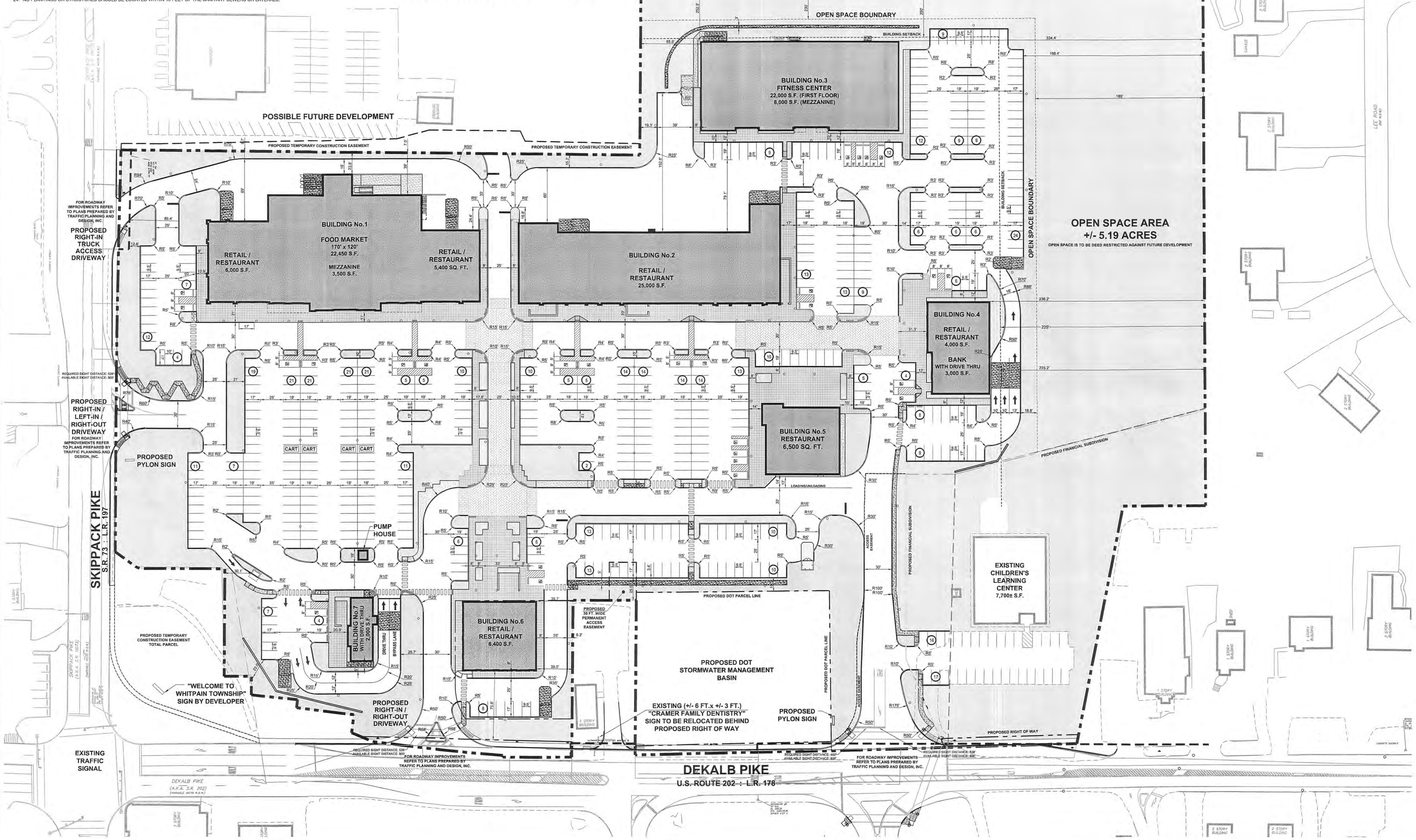
SCALE : 1" = 60'

THE LANDOWNER ACKNOWLEDGES THAT THE STORMWATER BMPS AS SHOWN AS A PART OF THE LAND DEVELOPMENT PLANS ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY WHITPAIN TOWNSHIP.

LANDOWNER

GREEN AREA

PARKING GREEN AREA	
PARKING AREA TOTAL:	163,044 S.F.
PARKING GREEN AREA REQUIRED:	16,304 S.F.
PARKING GREEN AREA PROVIDED:	16,612 S.F.



ZONING REQUIREMENTS

PROJECT/MUNICIPALITY :	DEKALB PIKE AT SKIPPACK PIKE WHITPAIN TOWNSHIP MONTGOMERY COUNTY, PENNSYLVANIA	
ZONING	C: COMMERCIAL DISTRICT SC: SHOPPING CENTER DISTRICT R1: RESIDENTIAL DISTRICT	
EXISTING USE:	UNDEVELOPED LAND RESIDENTIAL OFFICE RESTAURANT	
PROPOSED USE: CONDITIONAL USE:	SHOPPING CENTER COMMUNITY SHOPPING CENTER OVERLAY DISTRICT ORDINANCE NO. 4-237	

CONDITIONAL USE
COMMUNITY SHOPPING CENTER OVERLAY DISTRICT: ORDINANCE No. 4-237

DESCRIPTION	REQUIRED	PROPOSED
TRACT AREA: MINIMUM NET EXCLUDING PENNDOT BASIN PARCEL	18 ACRES	21.78 ACRES 20.95 ACRES
BUILDING COVERAGE	22 PERCENT MAXIMUM	12.1 PERCENT
FRONT SETBACK: ULTIMATE RIGHT OF WAY	25 FEET MINIMUM	75.6 FEET
PROPERTY LINE SETBACK	25 FEET	39.0 FEET
TENANT "A" PROPERTY LINE SETBACK	15 FEET MINIMUM	23.6 FEET
SIDE SETBACK: RESIDENTIAL USE	225 FEET MINIMUM	225.2 FT.
REAR SETBACK: RESIDENTIAL USE	250 FEET MINIMUM	252.9 FT.
PARKING SETBACK		
ULTIMATE RIGHT OF WAY	10 FEET MINIMUM	12.6 FEET
PROPERTY LINE	25 FEET MINIMUM	25.0 FEET
GREEN AREA	35 PERCENT	43.7 PERCENT
SECTION 160-260.C	NO MORE THAN A SINGLE TENANT OR BLDG. OCCUPY MORE THAN 40% OF TOTAL GROUND FLOOR AREA	30.6 PERCENT (BUILDING NO. 1)
SECTION 160-260.D	AT LEAST THREE (3) BUILDINGS BE LOCATED WITHIN 120 FT. OF THE ULTIMATE RIGHT-OF-WAY ALONG ROAD FRONTAGES	BUILDINGS 1, 6 AND 7
SECTION 160-261.A	NO MORE THAN 22% OF THE NET LOT AREA OCCUPIED BY BUILDINGS (AFTER DEDICATION OR DEED RESTRICTION)	16.2 PERCENT
SECTION 160-261.K	IF EATING AND DRINKING ESTABLISHMENTS ARE (AT ANY TIME) TO COMPRISE MORE THAN 30% (33,135 S.F.) OF THE TOTAL SQUARE FOOTAGE OF THE COMMUNITY CENTER A CONDITIONAL USE TO PROVIDE REQUIRED PARKING SPACES MUST BE OBTAINED.	29.7% (32,800 S.F.)

SIGNAGE
COMMUNITY SHOPPING CENTER OVERLAY DISTRICT
SHOPPING CENTER SIGN

ONE (1) TYPE "A" SIGN,GROUND SIGN, PERMITTED PER STREET FRONTAGE		
MAXIMUM NUMBER OF SIGNS	2 : ONE PER STREET	2 : ONE PER STREET
MAXIMUM GROUND SIGN AREA:	200 SQ. FT.	200 SQ. FT.

PARKING
SHOPPING CENTER:
4.5 PARKING SPACES PER 1,000 SQ. FT. OF GROUND LEVEL FLOOR AREA (INCLUDES OUTDOOR SEATING AND DAYCARE)
3 PARKING SPACES PER 1,000 SQ. FT. SECOND FLOOR OR MEZZANINE AREA (SUPER MARKET AND FITNESS FACILITY)

BUILDING AREA	110,450 SQ. FT.	497.0 SPACES	
OUTDOOR SEATING AREA	5,200 SQ. FT.	23.4 SPACES	
MEZZANINE AREA	11,500 SQ. FT.	34.5 SPACES	
		554.9 SPACES REQUIRED	555 SPACES PROVIDED
PARKING SPACE SIZE		9 1/2 FT. x 19 FT. MINIMUM	9 1/2 FT. x 19 FT. 9 1/2 FT. x 17 FT.@ LANDSCAPING
PARKING GREEN AREA PARKING AREA: 163,044 SQ. FT.		10 PERCENT MINIMUM 16,304 SQ. FT.	10.2 PERCENT 16,612 SQ. FT.

SITE DATA

TRACT AREA	21.78+/- ACRES
NET TRACT AREA	20.95+/- ACRES (EXCLUDING PENNDOT BASIN PARCEL)
BUILDING AREA	110,450 SQ. FT. (INCLUDING 27,600 SQ. FT. OF RESTAURANT)
IMPERVIOUS AREA	514,085 SQ. FT. (56.3 PERCENT)
GREEN AREA	394,858 SQ. FT. (43.2 PERCENT)

LANDSCAPING DATA

STREET TREES EVERY 50 FT. (805 LF OF FRONTAGE)	16 TREES REQUIRED	17 TREES PROPOSED
PARKING LOT SHADE TREES 1 SHADE TREE PER 10 STALLS	56 TREES REQUIRED	67 TREES PROPOSED

DESIGN WAIVERS REQUESTED

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE : CHAPTER 129

129-15.C SIDEWALKS SHALL BE LOCATED IN THE SHOULDER STRIP AND SIX FEET FROM THE CURB TO THE NEAR EDGE OF THE SIDEWALK.
WAIVER TO ALLOW SIDEWALK TO BE CONSTRUCTED ADJACENT TO THE CURB.

(129-19.A)(129-19.D.3.) WAIVER OF THE LISTED SECTIONS. LANDSCAPING HAS BEEN PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OUTLINED IN THE "COMMUNITY SHOPPING CENTER OVERLAY DISTRICT"

129-20.E.(2) SITE GRADING OR SITE DISTURBANCE SHALL NOT OCCUR WITHIN FIVE FEET OF THE PARCEL BOUNDARY LINE.
WAIVER TO ALLOW GRADING AND SITE DISTURBANCE WITHIN FIVE FEET OR PARCEL BOUNDARY.

129-20.E.(5) WHEN THE SLOPE OF GROUND EXCEEDS ONE VERTICAL TO FOUR HORIZONTAL, THE SLOPE SHALL BE SODDED OR PLANTED WITH PLANTS A MINIMUM OF SIX INCHES IN LENGTH IN CONFORMANCE WITH THE SPECIFICATIONS OF THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408. SUCH SLOPES SHALL NOT BE SEEDED.
WAIVER TO ALLOW SLOPES OF 1 VERTICAL TO 3 HORIZONTAL TO BE SEEDED AND JUTE MATTING APPLIED.

129-21.C. STORM DRAINS SHALL HAVE A MINIMUM DIAMETER OF 18 INCHES .
WAIVER TO ALLOW STORM DRAINS 12 INCHES IN DIAMETER.

129-58.B.(1) NO LETTERING OR PRINTING SHALL BE LESS THAN 1/10 OF AN INCH IN HEIGHT.
WAIVER TO ALLOW PLAN TEXT SMALLER THAN 1/10 OF AN INCH IN HEIGHT. (6 POINT: +/- 1\16 INCH)

129-58.C.(1) THE PLAN SHALL SET FORTH EXISTING FEATURES OF THE LAND WITH 400 FEET OF ANY PART OF THE LAND TO BE SUBDIVIDED OR DEVELOPED.
WAIVER FROM SHOWING EXISTING FEATURES WITHIN LESS THAN 400 FEET OF THE SUBJECT SITE.

129-58.C.(2) THE PLAN SHALL INCLUDE EXISTING CENTER-LINE COURSES, DISTANCES AND CURVE DATA, PAVING WIDTHS AND CURBLINES, RIGHT-OF-WAY AND CURBLINE RADII AT INTERSECTIONS AND STREET LOCATION TIE-INS BY COURSES AND DISTANCES TO THE NEAREST INTERSECTION OF EXISTING AND PLANNED STREETS.
WAIVER FROM SHOWING COMPLETE EXISTING STREET DATA AS LISTED. PLANS SHOW RIGHT-OF-WAY DATA AND EXISTING ROADWAY FEATURES PER CURRENT PHYSICAL SURVEY PREPARED BY MASER CONSULTING P.A.

129-58.C.(5) MEASURED DISTANCES FROM THE CENTER LINE OF STREETS TO BUILDINGS, LARGE TREES STANDING ALONE OR OTHER CONTROL POINTS AND THE LOCATION OF ALL MONUMENTS WITH REFERENCE TO THEM.
WAIVER FROM SHOWING DISTANCES FROM THE CENTER LINE OF STREETS. BUILDINGS ARE DIMENSIONED TO STREET RIGHT OF WAY LINE OR PROPERTY LINE.

I HEREBY CERTIFY THAT ______________________________ IS THE DEVELOPER OF THE LAND HEREIN SUBDIVIDED OR TO BE DEVELOPED AND THAT I DO HEREBY ADOPT THIS PLAN.

____
(TITLE)

APPROVED BY THE WHITPAIN TOWNSHIP PLANNING COMMISSION THIS ___ DAY OF__________, 2015.

____
SECRETARY
WHITPAIN TOWNSHIP
PLANNING COMMISSION

APPROVED BY THE TOWNSHIP ENGINEER ON THE DAY OF ______________________, 2015.

____
TOWNSHIP ENGINEER

APPROVED BY THE BOARD OF SUPERVISORS OF WHITPAIN TOWNSHIP THIS ____ DAY OF ____________, 2015.

____
CHAIRMAN

____
SECRETARY

STATE OF PENNSYLVANIA
COUNTY OF MONTGOMERY

ON THIS, THE ______ DAY OF________________, 2015, BEFORE ME, ________________________, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED ____________________________ WHO ACKNOWLEDGED HIMSELF TO BE THE __________________ OF ______________________, A CORPORATION, AND THAT HE AS SUCH ____________________________, BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSE THEREIN CONTAINED BY SIGNING THE NAME OF THE CORP[ORATION BY HIMSELF AS ____________________________________.

WITNESS MY HAND AND NOTARY SEAL THE DAY AND YEAR AFORESAID.

____
NOTARY PUBLIC
MY COMMISSION EXPIRES
______________________, 20_____

RECORDED THIS _______ DAY OF _____________________, 2015 IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC., IN AND FOR THE COUNTY OF MONTGOMERY, PENNSYLVANIA
IN PLAN FILE CASE __________ D.B. NO ____________ PAGE __________.

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REV	DATE	DRAWN BY	DESCRIPTION
1	09/11/15	CJR	REVISED PER MCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. McFALL II PE-060408

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

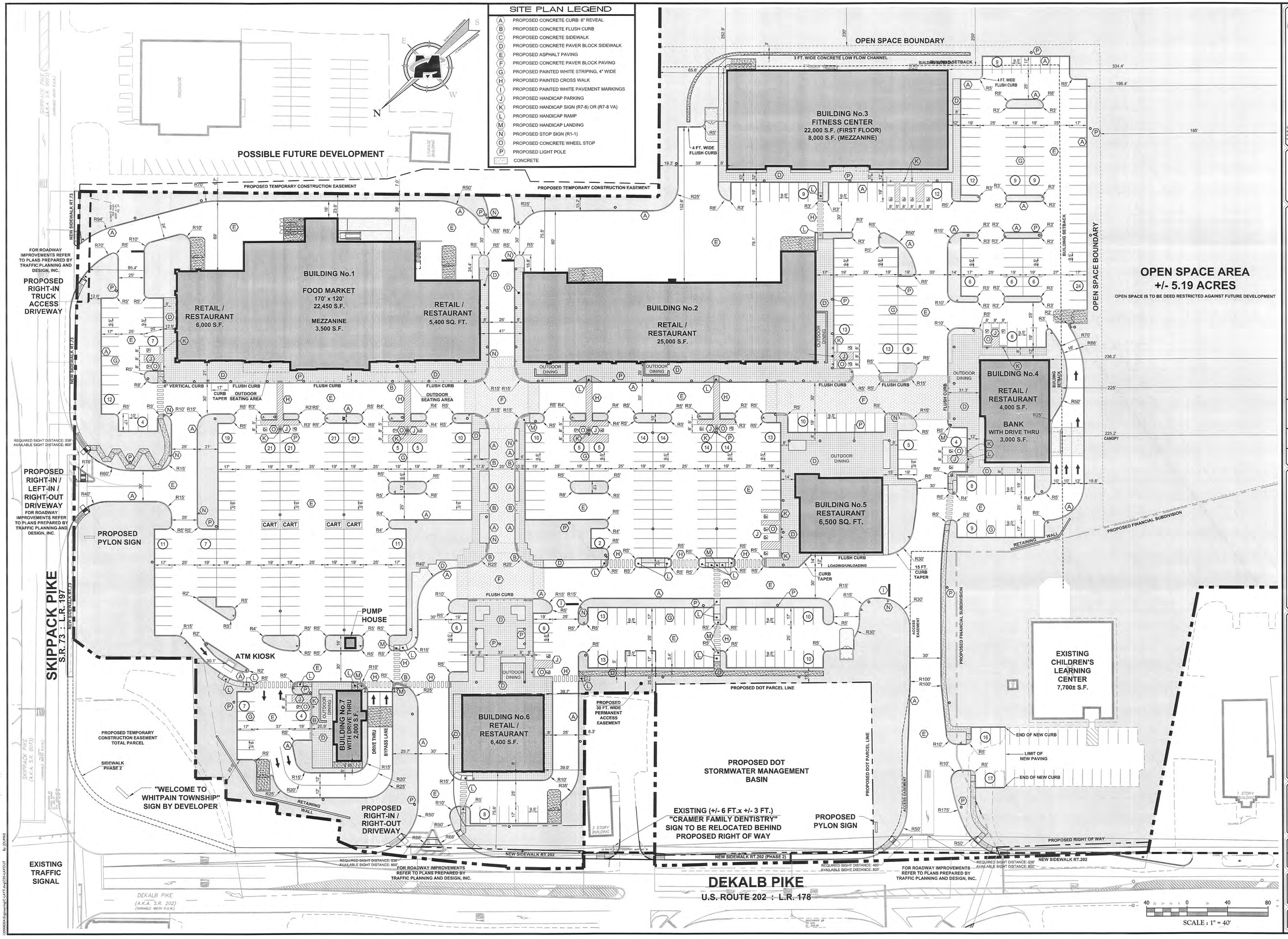
EXTON OFFICE
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
Phone: 610.254.9140
Fax: 610.254.9141
email: solutions@maserconsulting.com

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM

PROJECT NUMBER:	DRAWING NAME:
12000830A	C-LAYT

SHEET TITLE:
OVERALL SITE PLAN AND NOTES

12000830A\Engineering\C-LAYT.dwg\C04-OVERALL LAYOUT By: JDUMKE



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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER
RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
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AS SHOWN	06/10/15	DIII	RTM

PROJECT NUMBER:	DRAWING NAME:
12000830A	C-LAYT

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
5 of 38

12000830A Engineering\CAD\LAYT-Jeg\C5-LAYOUT By: jDUPKE

CRITICAL STAGE / SEQUENCE OF UNDERGROUND STORMWATER BASIN INSTALLATION

CRITICAL STAGE #1: COMMENCE INSTALLATION OF UNDERGROUND DETENTION FACILITY NO. 1(BMP)
A. CONTRACTOR TO INSTALL CONSTRUCTION FENCE AROUND THE ENTIRE UNDERGROUND DETENTION AREA AND PROTECT THE AREA AT ALL TIMES.
B. INSTALL OUTLET STRUCTURE AND OUTLET PIPE. CONSTRUCTION FENCE WHICH HAS BEEN REMOVED FOR THIS STAGE OF CONSTRUCTION MUST BE RE-INSTALLED AND STABILIZED AT THE END OF THE WORKING DAY.
C. INSTALL THE UNDERGROUND DETENTION SYSTEM AS INDICATED ON THE DETAIL SHEET.

CRITICAL STAGE #1a: COMMENCE INSTALLATION OF IRRIGATION SYSTEM(BMP)
A. CONTRACTOR SHALL MAKE THEMSELVES FAMILIAR WITH ALL ASPECTS OF THE PCSM SYSTEM.
B. PRIOR TO ANY TRENCHING, CONSTRUCTION OR INSTALLATION, THE CONTRACTOR SHALL FLAG OUT AREA TO ENSURE LOCATION OF THE PIPE, SPRINKLER HEADS VALVES, ETC.
C. INSTALL WET WELL AND INTAKE PIPE AND SCREEN.
D. INSTALL PUMP STATION.
E. INSTALL ROAD AND PARKING LOT SLEEVES.
F. INSTALL MAINS, LATERALS, VALVES AND COMMUNICATION CABLE, SENSORS AND SPRINKLER HEADS.
G. TEST SYSTEM AND ADJUST SPRINKLER HEADS AS NECESSARY.
* FOR ADDITIONAL DETAIL, SEE PCSM NARRATIVE FOR IRRIGATION SYSTEM DESIGN AND IRRIGATION LAYOUT.

CRITICAL STAGE #2: COMMENCE INSTALLATION OF UNDERGROUND DETENTION FACILITY NO. 2(BMP)
A. CONTRACTOR TO INSTALL CONSTRUCTION FENCE AROUND THE ENTIRE UNDERGROUND DETENTION AREA AND PROTECT THE AREA AT ALL TIMES.
B. INSTALL OUTLET STRUCTURE AND OUTLET PIPE. CONSTRUCTION FENCE WHICH HAS BEEN REMOVED FOR THIS STAGE OF CONSTRUCTION MUST BE RE-INSTALLED AND STABILIZED AT THE END OF THE WORKING DAY.
C. INSTALL THE UNDERGROUND DETENTION SYSTEM AS INDICATED ON THE DETAIL SHEET.
D. CONNECT BASIN NO. 2 TO BASIN NO. 1.

NPDES PCSM NOTES

EVIDENCE THE PCSM PLAN WILL PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL,
BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING
- **THE PROPOSED SITE DESIGN HAS MAINTAINED THE EXISTING ON-SITE DRAINAGE CHANNELS.**
- **STORMWATER MANAGEMENT FACILITIES HAVE BEEN PROVIDED TO MAINTAIN RATE, VOLUME AND QUALITY CONTROLS**
- **THE UNDERGROUND STORMWATER FACILITIES AS WELL AS THE USE OF SPRAY IRRIGATION WILL HELP MAINTAIN THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM**

MANNER IN WHICH THE PCSM PLAN WILL MINIMIZE IMPERVIOUS AREAS
- **24.8 PERCENT OF THE OVERALL TRACT IS DEDICATED AS OPEN SPACE**
- **AFTER DEVELOPMENT THE SITE WILL CONTAIN 9.13 ACRES OF GREEN AREA**

MANNER IN WHICH THE PCSM PLAN WILL MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION
- **THE PROPOSED SITE DESIGN HAS MAINTAINED THE EXISTING ON-SITE DRAINAGE CHANNELS.**

EVIDENCE IN WHICH THE PCSM PLAN WILL MINIMIZE LAND CLEARING AND LAND GRADING
- **A "LIMIT OF DISTURBANCE" IS SHOWN ON THE PLANS THAT MAXIMIZES THE PROTECTION OF EXISTING VEGETATION**

EVIDENCE THE PCSM WILL MINIMIZE SOIL COMPACTION
- **A "LIMIT OF DISTURBANCE" IS SHOWN ON THE PLANS TO MINIMIZE THE EXTENT OF EARTH DISTURBANCE AND COMPACTION**
- **"FILL MATERIALS, PLACEMENT AND COMPACTION NOTES" ARE SHOWN ON THE PLANS**

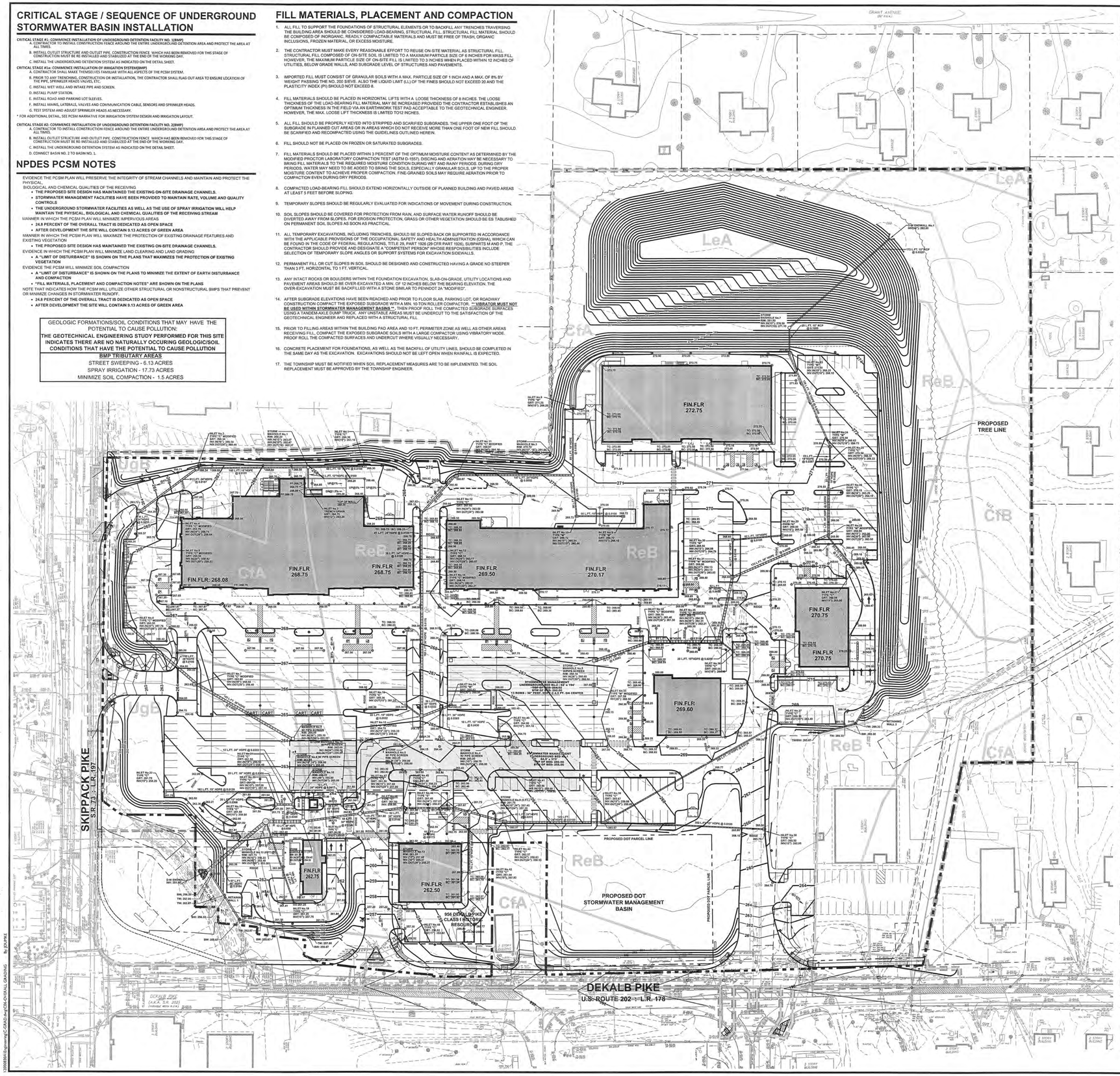
NOTE THAT INDICATES HOW THE PCSM WILL UTILIZE OTHER STRUCTURAL OR NONSTRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF.
- **24.8 PERCENT OF THE OVERALL TRACT IS DEDICATED AS OPEN SPACE**
- **AFTER DEVELOPMENT THE SITE WILL CONTAIN 9.13 ACRES OF GREEN AREA**

GEOLOGIC FORMATIONS/SOIL CONDITIONS THAT MAY HAVE THE POTENTIAL TO CAUSE POLLUTION:
THE GEOTECHNICAL ENGINEERING STUDY PERFORMED FOR THIS SITE INDICATES THERE ARE NO NATURALLY OCCURING GEOLOGIC/SOIL CONDITIONS THAT HAVE THE POTENTIAL TO CAUSE POLLUTION

BMP TRIBUTARY AREAS
STREET SWEEPING - 6.13 ACRES
SPRAY IRRIGATION - 17.73 ACRES
MINIMIZE SOIL COMPACTION - 1.5 ACRES

FILL MATERIALS, PLACEMENT AND COMPACTION

1. ALL FILL TO SUPPORT THE FOUNDATIONS OF STRUCTURAL ELEMENTS OR TO BACKFILL ANY TRENCHES TRAVERSING THE BUILDING AREA SHOULD BE CONSIDERED LOAD-BEARING, STRUCTURAL FILL. STRUCTURAL FILL MATERIAL SHOULD BE COMPOSED OF INORGANIC, READILY COMPACTABLE MATERIALS AND MUST BE FREE OF TRASH, ORGANIC INCLUSIONS, FROZEN MATERIAL, OR EXCESS MOISTURE.
2. THE CONTRACTOR MUST MAKE EVERY REASONABLE EFFORT TO REUSE ON-SITE MATERIAL AS STRUCTURAL FILL. STRUCTURAL FILL COMPOSED OF ON-SITE SOIL IS LIMITED TO A MAXIMUM PARTICLE SIZE OF 6 INCHES FOR MASS FILL; HOWEVER, THE MAXIMUM PARTICLE SIZE OF ON-SITE FILL IS LIMITED TO 3 INCHES WHEN PLACED WITHIN 12 INCHES OF UTILITIES, BELOW GRADE WALLS, AND SUBGRADE LEVEL OF STRUCTURES AND PAVEMENTS.
3. IMPORTED FILL MUST CONSIST OF GRANULAR SOILS WITH A MAX. PARTICLE SIZE OF 1 INCH AND A MAX. OF 8% BY WEIGHT PASSING THE NO. 200 SIEVE. ALSO THE LIQUID LIMIT (LL) OF THE FINES SHOULD NOT EXCEED 30 AND THE PLASTICITY INDEX (PI) SHOULD NOT EXCEED 8.
4. FILL MATERIALS SHOULD BE PLACED IN HORIZONTAL LIFTS WITH A LOOSE THICKNESS OF 8 INCHES. THE LOOSE THICKNESS OF THE LOAD-BEARING FILL MATERIAL MAY BE INCREASED PROVIDED THE CONTRACTOR ESTABLISHES AN OPTIMUM THICKNESS IN THE FIELD VIA AN EARTHWORK TEST PAD ACCEPTABLE TO THE GEOTECHNICAL ENGINEER. HOWEVER, THE MAX. LOOSE LIFT THICKNESS IS LIMITED TO12 INCHES.
5. ALL FILL SHOULD BE PROPERLY KEYED INTO STRIPPED AND SCARIFIED SUBGRADES. THE UPPER ONE FOOT OF THE SUBGRADE IN PLANNED CUT AREAS OR IN AREAS WHICH DO NOT RECEIVE MORE THAN ONE FOOT OF NEW FILL SHOULD BE SCARIFIED AND RECOMPACTED USING THE GUIDELINES OUTLINED HEREIN.
6. FILL SHOULD NOT BE PLACED ON FROZEN OR SATURATED SUBGRADES.
7. FILL MATERIALS SHOULD BE PLACED WITHIN 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR LABORATORY COMPACTION TEST (ASTM D-1557). DISCING AND AERATION MAY BE NECESSARY TO BRING FILL MATERIALS TO THE REQUIRED MOISTURE CONDITION DURING WET AND RAINY PERIODS DURING DRY PERIODS, WATER MAY NEED TO BE ADDED TO BRING THE SOILS, ESPECIALLY GRANULAR SOILS, UP TO THE PROPER MOISTURE CONTENT TO ACHIEVE PROPER COMPACTION. FINE-GRAINED SOILS MAY REQUIRE AERATION PRIOR TO COMPACTION EVEN DURING DRY PERIODS.
8. COMPACTED LOAD-BEARING FILL SHOULD EXTEND HORIZONTALLY OUTSIDE OF PLANNED BUILDING AND PAVED AREAS AT LEAST 5 FEET BEFORE SLOPING.
9. TEMPORARY SLOPES SHOULD BE REGULARLY EVALUATED FOR INDICATIONS OF MOVEMENT DURING CONSTRUCTION.
10. SOIL SLOPES SHOULD BE COVERED FOR PROTECTION FROM RAIN, AND SURFACE WATER RUNOFF SHOULD BE DIVERTED AWAY FROM SLOPES. FOR EROSION PROTECTION, GRASS OR OTHER VEGETATION SHOULD BE ES TABLISHED ON PERMANENT SOIL SLOPES AS SOON AS PRACTICAL.
11. ALL TEMPORARY EXCAVATIONS, INCLUDING TRENCHES, SHOULD BE SLOPED BACK OR SUPPORTED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), WHICH CAN BE FOUND IN THE CODE OF FEDERAL REGULATIONS, TITLE 29, PART 1926 (29 CFR PART 1926). SUBPARTS M AND P. THE CONTRACTOR SHOULD PROVIDE AND DESIGNATE A "COMPETENT PERSON" WHOSE RESPONSIBILITIES INCLUDE SELECTION OF TEMPORARY SLOPE ANGLES OR SUPPORT SYSTEMS FOR EXCAVATION SIDEWALLS.
12. PERMANENT FILL OR CUT SLOPES IN SOIL SHOULD BE DESIGNED AND CONSTRUCTED HAVING A GRADE NO STEEPER THAN 3 FT. HORIZONTAL TO 1 FT. VERTICAL.
13. ANY INTACT ROCKS OR BOULDERS WITHIN THE FOUNDATION EXCAVATION, SLAB-ON-GRADE, UTILITY LOCATIONS AND PAVEMENT AREAS SHOULD BE OVER-EXCAVATED A MIN. OF 12 INCHES BELOW THE BEARING ELEVATION. THE OVER-EXCAVATION MUST BE BACKFILLED WITH A STONE SIMILAR TO PENNDOT 2A "MODIFIED".
14. AFTER SUBGRADE ELEVATIONS HAVE BEEN REACHED AND PRIOR TO FLOOR SLAB, PARKING LOT, OR ROADWAY CONSTRUCTION COMPACT THE EXPOSED SUBGRADE WITH A MIN. 10-TON ROLLER COMPACTOR. **** VIBRATOR MUST NOT BE USED WITHIN STORMWATER MANAGEMENT BASINS **.** THEN PROOF ROLL THE COMPACTED SUBGRADE SURFACES USING A TANDEM-AXLE DUMP TRUCK. ANY UNSTABLE AREAS MUST BE UNDERCUT TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER AND REPLACED WITH A STRUCTURAL FILL.
15. PRIOR TO FILLING AREAS WITHIN THE BUILDING PAD AREA AND 10 FT. PERIMETER ZONE AS WELL AS OTHER AREAS RECEIVING FILL, COMPACT THE EXPOSED SUBGRADE SOILS WITH A LARGE COMPACTOR USING VIBRATORY MODE. PROOF ROLL THE COMPACTED SURFACES AND UNDERCUT WHERE VISUALLY NECESSARY.
16. CONCRETE PLACEMENT FOR FOUNDATIONS, AS WELL AS THE BACKFILL OF UTILITY LINES, SHOULD BE COMPLETED IN THE SAME DAY AS THE EXCAVATION. EXCAVATIONS SHOULD NOT BE LEFT OPEN WHEN RAINFALL IS EXPECTED.
17. THE TOWNSHIP MUST BE NOTIFIED WHEN SOIL REPLACEMENT MEASURES ARE TO BE IMPLEMENTED. THE SOIL REPLACEMENT MUST BE APPROVED BY THE TOWNSHIP ENGINEER.



POST CONSTRUCTION STORMWATER MANAGEMENT GENERAL MAINTENANCE NOTES

1. ALL STORMWATER COMPONENTS MUST BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST FOUR (4) TIMES ANNUALLY AND AFTER MAJOR STORM (RAINFALL EVENTS IN EXCESS OF 4"). SUCH COMPONENTS ARE TO INCLUDE STORM INLETS AND MANHOLES
2. SEDIMENT REMOVAL IS TO TAKE PLACE DURING DRY CONDITIONS. DISPOSAL OF DEBRIS, TRASH, SEDIMENT AND OTHER WASTE MATERIAL IS TO BE DONE AT SUITABLE DISPOSAL/RECYCLING SITES AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WASTE REGULATIONS.
3. BERMS AND EMBANKMENTS ARE TO BE MOWED ON A REGULAR BASIS. GRASS IS TO BE MOWED AT LEAST ONCE A MONTH DURING THE GROWING SEASON. VEGETATED AREAS ARE TO BE INSPECTED AT LEAST ANNUALLY FOR EROSION AND SCOUR. VEGETATED AREAS ARE TO BE INSPECTED FOR UNWANTED TREE GROWTH AT LEAST ONCE A YEAR.
4. ALL STRUCTURAL COMPONENTS (STORM INLETS, MANHOLES AND PIPING) ARE TO BE INSPECTED FOR CRACKING, SUBSIDENCE, SPALLING, EROSION AND DETERIORATION BI-ANNUALLY.
5. OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL POST CONSTRUCTION STORMWATER MANAGEMENT BMPS.
6. ALL COLLECTED WASTES MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL ENVIRONMENTAL REQUIREMENTS.
7. ALL IMPERVIOUS DRIVES AND PARKING FIELDS TO BE SWEPT WITH A VACUUM STREET SWEEPER BI/WEEKLY.(7.1 ACRES)

GRADING AND DRAINAGE NOTES

1. REFER TO THE SITE PLAN FOR SPECIFIC DETAILS AND DIMENSIONS OF SITE PARKING LAYOUT AND RELATED IMPROVEMENTS.
2. PROPOSED SPOT ELEVATIONS PROVIDED REPRESENT BOTTOM OF CURB ELEVATIONS. TOP OF CURB ELEVATIONS ARE 0.5' ABOVE BOTTOM OF CURB ELEVATION UNLESS OTHERWISE NOTED.
3. ALL PERIMETER BUILDING SIDEWALKS TO SLOPE AT 1% MINIMUM (1/8"/FT.) AND 2% MAXIMUM (1/4"/FT.) AWAY FROM THE BUILDING TO THE EDGE OF PAVING OR FIRST PARKING STALL.
4. REFER TO THE UTILITY PLAN FOR UTILITY LAYOUT AND RELATED IMPROVEMENTS.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATIONS OF ALL EXISTING UTILITIES. ONLY THE LOCATION OF VISIBLE UTILITIES ON OR ABOVE THE SURFACE OF THE EARTH THAT CAN BE REASONABLY LOCATED USING STANDARD SURVEY PROCEDURES SHALL BE CERTIFIED. NO CERTIFICATION IS MADE BY MASER CONSULTING, P.A. AS TO THE ACCURACY OR COMPLETENESS OF THE ACTUAL LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES. IT IS IMPERATIVE THAT PRIOR TO ANY CONSTRUCTION IN THE AREA, A UTILITY MARK-OUT IS ORDERED.
6. NO TOPSOIL SHALL BE REMOVED FROM THE SITE OR USED AS SPOIL UNLESS APPROVED BY THE TOWNSHIP. TOPSOIL MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE REDISTRIBUTED SO AS TO PROVIDE AT LEAST EIGHT (8) INCHES OF COVER TO ALL LANDSCAPE AREAS OF THE SITE AND SHALL BE STABILIZED BY SEEDING OR PLANTING.
7. THE EROSION AND SEDIMENTATION CONTROL PLANS SHALL BE REFERENCED AND USED IN CONJUNCTION WITH THIS DRAWING TO COMPLETE CONSTRUCTION PHASING.
8. LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND OBSERVATIONS AT THE SITE. COMPLETENESS OR ACCURACY OF LOCATIONS AND DEPTH CANNOT BE GUARANTEED. ALL CONTRACTORS AND OTHER PERSONS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREON ARE CAUTIONED THAT EACH INDIVIDUAL USING THIS PLAN MUST VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE STARTING WORK.
9. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITIES ENTERING THE BUILDING INCLUDING SANITARY SEWER LATERAL, DOMESTIC WATER AND FIRE PROTECTION SERVICE, ELECTRIC, TELEPHONE AND GAS SERVICE. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO THEIR FACILITIES.
10. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
11. IN AREAS OF PROPOSED EARTHWORK, THE RESIDUAL SOIL AND DECOMPOSED ROCK MAY BE EXCAVATED USING CONVENTIONAL EQUIPMENT, INCLUDING EXCAVATORS, LOADERS AND DOZERS. LARGE ROCKS MAY BE BROKEN UP OR DISLODGED BY HOE RAMS AND DOZERS WITH RIPPERS. BLASTING IS NOT RECOMMENDED ON THIS SITE.
12. THE SITE IS TO BE GRADED SMOOTHLY AND EVENLY IN ACCORDANCE WITH THE PROPOSED CONTOURS AND SPOT ELEVATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING A POSITIVE DRAINAGE FLOW TO INLET STRUCTURES WITHOUT CREATING FLAT SPOTS THAT WILL RESULT IN STANDING WATER (PUDDLING OR PONDING).
13. DURING GRADING OPERATIONS NECESSARY MEASURES FOR DUST CONTROL WILL BE IMPLEMENTED.

ALL EARTHWORK SHALL BE WITNESSED BY A LICENSED PROFESSIONAL ENGINEER OR DESIGNEE. THE CRITICAL STAGE OF THIS DEVELOPMENT WILL BE THE CONSTRUCTION OF THE STORMWATER MANAGEMENT SYSTEM. SPECIFICALLY THE UNDERGROUND BASINS AND THE IRRIGATION SYSTEM.

THE CONTRACTOR ASSUMES RESPONSIBILITY TO PROVIDE CLEAN FILL TO AND FROM THE SITE.

CLEAN FILL IS UNCONTAMINATED, NON-WATER SOLUABLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL.

APPLICANT IS RESPONSIBLE FOR MAINTENANCE OF PCSM BMPS:
MADISON DEVELOPMENT GROUP, INC.
AND CENTER SQUARE COMMONS, LP
ATTN:JOHN MCKENNA
PO BOX 507
SOUTHEASTERN, PA 19399
PHONE:215-568-9495
FAX:215-359-1370

SOIL DESCRIPTIONS:

Bo--BOWMANSVILLE-KNAUERS SILT LOAMS:
DESCRIPTION OF KNAUERS
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 72-99 INCHES
DEPTH TO WATER TABLE: 0 INCHES

DESCRIPTION OF BOWMANSVILLE
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 72-99 INCHES
DEPTH TO WATER TABLE: 0-18 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE: DEPTH TO BEDROCK AND DEPTH TO WATER TABLE

MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILITY: NO PROPOSED IMPROVEMENTS ARE LOCATED WITHIN THIS AREA.

CfA--CHALFONT SILT LOAM:
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 42 - 99 INCHES (15 - 30 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 6-18 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
VERY LIMITED FOR SMALL COMMERCIAL BUILDINGS, DEPTH TO BEDROCK AND DEPTH TO WATER TABLE

MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILITY
BUILDING CONSTRUCTION IS MINIMAL WITHIN THE CFA SOIL ALTHOUGH SOME BEDROCK WILL HAVE TO BE EXCAVATED FOR BUILDING FOUNDATIONS.

CfB--CHALFONT SILT LOAM:
3 TO 8 % SLOPES
DEPTH TO BEDROCK: 42 - 99 INCHES (15 - 30 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 6-18 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
VERY LIMITED FOR SMALL COMMERCIAL BUILDINGS, DEPTH TO BEDROCK AND DEPTH TO WATER TABLE

MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILITY: NO BUILDING CONSTRUCTION WITHIN THE AREA OF CFB.

LeA--LAWRENCEVILLE SILT LOAM:
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 48 - 99 INCHES (24 - 38 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 18-36 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE: DEPTH TO BEDROCK AND DEPTH TO WATER TABLE

MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILITY: NO PROPOSED IMPROVEMENTS ARE LOCATED WITHIN THIS AREA.

ReB--READINGTON SILT LOAM:
3 TO 8 % SLOPES
DEPTH TO BEDROCK: 40 - 70 INCHES (20 - 36 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 18-36 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE: DEPTH TO BEDROCK AND DEPTH TO WATER TABLE

MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILITY
THE MAJORITY OF THE SITE LIES WITHIN THE REB FORMATION. BEDROCK WILL HAVE TO BE EXCAVATED FOR DEVELOPMENT OF THE SITE. ADDITIONALLY, SOIL REMEDIATION WILL BE INCORPORATED TO ENSURE INFILTRATION OCCURS.

UgB--URBAN LAND:
0 TO 8 % SLOPES
DEPTH TO BEDROCK: 10-98 INCHES
DEPTH TO WATER TABLE: N/A

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE: DEPTH TO BEDROCK

MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILITY
BUILDING CONSTRUCTION IS MINIMAL WITHIN THE CFA SOIL ALTHOUGH SOME BEDROCK WILL HAVE TO BE EXCAVATED FOR BUILDING FOUNDATIONS.

TOTAL AREA OF DISTURBANCE: 20.65 ACRES
TOTAL NPDES BOUNDARY AREA: 23.70 ACRES

PCSM LEGEND

- NPDES BOUNDARY
- SOIL LIMIT
- LIMIT OF DISTURBANCE
- 170 PROPOSED CONTOURS
- 170 EXISTING CONTOURS

WATERSHED:

LOWER SCHUYLKILL WATERSHED DRAINING TO STONY CREEK
TSF - TROUT STOCKING FISHES
MF - MIGRATORY FISHES

SCALE : 1" = 60'

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REV	DATE	DRAWN BY	DESCRIPTION
1	09/11/15	CJR	REVISED PER HCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. McFALL II
RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
Phone: 610.254.9140
Fax: 610.254.9141
email: solutions@maserconsulting.com

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12008030A	DRAWING NAME: C-GRAD		

SHEET TITLE:
OVERALL GRADING AND DRAINAGE PCSM PLAN NOTES

SHEET NUMBER:
6 of 38

CPS FILTER SCREEN DESIGN TABLE

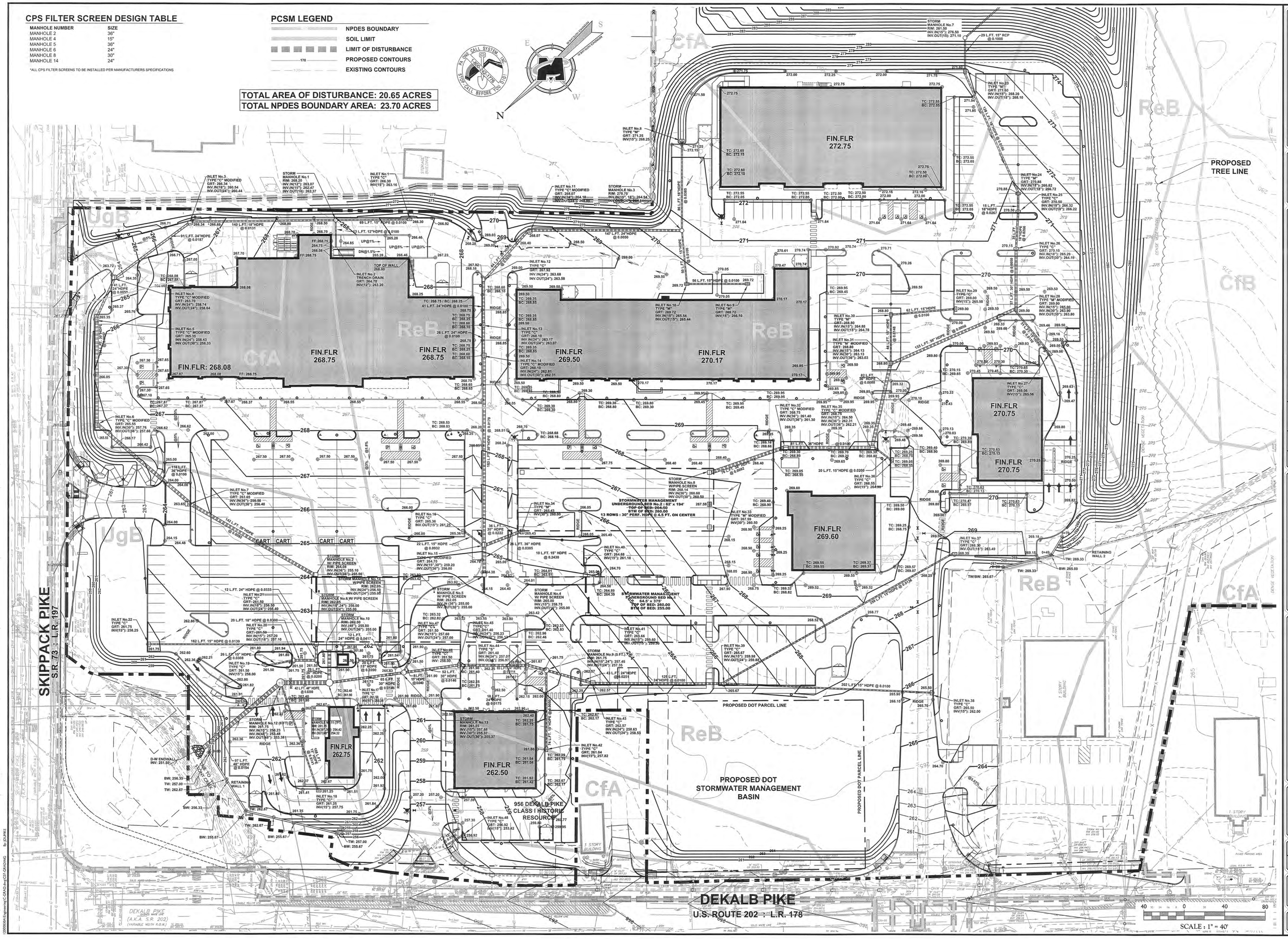
MANHOLE NUMBER	SIZE
MANHOLE 2	36"
MANHOLE 4	15"
MANHOLE 5	36"
MANHOLE 6	24"
MANHOLE 8	30"
MANHOLE 14	24"

*ALL CPS FILTER SCREENS TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS

PCSM LEGEND

- NPDES BOUNDARY
- SOIL LIMIT
- LIMIT OF DISTURBANCE
- 170 — PROPOSED CONTOURS
- EXISTING CONTOURS

TOTAL AREA OF DISTURBANCE: 20.65 ACRES
TOTAL NPDES BOUNDARY AREA: 23.70 ACRES



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RUSSELL T. McFALL II
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FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA

EXTON OFFICE
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Suite 104
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12000830A		C-GRAD	

SHEET TITLE:
GRADING AND DRAINAGE PCSM PLAN

SHEET NUMBER:
7 of 38

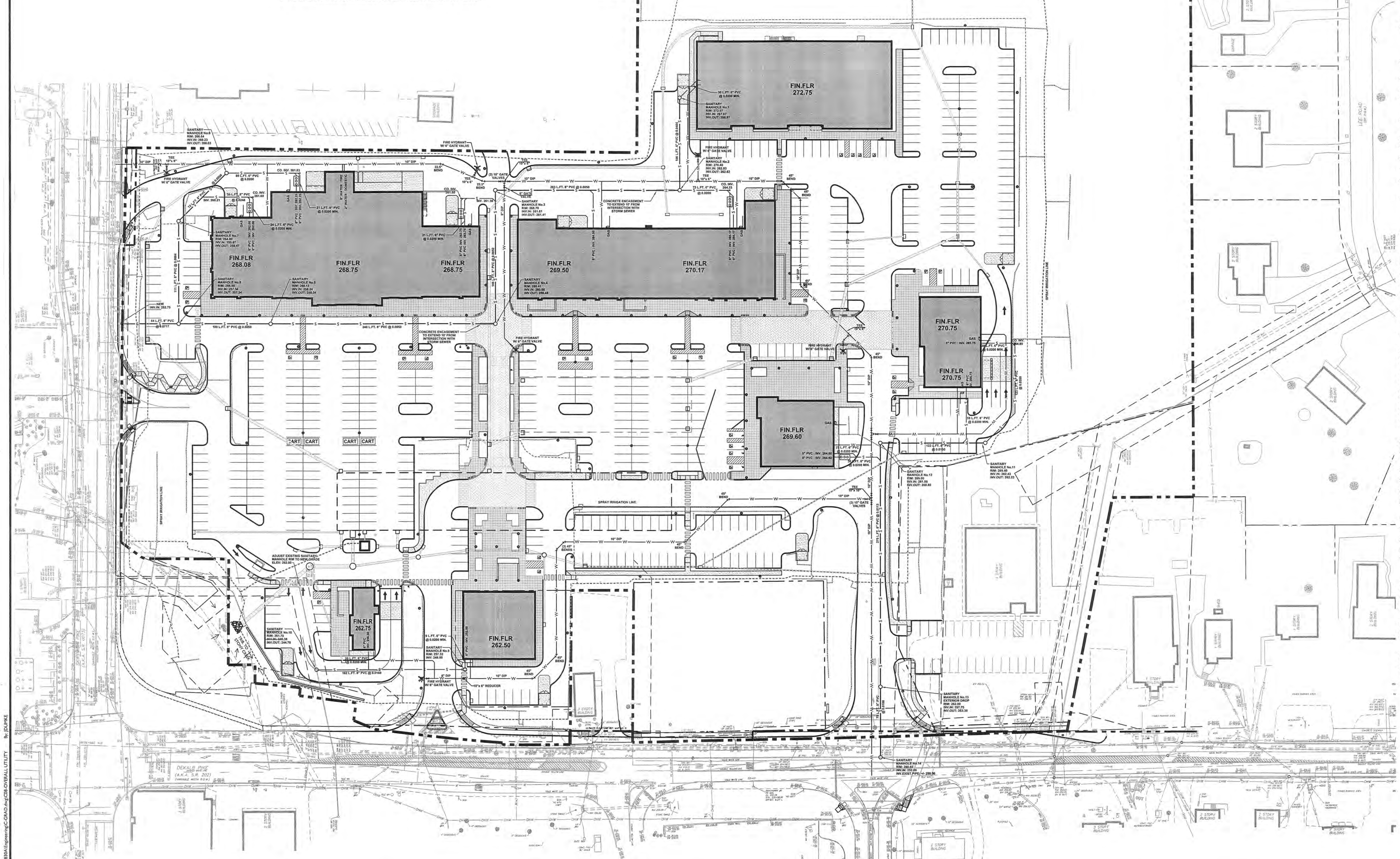
UTILITY NOTES

1. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION HAS BEEN PROVIDED TO THE BEST ABILITY OF THE ENGINEER, HOWEVER, THE CONTRACTOR IS ADVISED TO VERIFY IN THE FIELD ALL THE FACTORS CONCERNING THE LOCATION OF ALL UTILITIES PRIOR TO BIDDING AND CONSTRUCTION. LOCATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS ARE TO BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR.
2. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSE OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OR APPROVALS HAVE BEEN SATISFIED ON THE DRAWINGS AND EACH DRAWING HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION". THE CLIENT OR OWNER AND CONTRACTOR ARE RESPONSIBLE TO ASSURE THAT THE APPROVED PLANS ONLY, ARE USED FOR BIDDING AND CONSTRUCTION.
3. DO NOT SCALE DRAWINGS AS THEY PERTAIN TO ADJACENT AND SURROUNDING PHYSICAL CONDITIONS, BUILDINGS, STRUCTURES, ETC. THEY ARE SCHEMATIC ONLY, EXCEPT WHERE DIMENSIONS ARE SHOWN THERETO.
4. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND CANNOT BE GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS SATISFACTION PRIOR TO EXCAVATION. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION. TO ASCERTAIN EXISTING INVERTS, MATERIALS AND SIZES, TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENT AS REQUIRED TO AVOID CONFLICTS. ANY EXISTING UTILITY SERVICE CONNECTIONS, LOCATED BY THE CONTRACTOR, CAPABLE OF SERVICING THE PROPOSED USE SHALL BE REUSED AS LONG AS THEY ARE IN GOOD CONDITION AND MEET THE UTILITY AUTHORITY'S STANDARDS AND SPECIFICATIONS. IF THE EXISTING UTILITY SERVICES DO NOT MEET THE ABOVE CRITERIA, THEN NEW SERVICE LINES SHALL BE INSTALLED.
5. FINAL LOCATIONS, NUMBERS AND SIZE OF ALL PROPOSED UTILITIES SERVICING BUILDINGS ARE TO BE VERIFIED WITH THE ARCHITECT, OWNER AND APPROPRIATE UTILITY AUTHORITY BY THE CONTRACTOR.
6. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:

   A) PENNSYLVANIA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AS CURRENTLY AMENDED.

   B) CURRENT, PREVAILING TOWNSHIP OF WHITPAIN SPECIFICATIONS,STANDARDS AND REQUIREMENTS.

   C) CURRENT, PREVAILING UTILITY COMPANY/AUTHORITY AND OWNER SPECIFICATIONS, STANDARDS AND REQUIREMENTS.
7. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD OR SOIL CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE OR INEFFECTIVE.
8. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL APPROPRIATE SAFETY DEVICES AND TRAINING TO ALL WORKERS IN ORDER TO MAINTAIN SAFE CONDITIONS ON THE PROJECT SITE.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED CONSTRUCTION PERMITS NECESSARY FOR THE CONSTRUCTION AND COMPLETION OF THE APPROVED IMPROVEMENTS.
10. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS AND SIZES OF ALL UTILITIES ENTERING THE BUILDING, INCLUDING SANITARY SEWER, WATER, GAS, ELECTRIC AND TELEPHONE SERVICE CONNECTIONS. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED.
11. CONTRACTOR IS TO COORDINATE WITH THE UTILITY COMPANIES AS TO THE LOCATION AND SCHEDULING OF SERVICE CONNECTIONS TO THE UTILITY SUPPLY FACILITIES.
12. UTILITY COMPANIES MUST BE NOTIFIED PRIOR TO ANY DEMOLITION, EXCAVATION AND/OR CONSTRUCTION. CALL 1-800-242-1776 TO ORDER UTILITY MARK-OUTS AT THE SITE.
13. THE ROUTING OF ALL UTILITIES IS SUBJECT TO ADJUSTMENT TO MEET UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS. WHEN BUILDING PLUMBING AND MECHANICAL DRAWINGS ARE COMPLETE AND UTILITY REQUIREMENTS ARE FINALIZED ADJUSTMENTS MAY BE NECESSARY TO THE UTILITY SERVICE LOCATIONS AND SIZES.
14. THE CONTRACTOR SHALL ADJUST ALL UTILITY FRAMES, COVERS, MANHOLES, VALVE BOXES AND OTHER UTILITY FACILITY STRUCTURES TO BE FLUSH WITH FINISH SURFACE GRADE ELEVATIONS.
15. ALL CONCRETE IS TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.



WATER SERVICE NOTES

1. EXCAVATION AND BACKFILL SHALL CONFORM TO THE REQUIREMENTS FOR SUBSURFACE STRUCTURE EXCAVATION. THE CONTRACTOR SHALL PROVIDE ADEQUATE EQUIPMENT AND SO OPERATE IT AS TO MAINTAIN AN ESSENTIALLY DRY EXCAVATION, STABLE TRENCH BOTTOMS, AND SUITABLE WORKING CONDITIONS UNTIL THE COMPLETION OF WORK.
2. WATER SERVICE SHALL BE LAID IN STRAIGHT LINES EXCEPT WHEN OTHERWISE SPECIFICALLY PROVIDED OR DIRECTED BY THE ENGINEER. WHEN DEVIATION FROM A STRAIGHT LINE IS PERMITTED, THE DEFLECTION OF EACH JOINT SHALL NOT EXCEED THE MANUFACTURER'S RECOMMENDED MAXIMUM FOR THE TYPE OF JOINT AND SIZE OF PIPE BEING INSTALLED.
3. PIPE SHALL BE LAID WITH AT LEAST FOUR (4) FEET OF COVER OVER THE TOP OF THE PIPE TO SURFACE GRADES OR FUTURE FINISH GRADES. THE DEPTH OF PIPE MAY BE INCREASED OR SLIGHTLY DECREASED LOCALLY TO PASS OBSTRUCTIONS. GRADE CHANGES SHALL BE ACCOMPLISHED BY FITTINGS AND/OR DIVIDING THE NECESSARY DEFLECTION AMONG SEVERAL JOINTS.
4. SPECIAL CARE SHALL BE EXERCISED TO REMOVE ALL EARTH, STONES AND OTHER MATERIALS FROM EACH PIPE AS IT IS LAID AND TO PREVENT ANY SUCH MATERIALS FROM ENTERING THE PIPELINE. THE CONTRACTOR SHALL SEE THAT THE ENTIRE PIPELINE IS MAINTAINED TOTALLY CLEAN ON THE INSIDE. ALL VALVES AND HYDRANTS ARE TO BE CLEAN AND IN GOOD WORKING ORDER WHEN INSTALLED. OPEN ENDS SHALL BE ADEQUATELY PROTECTED AT ALL TIMES AND SHALL BE SECURELY SEALED WITH APPROVED PLUGS WHENEVER WORK IS STOPPED FOR ANY REASON. AFTER REMOVING A PLUG, THE INTERIOR OF THE PIPELINE SHALL BE INSPECTED AND CLEANED BEFORE RESUMING PIPE LAYING OPERATIONS.
5. BEFORE PLACING EACH LENGTH OF PIPE, THE CONTRACTOR SHALL CAREFULLY EXAMINE IT FOR BREAKS, CRACKS OR OTHER DEFECTS AND SHALL DISCARD ANY WHICH MAY APPEAR TO BE IN ANY WAY DEFECTIVE. ALL PIPE AND FITTINGS SHALL BE HANDLED AND INSTALLED WITH CARE TO AVOID BREAKAGE.
6. EACH SECTION OF PIPE SHALL BE SOLIDLY BEDDED IN THE TRENCH BOTTOM AND SHALL BE SUPPORTED FOR ITS FULL LENGTH EXCEPT WHERE EXCESS EXCAVATION HAS BEEN MADE FOR JOINTS.
7. BEFORE MAKING JOINT CONNECTIONS, THE ENDS OF THE PIPES AND ALL JOINT MEMBERS SHALL BE THOROUGHLY CLEANED. ALL JOINTING SHALL BE DONE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE DIRECTIONS OF THE ENGINEER.
8. THE CONTRACTOR SHALL DO ALL NECESSARY PIPE CUTTING USING CUTTING TOOLS OF AN APPROVED TYPE AND IN GOOD WORKING ORDER TO ENSURE CLEAN, SQUARE CUTS TO EXACT MEASUREMENTS.
9. THE CONTRACTOR SHALL POSITION VALVES, FITTINGS AND FIRE HYDRANTS IN THE LOCATIONS AS INDICATED ON THE PLANS.
10. ALL FITTINGS AND VALVES SHALL BE SET ACCURATELY, TRUE TO, AND SQUARE WITH PIPELINES. VALVE STEMS SHALL BE ACCURATELY PLUMB. FITTINGS AND VALVES SHALL BE SUPPORTED BY APPROVED BLOCKING SO AS TO ENSURE THEIR REMAINING ACCURATELY IN POSITION DURING JOINTING AND IN SUCH MANNER THAT THEIR WEIGHT WILL NOT PLACE UNDUE STRAIN ON CONNECTING PIPE OR JOINTS. VALVE BOXES SHALL BE SET PLUMB, ACCURATELY CENTERED WITH RESPECT TO THE VALVE STEM. VALVE BOXES ARE TO BE WELL SUPPORTED BY SOLIDLY TAMPED EARTH AND WITH THEIR TOPS FLUSH WITH THE FINISHED PAVED SURFACE OR EARTH SURFACE GRADE.
11. PIPELINES SHALL BE THRUST BLOCKED, HORIZONTALLY AND VERTICALLY, AT ALL BENDS GREATER THAN TEN (10) DEGREES AND AT ALL TEES, PLUGS, VALVES AND FIRE HYDRANTS SO AS TO PREVENT MOVEMENT OF THE LINES UNDER PRESSURE.
12. EXISTING WATER MAIN SERVICE SHALL NOT BE INTERRUPTED UNLESS NECESSARY FOR THE COMPLETION OF THE WORK INDICATED AND THEN ONLY IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING WATER AUTHORITY.

WATER SERVICE MATERIALS

DUCTILE IRON PIPE AND FITTINGS

1. DUCTILE IRON PIPE SHALL CONFORM TO AWWA C151 AND SHALL BE THICKNESS CLASS 52.
2. FLANGES SHALL BE THICKNESS CLASS 53. GASKET-TYPE JOINTS SHALL BE TYTON OR APPROVED EQUAL. MECHANICAL JOINTS SHALL CONFORM TO ANSI/AWWA C111/A21.11. PUSH-ON JOINTS SHALL BE USED. THE PIPE JOINTS MAY BE TYTON JOINT, WITH THE EXCEPTION OF JOINTS ON FIRE HYDRANT LATERAL WHICH MUST BE EITHER TYTON JOINT WITH A FIELD LOCK GASKET, MECHANICAL JOINT OR RESTRAINED JOINT. ALL FITTINGS MUST BE MECHANICAL JOINT.
3. FITTINGS SHALL CONFORM TO ANSI/AWWA C110/A21.10 OR ANSI C153/A21.53.
4. UNLESS OTHERWISE SPECIFIED, ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CEMENT LINED IN ACCORDANCE WITH AMERICAN STANDARDS ASSOCIATION A21.4, AS AMENDED AND REVISED TO DATE.

VALVES

1. VALVES SHALL BE IRON BODY, RESILIENT SEALED, NRS CONFORMING TO AWWA C509. VALVES SHALL BE OF THE TYPE MANUFACTURED BY EITHER THE "KENNEDY" OR "MUELLER" VALVE COMPANY. UNLESS OTHERWISE SPECIFIED, VALVES SHALL BE OPERATED BY A TWO (2) INCH SQUARE OPERATING NUT OF CAST IRON AND SHALL OPEN IN THE COUNTERCLOCKWISE DIRECTION. THE DIRECTION OF OPENING SHALL BE MARKED ON THE NUT BY AN ARROW AND THE WORD "OPEN".
2. ALL CAST-IRON SURFACES OF VALVES AND VALVE BOXES SHALL BE PAINTED WITH THREE (3) COATS OF ASPHALTUM PAINT, INSIDE AND OUT.
3. VALVES MUST BE MECHANICAL JOINT.

VALVE BOXES

1. VALVE BOXES SHALL BE COMPLETE WITH COVERS, AND BOTH VALVE BOX AND COVER SHALL BE OF AMPLE STRENGTH AND DIMENSION TO FULLY SUSTAIN THE SHOCKS OF HEAVY VEHICULAR TRAFFIC AND TO MAINTAIN THE UPPER SECTION AND COVER AT PROPER GRADE UNDER HEAVY VEHICULAR TRAFFIC.
2. COVERS SHALL BE ROUND, AT LEAST SIX (6) INCHES IN DIAMETER AND SHALL HAVE THE WORD "WATER" , AN ARROW SHOWING THE OPENING DIRECTION, AND THE WORD "OPEN" CLEARLY CAST THEREON.

FIRE HYDRANTS

1. HYDRANT THREADS MUST CONFORM TO LOCAL FIRE DEPARTMENT REQUIREMENTS.
2. HYDRANTS MUST HAVE PENTAGON NUT ON OPERATING STEM AND ALL CAPS
3. HYDRANTS MUST OPEN IN A COUNTER CLOCKWISE (LEFT) DIRECTION
4. HYDRANTS MUST HAVE (2) HOSE AND (1) PUMP NOZZLES. THREADS MUST BE 2.5" NH (NATIONAL STANDARD) FOR HOSE CONNECTIONS. THREADS MUST BE 4.5" NH (NATIONAL STANDARD) FOR PUMPER CONNECTION.
5. ALL PRIVATELY OWNED AND MAINTAINED FIRE HYDRANTS SHALL HAVE BODY AND CAPS PAINTED YELLOW. ALL BONNETS (DOMES) SHALL BE PAINTED TO MEET THE FOLLOWING COLOR SCHEME:
   * 4" AND 6" WATER MAINS SHALL HAVE "RED" BONNETS (DOMES)
   * 8", 10" AND 12" WATER MAINS SHALL HAVE "GREEN" BONNETS (DOMES)
   * 16" AND LARGER WATER MAINS SHALL HAVE "BLUE" BONNETS (DOMES)

CONCRETE

1. CONCRETE FOR CRADLES AND THRUST BLOCKS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI.

WATER MAIN TESTING / STERILIZING

EXFILTRATION TESTING

BEFORE NEW WATER LINES ARE PUT INTO SERVICE, THE CONTRACTOR SHALL PROVIDE THE NECESSARY EQUIPMENT FOR AND SHALL PERFORM AN EXFILTRATION TEST.
TESTING PROCEDURE:

A. EXPEL AIR FROM THE PIPE THROUGH HYDRANTS, BLOW-OFFS OR TAPS REQUIRED FOR RELEASE OF AIR AT HIGH POINTS. TAPS FOR RELEASE OF AIR AND BLOW-OFFS FOR FILLING PIPE AND RELEASING AIR SHALL BE PROVIDED BY THE CONTRACTOR.
B. FILL EACH PIPE SECTION WITH WATER SLOWLY. SUBJECT PIPE TO A HYDROSTATIC PRESSURE OF 1.5 TIMES THE WORKING PRESSURE OR A MINIMUM OF 150 PSI, WITH THE DURATION OF THE TEST BEING 2 HOURS
C. WHEN TEST PRESSURE IS REACHED, MEASURE AMOUNT OF MAKE-UP WATER REQUIRED TO MAINTAIN THIS PRESSURE DURING THE ONE (1) HOUR TEST PERIOD.
D. THE ALLOWABLE MAKEUP WATER/LEAKAGE BEING ONE FOURTH OF THAT ALLOWED BY THE AWWA SPECIFICATIONS. PIPELINES FAILING TO MEET THIS REQUIREMENT SHALL BE REPAIRED AND RETESTED AS ABOVE SPECIFIED.

STERILIZING

BEFORE NEW WATERLINES ARE PUT INTO SERVICE, THEY SHALL BE COMPLETELY STERILIZED WITH CHLORINE. THE CHLORINE SHALL BE INTRODUCED AND DISTRIBUTED INTO THE NEW PIPELINES BY SUITABLE AND APPROVED MEANS AND IN SUCH MANNER THAT IT SHALL REACH ALL OF THE PIPE AND ALL FITTINGS, VALVES AND APPURTENANCES. STERILIZATION MAY BE DONE IN CONNECTION WITH PIPE TESTING OR INDEPENDENTLY. THE MANNER AND METHOD OF INTRODUCTION OF CHLORINE SHALL BE SATISFACTORY TO AND MUST BE APPROVED BY THE GOVERNING WATER AUTHORITY. STERILIZING DOSAGE SHALL BE SUFFICIENT TO PROVIDE THE EQUIVALENT OF NOT LESS THAN FIFTY (50) PARTS PER MILLION (PPM) OF FREE CHLORINE TO THE ENTIRE CONTENTS OF THE PIPELINE OR SECTION THEREOF TO BE STERILIZED. THE CHLORINATED WATER SHALL BE PERMITTED TO REMAIN IN THE PIPELINE FOR A CONTACT PERIOD OF NOT LESS THAN TWENTY FOUR (24) HOURS. AFTER STERILIZATION, THE WATER MAIN OR SECTION SHALL BE THOROUGHLY FLUSHED. THE CHLORINE CONCENTRATION IN THE WATER MAIN AFTER FLUSHING SHALL BE NO HIGHER THAN THAT GENERALLY FOUND IN THE WATER SYSTEM, OR NOT EXCEEDING 0.2 PPM, WHICHEVER IS LOWER. ANY SECTION OF PIPELINE WHICH IS DRAINED OR EMPTIED OF WATER AT ANY TIME, FOR ANY PURPOSE, IN CONNECTION WITH THIS WORK, WETHER A NEWLY LAID PIPELINE OR PART OF AN EXISTING SYSTEM, SHALL BE STERILIZED AS ABOVE SPECIFIED BEFORE BEING RETURNED TO SERVICE.

SANITARY SEWER NOTES

1. CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE SPECIFICATIONS OF WHITPAIN TOWNSHIP. THE TOWNSHIP SHALL APPROVE CHANGES TO THE DESIGN.
2. SEWER LATERAL SHALL BE POLYVINYL CHLORIDE (PVC) SDR-26.
3. SANITARY SEWER LATERAL SHALL BE BACKFILLED AND COMPACTED AS SPECIFIED ON THESE DRAWINGS.
4. MAINTAIN 10 FEET HORIZONTAL DISTANCE BETWEEN WATER MAINS AND SEWER MAINS AS A MINIMUM, EXCEPT AT CROSSINGS.
5. NO FIELD CHANGES OR DEVIATIONS FROM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER AND WHITPAIN TOWNSHIP.
6. MINIMUM COVER OVER PIPES SHALL BE 48 INCHES.
7. BUILDING SEWER CONNECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWNSHIP RULES AND REGULATIONS.
8. NO PLANTINGS OR STRUCTURES SHOULD BE LOCATED WITHIN 10 FEET OF THE SANITARY SEWERS OR LATERALS.
9. SANITARY SEWER LINES AND LATERALS WILL BE PRIVATELY OWNED.
10. A HORIZONTAL SEPARATION OF 10 FEET AND/OR A VERTICAL CLEARANCE OF 18 INCHES SHALL BE MAINTAINED BETWEEEN THE SANITARY SEWER AND ANY OTHER UTILITY PIPELINES.

UTILITY SERVICE PROVIDERS

AMERICAN WATER
P.O. BOX 578
ALTON, ILLINOIS 62002

WHITPAIN TOWNSHIP SEWER AUTHORITY
960 WENTZ ROAD
BLUE BELL PENNSYLVANIA, 19422

PECO ENERGY COMPANY (GAS)
WARMINSTER SERVICE BUILDING
400 PARK AVENUE
WARMINSTER, PA 18974

PECO ENERGY COMPANY (ELECTRIC)
WARMINSTER SERVICE BUILDING
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2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
Phone: 610.254.9140
Fax: 610.254.9141
email: solutions@maserconsulting.com

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AS SHOWN	06/10/15	DIII	RTM

PROJECT NUMBER:	DRAWING NAME:
12000830A	C-GRAD

SHEET TITLE:
OVERALL UTILITY PLAN AND NOTES

12000830A\Engineering\C-GRAD.dwg\C08-OVERALL UTILITY By: JDUMKE

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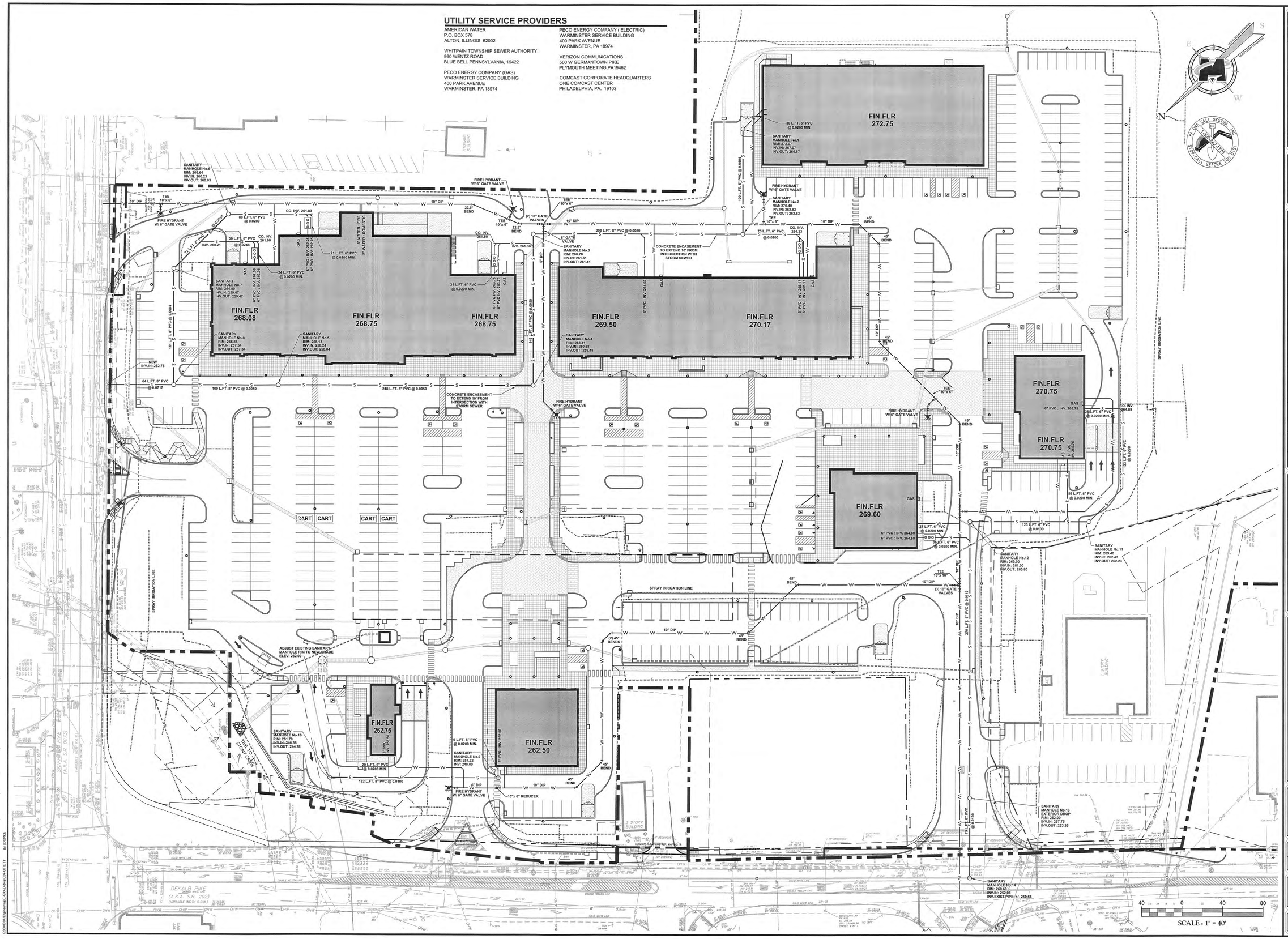

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. McFALL II

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

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AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A		DRAWING NAME: C-GRAD	

SHEET TITLE:

UTILITY PLAN

SHEET NUMBER:

PLANTING SCHEDULE

DECIDUOUS TREES	QTY	BOTANICAL NAME / COMMON NAME	CONT	CAL	SIZE
AA	11	ACER RUBRUM 'AUTUMN BLAZE' / AUTUMN BLAZE RED MAPLE	B & B	2.5"CAL	13'-15'
CF2	17	CORNUS FLORIDA / EASTERN DOGWOOD	B & B	1.5"CAL	6'-8'
LT	8	LIRIODENDRON TULIPIFERA / TULIP TREE	B & B	2.5"CAL	13'-15'
MP	19	MALUS X 'PRAIRIFIRE' / PRAIRIFIRE CRAB APPLE	B & B	1.5"CAL	6'-8'
PA3	16	PLATANUS X ACERIFOLIA / LONDON PLANE TREE	B & B	2.5"CAL	13'-15'
PO2	19	PRUNUS X OKAME / OKAME CHERRY	B & B	1.5"CAL	6'-8'
QP	26	QUERCUS PHELLOS / WILLOW OAK	B & B	2.5"CAL	13'-15'
TC	24	TILIA CORDATA / LITTLELEAF LINDEN	B & B	2.5"CAL	13'-15'
ZG	32	ZELKOVA SERRATA 'GREEN VASE' / SAWLEAF ZELKOVA	B & B	2.5"CAL	13'-15'
EVERGREEN TREES	**QTY**	**BOTANICAL NAME / COMMON NAME**	**CONT**	**CAL**	**SIZE**
PA	81	PICEA ABIES / NORWAY SPRUCE	B & B		7' - 8'
PO3	53	PICEA OMORIKA / SERBIAN SPRUCE	B & B		7' - 8'
PC	46	PICEA PUNGENS / COLORADO SPRUCE	B & B		7' - 8'
PS	45	PINUS STROBUS / WHITE PINE	B & B		7' - 8'
PD	43	PSEUDOTSUGA MENZIESII / DOUGLAS FIR	B & B		7' - 8'
SHRUBS	**QTY**	**BOTANICAL NAME / COMMON NAME**	**CONT**		
BM	4	BUXUS SEMPERVIRENS 'MONRUE' / GREEN TOWER BOXWOOD	3 GAL		
BG3	19	BUXUS X 'GREEN GEM' / GREEN GEM BOXWOOD	12"-18" MIN.		
BG2	30	BUXUS X 'GREEN MOUNTAIN' / BOXWOOD	24"-30" MIN.		
BG	206	BUXUS X 'GREEN VELVET' / BOXWOOD	24"-30" MIN.		
CF	66	CORNUS SERICEA 'FLAVIRAMEA' / YELLOW TWIG DOGWOOD	24"-30" MIN.		
CI	127	CORNUS SERICEA 'IVORY HALO' / VARIEGATED REDTWIG DOGWOOD	24"-30" MIN.		
IS	118	ILEX GLABRA 'SHAMROCK' / INKBERRY	24"-30" MIN.		
JK	148	JUNIPERUS X PFITZERIANA 'KALLAY'S COMPACT' / JUNIPER	24"-30" MIN.		
NH	16	NANDINA DOMESTICA 'HARBOUR DWARF' / DWARF HEAVENLY BAMBOO	18"-24" MIN.		
PO	41	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / LLUYKENS LAUREL	24"-30" MIN.		
SA	21	SPIRAEA X BUMALDA 'ANTHONY WATERER' / ANTHONY WATERER SPIRAEA	24"-30" MIN.		

GROUND COVERS	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	SPACING
	JS	20	JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR CREEPING JUNIPER	2 GAL	42" o.c.
	JB2	32	JUNIPERUS HORIZONTALIS 'BLUE CHIP' / BLUE CHIP JUNIPER	2 GAL	42" o.c.
	JE	73	JUNIPERUS HORIZONTALIS 'EMERALD SPREADER' / EMERALD SPREADER JUNIPER	2 GAL.	42" o.c.
	LV	32	LIRIOPE MUSCARI 'VARIEGATA' / VARIEGATED LILY TURF	4"POT	24" o.c.

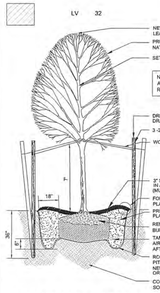
LANDSCAPING DATA:

STREET TREES EVERY 50 FT. (805 LF OF FRONTAGE)	16 TREES REQUIRED	17 TREES PROPOSED
PARKING LOT SHADE TREES 1 SHADE TREE PER 10 STALLS	56 TREES REQUIRED	67 TREES PROPOSED

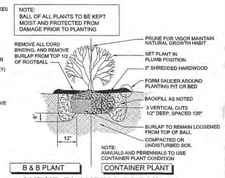
LANDSCAPE NOTES

1. GENERAL NOTES:
   - A. THIS PLAN IS TO BE USED ONLY FOR THE PURPOSES OF LANDSCAPING.
   - B. EXAMINE ALL ENGINEERING DRAWINGS AND FIELD CONDITIONS FOR SPECIFIC LOCATIONS OF UTILITIES, STRUCTURES, ETC. NOTIFY MASER CONSULTING P.A. IMMEDIATELY, IN WRITING, IN REFERENCE TO DISCREPANCIES OR LOCATION CONFLICTS.
   - C. IN THE EVENT THAT PLANT QUANTITY DISCREPANCIES OR MATERIAL OMISSIONS OCCUR IN THE PLANTING SCHEDULE, THE PLAN SHALL SUPERSEDE.
   - D. ALL PLANTING MATERIALS AND METHODS SHALL MEET OR EXCEED THE REQUIREMENTS OF WHITPAIN TOWNSHIP ORDINANCES AND ANSI Z-60.1 (CURRENT VERSION), THE AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. IN THE EVENT OF CONFLICT BETWEEN A.A.N. AND MUNICIPAL STANDARDS, THE MUNICIPAL REQUIREMENTS SHALL SUPERSEDE.
   - E. ALL LANDSCAPING SHALL BE PLANTED SO AS TO NOT INTERFERE WITH UTILITY LINES, SIGHT TRIANGLES, UNDERGROUND UTILITIES OR PUBLIC WALKWAYS OR OTHER EXISTING OR PROPOSED STRUCTURES. ALL PLANT MATERIAL PROPOSED WITHIN THE REQUIRED SIGHT DISTANCES OR SIGHT TRIANGLES ARE SELECTED SO AS TO NOT EXCEED A MATURE HEIGHT GREATER THAN 30" ABOVE THE ELEVATION OF THE ADJACENT ROADWAY. STREET TREES AND SHADE TREES PLANTED NEAR PEDESTRIAN OR VEHICULAR ACCESSES, OR WITHIN REQUIRED SIGHT DISTANCES OR SIGHT TRIANGLE EASEMENTS SHALL NOT BE BRANCHED ANY LOWER THAN 7'-0" ABOVE GRADE, AND MUST BE APPROPRIATELY PRUNED. **NO WOODY PLANTS, EXCEPT GROUNDCOVERS, ARE TO HAVE THEIR CENTERS CLOSER THAN 36" TO THE BACK OF THE CURB.**
2. PLANT MATERIAL:
   - A. NO PLANT SUBSTITUTION SHALL BE ALLOWED WITH REGARD TO SIZE, SPECIES, NAMED VARIETY, OR CULTIVAR, WITHOUT PRIOR PERMISSION IN WRITING FROM MASER CONSULTING P.A. AND THE APPROVING AUTHORITY.
   - B. ALL PLANTS SHALL BE DUG, PACKED, TRANSPORTED AND HANDLED WITH THE UTMOST CARE TO ENSURE ADEQUATE PROTECTION FROM INJURY AND DESICCATION.
   - C. ALL PLANTS SHALL BE FREE FROM DISEASE AND INFESTATION, AND SHALL BEAR ALL LEGALLY REQUIRED AGRICULTURAL CERTIFICATIONS.
   - D. ALL PLANTS SHALL BE PRUNED TO ENHANCE VIGOR PRIOR TO, OR UPON INSTALLATION, WHILE RETAINING NATURAL GROWTH HABIT OF THE PLANTS. THE CENTRAL LEADER SHALL NOT BE CUT. PLANTS PROVIDED IN THIS CONDITION SHALL NOT BE ACCEPTED. DAMAGED, BROKEN OR CONFLICTING BRANCHES SHALL BE PRUNED CLEANLY, FLUSH WITH THE MAIN TRUNK OR BRANCH.
   - E. ALL PLANTS SHALL BE NURSERY-GROWN AND TAGGED WITH A DURABLE LABEL INDICATING THE GENUS, SPECIES AND SPECIFIED VARIETY OR CULTIVAR.
   - F. ALL SCREEN PLANTING MATERIAL SHALL BE A MINIMUM OF 2 - 2.5 FEET TALL AT TIME OF PLANTING.
3. PLANTING:
   - A. SOIL MUST BE FROST-FREE, FRIABLE AND NOT MUDDY AT THE TIME OF PLANTING.
   - B. BACKFILL MATERIAL FOR PLANTING PITS SHALL BE COMPOSED OF 70% TOPSOIL, 20% FULLY COMPOSTED COW OR HORSE MANURE AND 10% PEAT MOSS. TOPSOIL SHALL MEET PENNDOT STANDARD SPECIFICATIONS AND MAY BE FROM ON-SITE OR IMPORTED SOURCES. SOIL SHALL CONTAIN NO ACIDIC MARL, NOR ANY LARGE STONES.
   - C. PLANTS SHALL BE SET TO ULTIMATE FINISHED GRADE SO THAT THEY WILL BE LEFT IN THE RELATIONSHIP TO THE SURROUNDING GROUND AS THEY HAD, PRIOR TO BEING DUG. IF EVIDENCE OF SATURATED SOILS IS ENCOUNTERED DURING EXCAVATION OF THE PLANTING PITS, UPON DIRECTION BY MASER CONSULTING P.A., PLANTS SHALL BE SET SO THAT THEIR ROOT CROWNS ARE APPROXIMATELY THREE INCHES ABOVE THE FINAL GRADE, WITH TOPSOIL AND MULCH GENTLY MOUNDED TO AVOID EXCESSIVE DRYING AT THE SURFACE. UNDER NO CIRCUMSTANCES SHALL PLANTINGS AT RELATIVELY DRY LOCATIONS BE PERFORMED IN A MOUNDED MANNER.
   - D. THE CORD BINDING THE BALL OF ALL BALLED AND BURLAPPED(B&B) PLANTS SHALL BE CUT AND REMOVED ACCORDING TO THE SPECIFICATIONS ON THE DETAIL. PLANTS WITH SYNTHETIC NON- DEGRADABLE ROOT BALL WRAPS SHALL NOT BE ACCEPTABLE.
   - E. ALL PROPOSED TREES SHALL BE SET IN BEDS MULCHED TO THE LIMIT OF THEIR PLANTING PITS. ALL PROPOSED SHRUBS SHALL BE SET IN CONTINUOUS, MASSED PLANTING BEDS, RATHER THAN ISOLATED INDIVIDUALS. ALL TREE AND SHRUB BEDS SHALL RECEIVE A 3" THICK APPLICATION OF A THOROUGHLY COMPOSTED ORGANIC MULCH FREE OF ANY OBJECTIONABLE OR FOREIGN MATERIALS.
   - F. ALL TREES GREATER THAN TWELVE FEET IN HEIGHT SHALL BE STAKED AND GUYED PER THE DETAILS.
   - G. ALL DISTURBED AREAS BEYOND THE LIMITS OF THE MULCHED PLANTING BEDS AND AREAS OF HERBACEOUS PLANTINGS SHALL BE PERMANENTLY STABILIZED WITH TURFGRASSES PER THE THE SOIL EROSION AND SEDIMENT CONTROL PLANS.
   - H. A MAJORITY OF THE LANDSCAPING SHALL BE IRRIGATED UTILIZING A STORMWATER CAPTURE AND REUSE SYSTEM.
   - I. NO PLANTINGS OR STRUCTURES SHOULD BE LOCATED WITHIN THE SANITARY SEWER EASEMENTS OR WITHIN 10 FEET OF THE SANITARY SEWERS OR LATERALS
4. MAINTENANCE:
   - A. ALL PLANTINGS SHALL BE WATERED AS NECESSARY FOR SOUND HORTICULTURAL PRACTICE DURING THE FIRST GROWING SEASON, TO ENSURE THEIR PROPER ESTABLISHMENT.
   - B. IN GENERAL SHRUBS ARE TO BE PLANTED AT INTERVALS WHICH WILL ALLOW THEM TO FULLY DEVELOP INTO CONTINUOUS MASSES OF THE INDIVIDUAL SPECIES. THEREFORE, NO PRUNING TO SHAPE OR SHEARING IS REQUIRED OR DESIRABLE. WHERE DEAD OR CONFLICTING BRANCHING DEVELOPS, IT SHOULD BE PRUNED OUT.

LANDSCAPING MATERIAL SHOWN ON CENTRE SQUARE FIRE DEPARTMENT PROPERTY SHALL BE INSTALLED AS PART OF PHASE II WORK AFTER CENTRE SQUARE FIRE DEPARTMENT REMOVES THE EXISTING FIRE HOUSE.



DECIDUOUS TREE PLANTING DETAIL
N.T.S.



SHRUB PLANTING DETAIL
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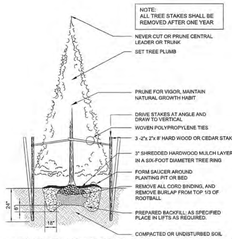
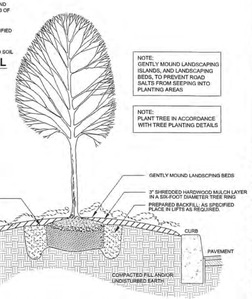


CONIFEROUS TREE PLANTING DETAIL
N.T.S.

GENTLY MOUND LANDSCAPING ISLANDS, AND ALL LANDSCAPING BEDS, TO PREVENT ROAD SALTS FROM SEEPING INTO PLANTING AREAS



PLANTING ISLAND DETAIL
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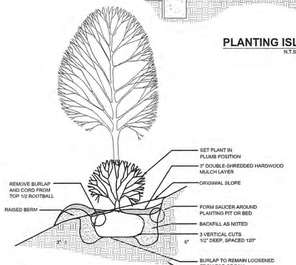
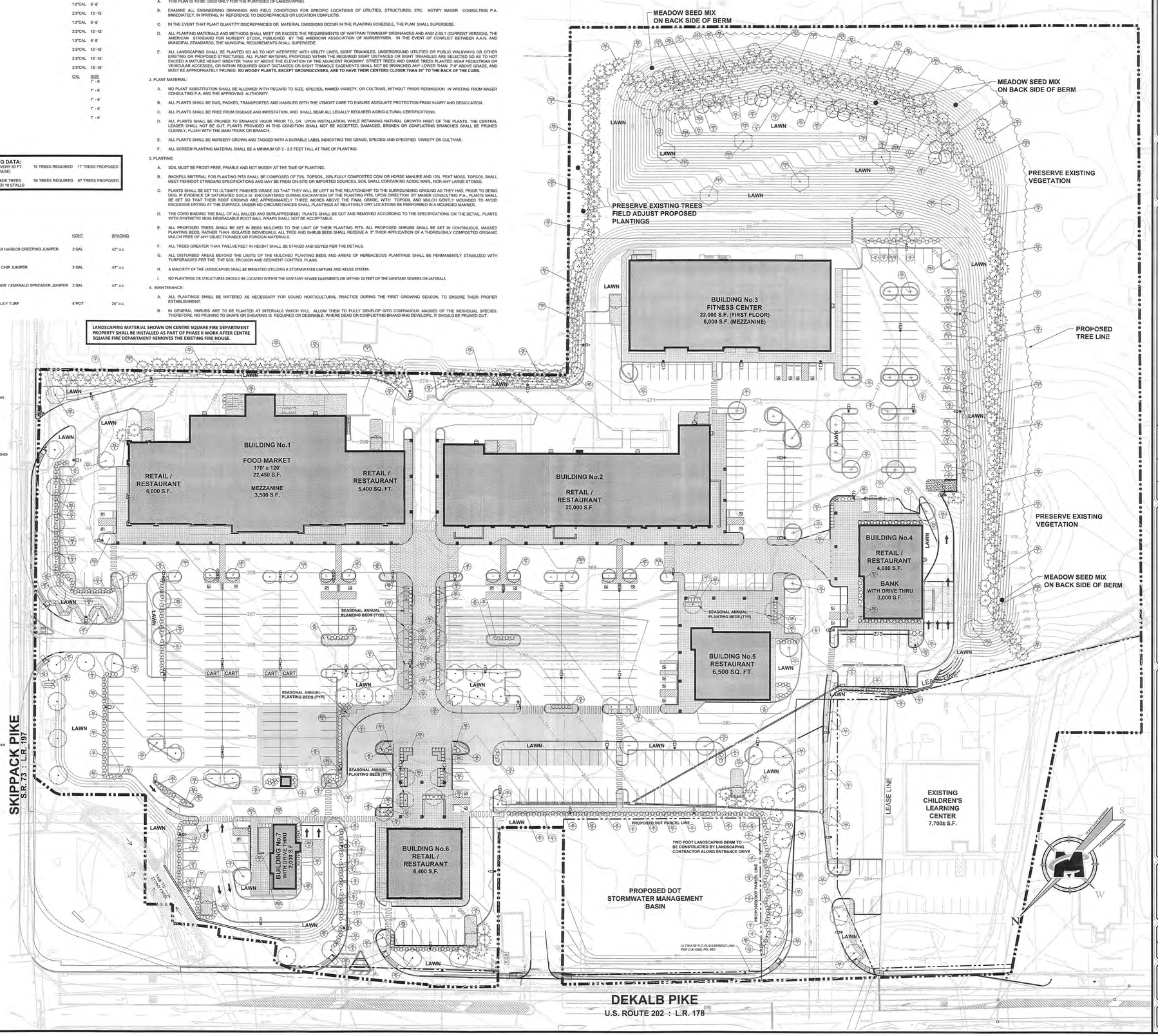


TYPICAL PLANTING ON SLOPE DETAIL
N.T.S.

40 32 24 16 8 0 10 40 80
SCALE : 1" = 40'



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PENNSYLVANIA REGISTERED LANDSCAPE ARCHITECT RYAN M. ARMOUR REGISTRATION NUMBER LA-002939

RYAN M. ARMOUR
PENNSYLVANIA REGISTERED
LANDSCAPE ARCHITECT - LICENSE NUMBER: LA002939

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FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

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Fax: 610.254.9141
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	RMM	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-LAND		

SHEET TITLE:
LANDSCAPE PLAN

SHEET NUMBER:
10 of 38

12000830A/Engineering/C-LAND/dwg/C-XX-LANDSCAPE By: RARMOUR

ALL OF THE FOOT-CANDLE LEVELS SHOWN ON THIS PLAN ARE INITIAL FOOT-CANDLE VALUES AND ARE TAKEN AT A HORIZONTAL PLANE AT GRADE LEVEL

ALL LIGHTS WHICH ARE NOT ESSENTIAL FOR SECURITY PURPOSES SHALL BE TURNED OFF NO LATER THAN ONE HOUR AFTER THE CLOSE OF BUSINESS. A PLAN INDICATING WHICH LIGHTS WILL BE LEFT ON FOR SECURITY PURPOSES WILL BE SUBMITTED BY THE DEVELOPER PRIOR TO CONSTRUCTION.

ALL PERIMETER LIGHT FIXTURES AREA DESIGNED TO DIRECT ILLUMINATION FORWARD INTO THE SITE AND NOT TO THE REAR OF THE FIXTURE. REFER TO LEGEND FOR SHIELDED FIXTURE LOCATIONS

LEGEND

(#1) LIGHT POLE FOUNDATIONS LOCATED ADJACENT TO UNDERGROUND STORMWATER BASIN ARE TO EXTEND BELOW THE BOTTOM OF THE STORMWATER BASIN

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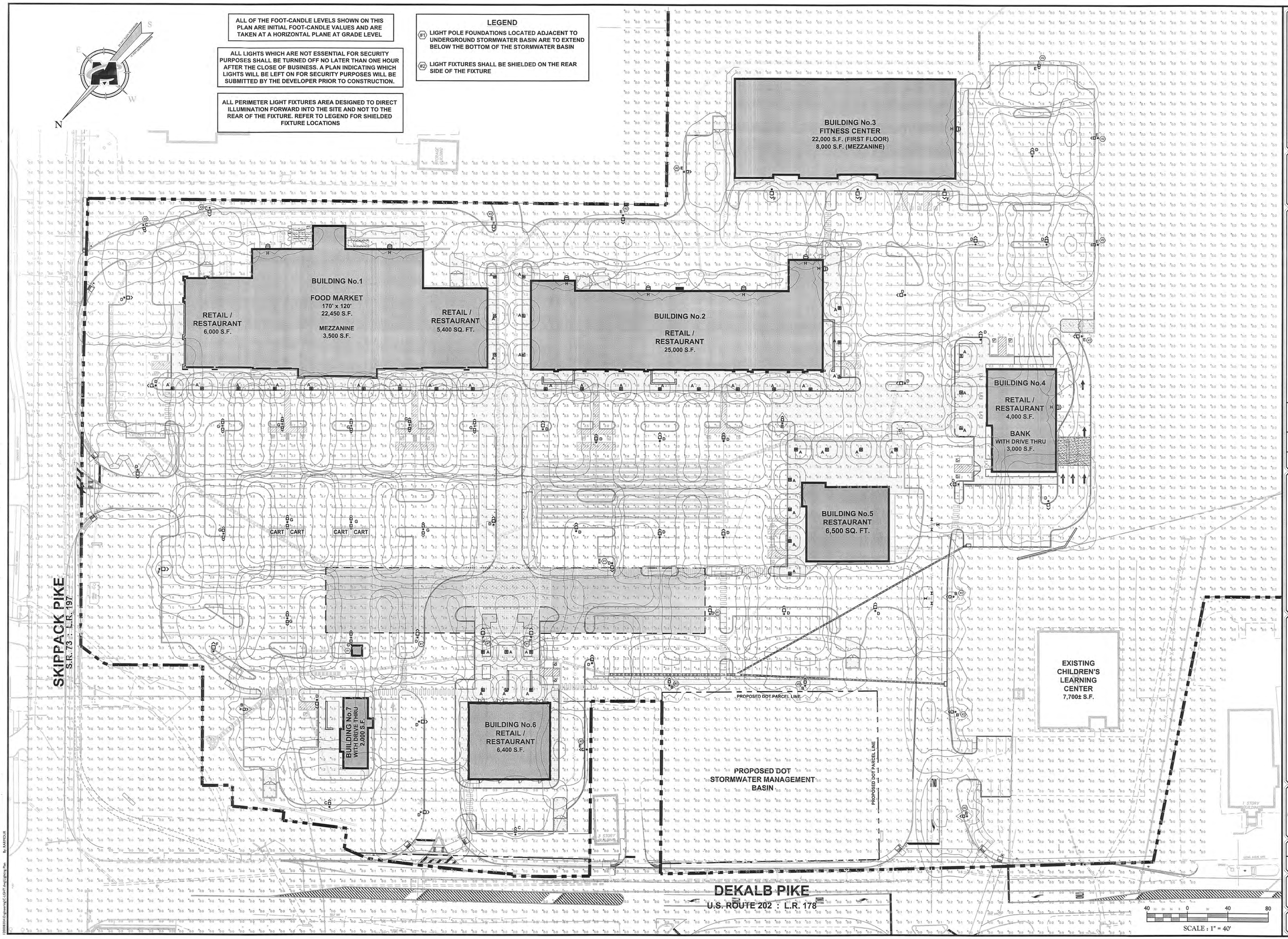

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

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2	10/09/15	EXTON	FINAL PLAN SUBMISSION
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
RUSSELL E. McFALL II
RUSSELL E. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

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PROJECT NUMBER: 12000830A		DRAWING NAME: C-LGHT	

SHEET TITLE:

LIGHTING PLAN

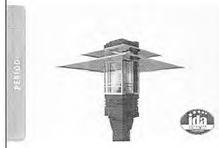
SHEET NUMBER:

12000830A-Engineering/C-LGHT dwg-Lighting Plan By: RAMNOUR

FIXTURE "TYPE A"

PKWS/PKWM/PKWB/PKSA/PKSP

Parkway Square® Small/Medium/Bollard/Sconce



- Three hood styles and six decorative screen options
- Custom mounting options, including 3" square pole
- Tool-less access
- Cast aluminum struts
- Full cutoff options
- IP65
- Powder coat finish in 13 standard colors with a polymer primer sealer

ORDERING INFORMATION

PKWS/PKWM/PKWB/PKSA/PKSP - - - - - - - - - - - -

MODEL

Pole Mount	
PKWS	Accent scale. *Slips over a 3" square top pole.*
PKWM	Pedestrian scale. *Slips over a 4" square top pole.*
Bollard	
PKWB	Bollard
Sconce	
PKSA	Accent scale
PKSP	Pedestrian scale

HOODS (not for sconce)

ANG	Angled hood
STR	Straight hood
IND	Indirect hood
DBL	Double hood

DISTRIBUTION

Horizontal lens - *Available with ANG hood only. Flat glass lens. PKWM only.*

Y2H, Y3H, Y4H, Y5H	IES Type 2, 3, 4, 5 distribution.

Vertical lens - *Available with ANG hood only. Flat glass lens.*

Y2V, Y3V, Y4V, Y5V	IES Type 2, 3, 4, 5 distribution.

LENS

C	Clear secondary lens
D	Diffused secondary lens

DIMENSIONS

SMALL
21" SQ x 21.75" H - Vertical
14" SQ x 23" H - Horizontal

COLOR TEMPERATURE

PKWS - *T1, T3, T5 (IES Type 1, 3, 5 distribution)*

9LED-3K	9 LED array, 3000K. *GLA only.*
9LED-4K	9 LED array, 4200K. *GLA only.*
9LED-5K	9 LED array, 5100K. *GLA only.*
18LED-3K	18 LED array, 3000K. *GLA only.*
18LED-4K	18 LED array, 4200K. *GLA only.*
18LED-5K	18 LED array, 5100K. *GLA only.*
36LED-3K	36 LED array, 3000K
36LED-4K	36 LED array, 4200K
36LED-5K	36 LED array, 5100K

PKWM

32LED-3K	3000K. *VL3 & VL5 only.*
32LED-4K	4200K. *VL3 & VL5 only.*
32LED-5K	5100K. *VL3 & VL5 only.*

PKWB - *T1, T3, T5 (IES Type 1, 3, 5 distribution)*

6LED-3K	6 LED array, 3000K. *GLA only.*
6LED-4K	6 LED array, 4200K. *GLA only.*
6LED-5K	6 LED array, 5100K. *GLA only.*
12LED-3K	12 LED array, 3000K. *GLA only.*
12LED-4K	12 LED array, 4200K. *GLA only.*
12LED-5K	12 LED array, 5100K. *GLA only.*
36LED-3K	36 LED array, 3000K. *Horizontal LED only.*
36LED-4K	36 LED array, 4200K. *Horizontal LED only.*
36LED-5K	36 LED array, 5100K. *Horizontal LED only.*

PKSA

15LED-3K	15 LED array, 3000K. *DB/DS/UB/US only.*
15LED-4K	15 LED array, 4200K. *DB/DS/UB/US only.*
15LED-5K	15 LED array, 5100K. *DB/DS/UB/US only.*
24LED-3K	24 LED array, 3000K. *DBUS/UBDS/USDS only.*
24LED-4K	24 LED array, 4200K. *DBUS/UBDS/USDS only.*
24LED-5K	24 LED array, 5100K. *DBUS/UBDS/USDS only.*

PKSP

18LED-3K	18 LED array, 3000K. *DB/DS/UB/US only.*
18LED-4K	18 LED array, 4200K. *DB/DS/UB/US only.*
18LED-4K	18 LED array, 5100K. *DB/DS/UB/US only.*
30LED-3K	30 LED array, 3000K. *DBUS/UBDS/USDS only.*
30LED-4K	30 LED array, 4200K. *DBUS/UBDS/USDS only.*
30LED-5K	30 LED array, 5100K. *DBUS/UBDS/USDS only.*

DRIVER (PKWM, PKWB, PKSA, PKSP only)

700mA	700mA, 75 watts. *Y2H only.*
550mA	550mA, 59 watts. *Y2V only.*
450mA	450mA, 48 watts. *Y2H only.*

DECORATIVE SCREENS (OPTIONAL)

Painted to match fixture. Also available in stainless steel or copper. Not available with MicroEmitter or horizontal LED optics.

DSIN	Infinity design
DSOF	Offset design
DSWH	Wheat design
DSTR	Trio design
DSSH	Shutter design
DSCS	Custom design (Contact factory)

OPTIONS

ULS	Upper lens shield. Reduces light above hood.
TA23	2 3/8" O.D. x 4" long tenon. Required for all poles, except for PS4. *GLA only. For A4L poles, order TEN23 option.*
LDL	Lightly diffused lens
COP	Brushed copper hood
STS	Stainless steel hood
SSP	Screen in brushed stainless steel
CPR	Screen in brushed copper

COLORS

AWT	Arctic White
BLK	Black
MTB	Matte Black
DGN	Dark Green
DBZ	Dark Bronze
WRZ	Weathered Bronze
BRM	Metallic Bronze
VBL	Verde Blue
CRT	Cortem
MAL	Matte Aluminum
MDG	Medium Grey
ATG	Antique Green
LGY	Light Grey
RAL/ PREMIUM COLOR	Provide a RAL 4 digit color number
CUSTOM COLOR	Please provide color chip for matching

MOUNTING (not for Sconce)

Wall Mount - Mounting plate provided. Hardware by others.	
PSWM-TU	Fixture above with arm mounted up.
PSWM-TD	Fixture above with arm mounted down.
PSWM-BU	Fixture below with arm mounted up.
PSWM-BD	Fixture below with arm mounted down.
Pole Mount - Arm mounts to side of a 4" O.D. pole.	
PSA-TU	Fixture above with arm mounted up.
PSA-TD	Fixture above with arm mounted down.
PSA-BU	Fixture below with arm mounted up.
PSA-BD	Fixture below with arm mounted down.
PM	Pier mount (PKWB only)

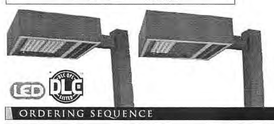
274 architectural area lighting

FIXTURE "TYPE B, C, D, E, F, G"

EXECUTIVE-RT SERIES

STERNER EXTRUDED SERIES

EXEC - RT21-RT25 SPEC SHEET



DIMENSIONS

EXEC-RT21
EPA: 1.6 WT: 31lbs.
Dimensions: a=16" b=21" c=6.75"
Arm: 2"x4"x8"

EXEC-RT25
EPA: 2.2 WT: 40 lbs.
Dimensions: a=20" b=25" c=8.75"
Arm: 2"x4"x8"

ORDERING SEQUENCE

- - - - - - - - - - - - - -

FAMILY	# OF LEDS	CCT	DRIVE CURRENT	DISTRIBUTION	VOLTAGE	MOUNTING	OPTIONS	COLOR	POLE SECTION
EXEC RT21	30L 30 High brightness LEDs	3K 3000K	070 700mA (standard)	2 Type II	U Universal 120V277V, 50/60 Hz	10	WM Wall mount	Powder Coat	STR Square straight
EXEC RT25	60L 60 High brightness LEDs	4K 4000K	035[1] 350mA Amber (required with Amber CCT)	3 Type III	1[2] 120V	28	VF Vertical slipfitter	BL Black	C30 3.0" dia round
		5K 5100K		4 Type IV	2[2] 208V	29	HF Horizontal slipfitter	DB Dark Bronze	C35 3.5" dia round
		AM Amber (590 um available for "Turtle friendly" applications (consult factory)		5M Type V medium	3[2] 240V	32	F[3] Fuse	WH White	C40 4.0" dia round
				5S Type V short	4[2] 277V	39	EXI Extruded insert	PS Platinum Silver	C45 4.5" dia round
				5W Type V wide	S 480V, 60 Hz	49	BC[4] Backlight Control		C50 5.0" dia round
				2L Type II Rotated 90° left	F 347V, 60 Hz				C60 6.0" dia round
				3L Type III Rotated 90° left	E 220V, 50 Hz				
				4L Type IV Rotated 90° left					
				2R Type II Rotated 90° right					
				3R Type III Rotated 90° right					
				4R Type IV Rotated 90° right					

CONTROLLABILITY OPTIONS

SCO[1]	On/Off control - No light output when no motion detected
SCP[1]	High/low control - user programmable settings. Factory default is 10%
PR[1]	Photo cell receptacle
WHI[1]	In-fixture wireless control module (120, 277, 347 & 480V)

Note: First digit denotes fixture assembly per assembly.

SCP CONTROL OPTION

SCP-REMOTE Remote control for SCP option. Order at least one per project to program and control fixtures. 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120V or 277V only.

OPTICS

FIXTURE MOUNTING - FACTORY ROTATED OPTICS

For proper light distribution and performance, rotated optics must be mounted as referenced in illustration. Consult instruction sheet included when mounting.

2L Type II rotated 90° left
3L Type III rotated 90° left
4L Type IV rotated 90° left
2R Type II rotated 90° right
3R Type III rotated 90° right
4R Type IV rotated 90° right

GENERAL OPTIONS

☐ **WM** Wall mount

☐ **VF** Vertical slip fitter

FINISH OPTIONS

☐ **HF** Horizontal slip fitter

☐ **FL** Fuse luminaire
☐ **EXI** Extruded arm insert[2]
☐ **BC** Backlight control
☐ **N** Not required

Note: 1) 32" mounting (OB120) only available with rotated pole or modified pole top fitter
2) If the color for the "RM" extruded arm insert is not specified, insert will be brushed aluminum.

Powder Paint

☐ **BL** Black
☐ **DB** Dark Bronze
☐ **WH** White
☐ **AL** Natural Aluminum
☐ **NS** Not Standard Finish (consult factory) (provide color chip)

STERNER EXTRUDED SERIES 701 Millennium Blvd • Greenville, SC 29607 • TEL 864.678.1000 FAX 864.678.1417 • www.sternerlighting.com
2/15
In the interest of continuous product improvement, Sterner Lighting reserves the right to change specifications without notice.
HUBBELL Lighting 1

FIXTURE "TYPE H"

QSP/RDI LED

NEW

ARCHITECTURAL WALLPACKS

Cat.#
Job
Type

SPAULDING LIGHTING
Approvals

SPECIFICATIONS

Applications:
- Architectural wallpack in two stylish shapes with molded contours to accentuate building architecture. Provides excellent illumination in energy-saving LED systems.

Construction:
- Die-cast aluminum housing and door
- Seven powder coat standard finishes, plus custom color options

LED:
- 30 high power LEDs deliver up to 5,062 lumens
- Up to 105 Lumens per watt
- Different lenses offer a variety of distribution patterns - Type II, III, and IV (Forward throw)
- 3000K - 80 CRI, 4000K - 70 CRI, and 5000K - 67 CRI, CCT nominal

Operating Temperature:
- -40°C/-40°F to 40°C/104°F for 350mA
- -30°C/-22°F to 40°C/104°F for 530mA

Electrical:
- Two driver options: 34w at 350mA (1 driver) and 53w at 525mA (1 driver)

Electrical (Cont.):
- Operating temperature: -30°C/-22°F to 40°C/104°F
- 120-277VAC, 50/60Hz
- Power factor ≥ 90%
- THD (Total Harmonic Distortion) <20%
- 10 KA, 10 KV, 270 joules surge suppressor

Controls:
Drivers are 0-10V dimming standard; Photocell and occupancy sensor options available for complete on/off and dimming control

Listings:
- UL 1598 listed for use in wet locations
- 4K and 5K models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: http://www.designlights.org/QPL
- Zero uplight (U0), dark sky, neighbor friendly
- Drivers IP66 and RoHS compliant

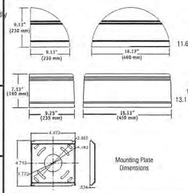
Warranty:
For more information visit: http://www.hubbelloutdoor.com/resources/warranty/

PRODUCT IMAGE(S)

QSP

RDI

DIMENSIONS



SHIPPING INFORMATION

Catalog Number	G.W.lbs/ CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
QSP	17 (7.7)	20.5 (52)	10.5 (26)	11 (28)
RDI	16 (6.2)	20.5 (52)	9.5 (24)	12 (30)

CERTIFICATIONS/LISTINGS

ORDERING INFORMATION

ORDERING EXAMPLE: TRP-30L5K-053-2-U-DB

- 30L - - - - - - - - - -

FAMILY	# OF LEDS	CCT	DRIVE CURRENT	DISTRIBUTION	VOLTAGE	FINISH	CONTROL OPTIONS	OPTIONS
QSP Quarterphase	30L 30 High brightness LEDs	3K[1] 3000K	035 350mA	2 Type II	U 120V-277V	CC[2] Custom Color	PC[3] Photocontrol (Must specify individual voltage)	F[1] Fusing (Must specify individual voltage)
RDI Radius		4K 4000K	053 525mA	3 Type III	1[1] 120V	BL Black	SCO[1,5] Motion sensor On/Off control. No light output when no motion detected	
		5K 5000K		4 Type IV	2[1] 208V	DB Bronze	SCP[1,5] Programmable motion control, factory default is 10% light output Control notes	
					3[1] 240V	FG Forest Green		
					4[1] 277V	GR Gray		
						PS Platinum		
						RD Red		
						WH White		

[1] Must specify individual voltage for PC and Fusing options
[2] Must specify color chip for custom color. Order required to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings. 120V or 277V only
[3] Consult factory for Custom Color option
[4] DLC qualification 4K and 5K models only
[5] PC option not applicable, included in sensor

ACCESSORIES - Order separately

Catalog Number	Description
SCP-REMOTE[1]	Remote control for SCP option. Order at least one per project to program and control.

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HUBBELL Lighting

LIGHTING SCHEDULE

KEY	QTY.	ARRANGEMENT	MANUFACTURER	DESCRIPTION	LUMENS	LLF	WATTS	FIXTURE MOUNTING HEIGHT	COLOR
A	43	SINGLE	ARCHITECTURAL AREA LIGHTING MODEL: PKWM-STR-Y2VD-32LED-4K-525	LED LUMINAIRE WITH CAST ALUMINUM STRUTS AND GEAR COMPARTMENT DIFFUSED ACRYLIC LENS LAMP: 32 LED ARRAY 4200K	2332.805	1.00	58.6	12'	DARK BRONZE
B	7	SINGLE	STERNER LIGHTING MODEL: EXEC-RT21-60L-4K-3	TYPE 3 LENS LAMP: 60 - NICHIA 4200K LED	11092.71	1.00	142.3	25'	DARK BRONZE
C	4	SINGLE	STERNER LIGHTING MODEL: EXEC-RT21-60L-4K-4-BC	TYPE 4 LENS WITH BACK CONTROL LAMP: 60 - NICHIA 4200K LED	8203.326	1.00	142	25'	DARK BRONZE
D	28	SINGLE	STERNER LIGHTING MODEL: EXEC-RT21-60L-4K-5M	TYPE 5M LAMP: 60 - NICHIA 4200K LED	11603.36	1.00	142.2	25'	DARK BRONZE
E	8	SINGLE	STERNER LIGHTING MODEL: EXEC-RT21-60L-4K-3-BC	TYPE 3 LENS WITH BACK CONTROL LAMP: 60 - NICHIA 4200K LED	7456.388	1.00	142	25'	DARK BRONZE
F	7	SINGLE	STERNER LIGHTING MODEL: EXEC-RT21-60L-4K-4	TYPE 4 LENS LAMP: 60 - NICHIA 4200K LED	10713.27	1.00	142.2	25'	DARK BRONZE
G	11	DOUBLE	STERNER LIGHTING MODEL: EXEC-RT21-60L-4K-5M	TYPE 5M LAMP: 60 - NICHIA 4200K LED	11603.36	1.00	284.4	25'	DARK BRONZE
H	9	SINGLE WALL MOUNTED	SPAULDING LIGHTING MODEL: RDI-30L4K-053-2	TYPE 2 LENS LAMP: 30 - NICHIA 4200K LED	4466.271	1.00	53.1	20'	DARK BRONZE

NOTE: LIGHT FIXTURES B, C, D, E, F, AND G ARE TO BE MOUNTED ON A TWO AND A HALF FEET TALL CONCRETE BASE. LIGHT FIXTURE 'A' IS TO BE MOUNTED FLUSH WITH PAVERS.

CALCULATION SUMMARY

SITE LIGHTING CALCULATION STATISTICS	Avg	Max	Min	Max/Min	Avg/Min
MAIN PARKING AREA	2.3	6.3	0.4	15.8 : 1.0	5.8 : 1.0
ENTIRE SITE	1.1	6.8	0.0	N/A	N/A

NOTE: THE MAXIMUM TO MINIMUM LIGHT LEVEL RATIO SET BY IESNA FOR PARKING LOTS IS, 20:1

LEGEND

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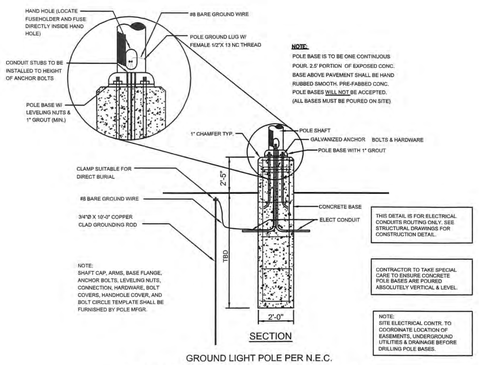

GROUND LIGHT POLE PER N.E.C.

LIGHT POLE BASE DETAIL

FIXTURES B, C, D, E, F AND G

N.T.S.

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RUSSELL T. MCFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
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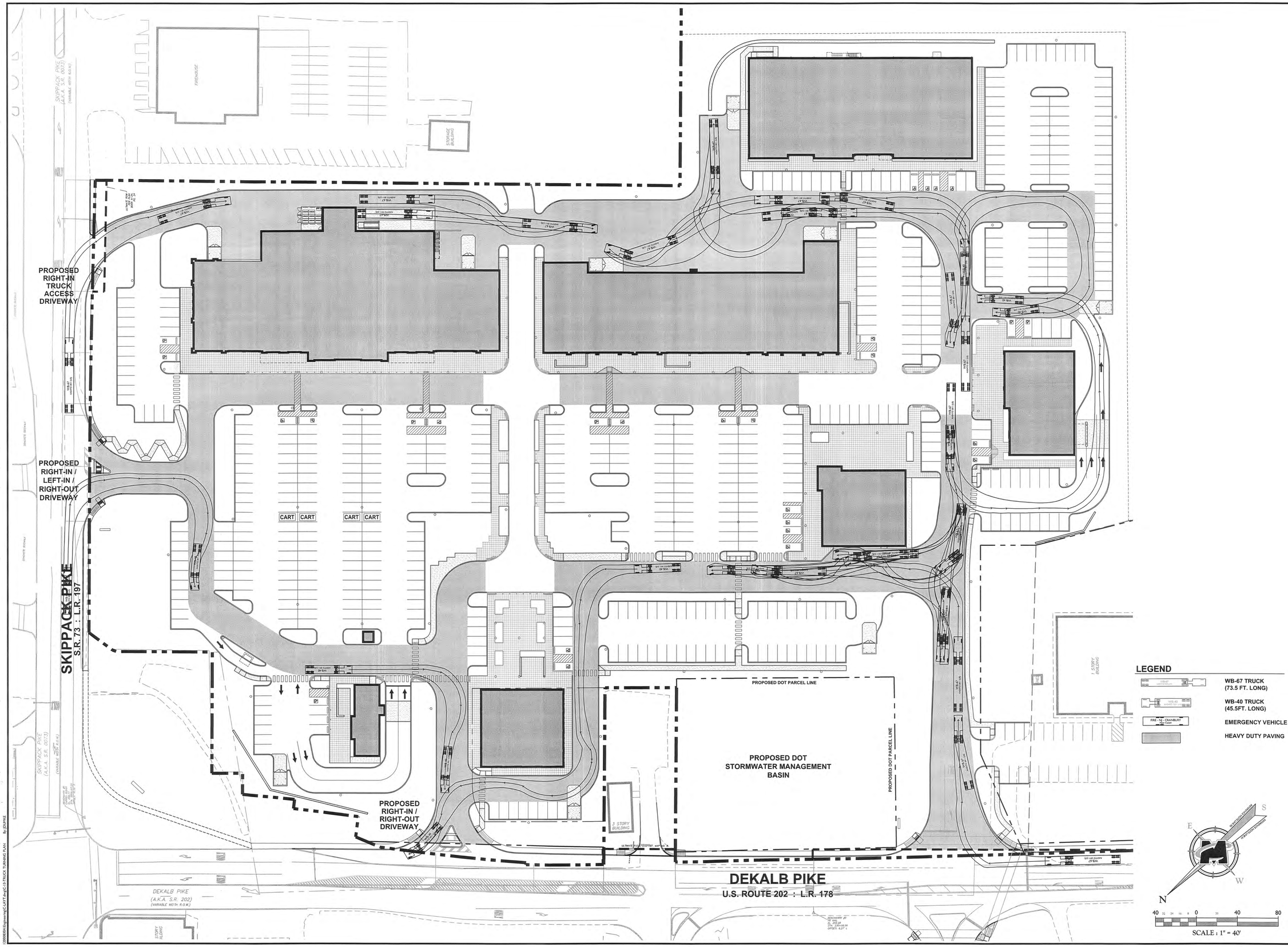
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	RMA	RTM

PROJECT NUMBER: 12000830A
DRAWING NAME: C-LGHT

SHEET TITLE: LIGHTING DETAILS

SHEET NUMBER: 12 of 38

12000830A Engineering\C-LGHT Aug\Lighting Details By: RAMPOUR



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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. MCFALL II

RUSSELL T. MCFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
Phone: 610.254.9140
Fax: 610.254.9141

email: solutions@maserconsulting.com

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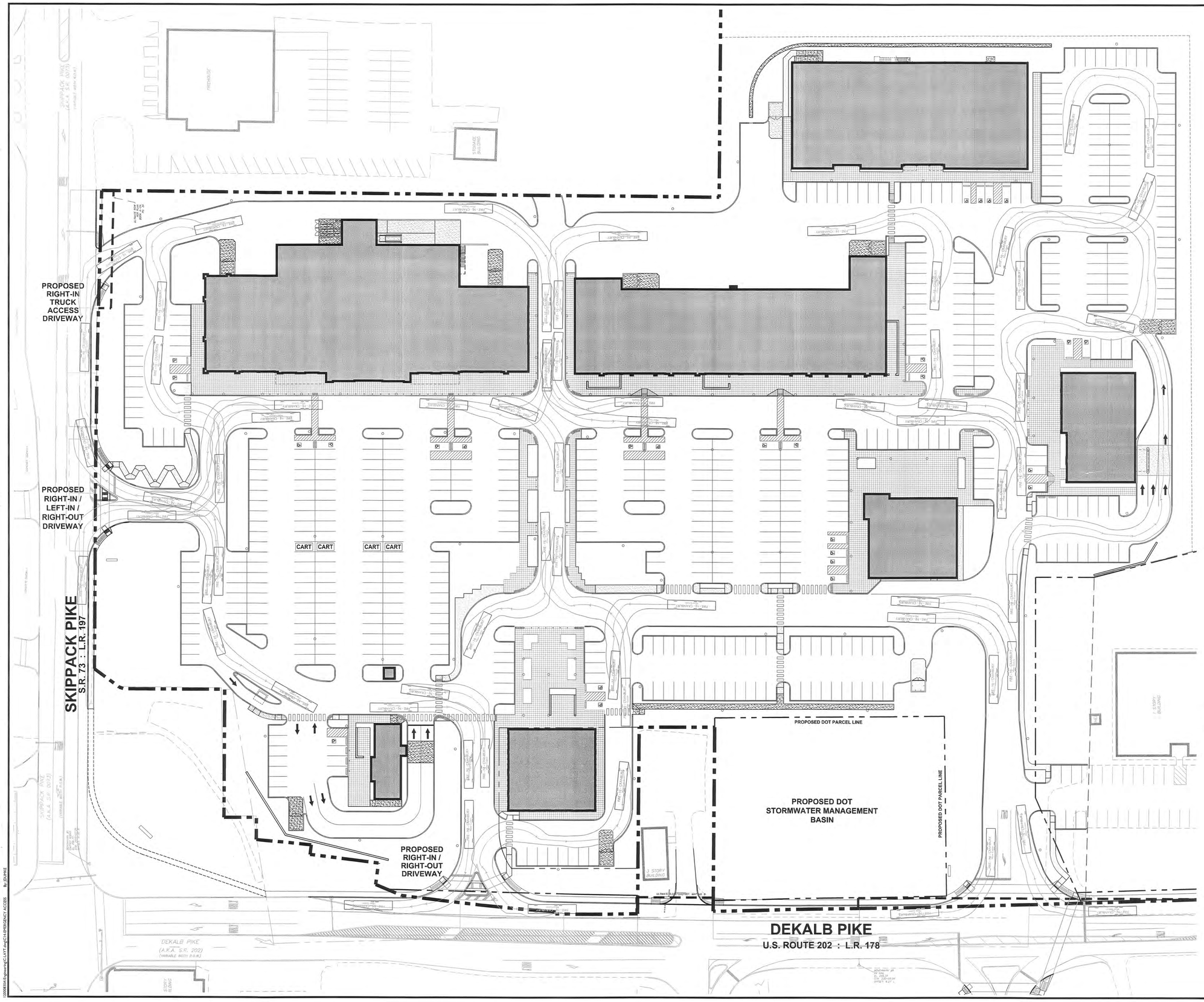
PROJECT NUMBER: 12000830A
DRAWING NAME: C-LAYT

SHEET TITLE:
TRUCK TURNING AND PAVING PLAN

SHEET NUMBER:
13 of 38

12000830A\Engineering\C-LAYT.dwg\C-13-TRUCK TURNING PLAN By: JDUPKE



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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
RUSSELL J. McFALL II
PE-060408

RUSSELL J. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - SERIAL NUMBER: PE060408

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PROJECT NUMBER:		DRAWING NAME:	
120000830A		C-LAYT	

SHEET TITLE:
FIRE TRUCK TURNING MOVEMENTS

SHEET NUMBER:
14 of 38

120000830A/Engineering/C-LAYT.dwg/C14-FIRE(ENC) ACCESS By: DIUPKE

CRITICAL STAGE / SEQUENCE OF UNDERGROUND STORMWATER BASIN INSTALLATION

CRITICAL STAGE #1: COMMENCE INSTALLATION OF UNDERGROUND DETENTION FACILITY NO. 1(BMP)
A. CONTRACTOR TO INSTALL CONSTRUCTION FENCE AROUND THE ENTIRE UNDERGROUND DETENTION AREA AND PROTECT THE AREA AT ALL TIMES.
B. INSTALL OUTLET STRUCTURE AND OUTLET PIPE. CONSTRUCTION FENCE WHICH HAS BEEN REMOVED FOR THIS STAGE OF CONSTRUCTION MUST BE RE-INSTALLED AND STABILIZED AT THE END OF THE WORKING DAY.
C. INSTALL THE UNDERGROUND DETENTION SYSTEM AS INDICATED ON THE DETAIL SHEET.

CRITICAL STAGE #1a: COMMENCE INSTALLATION OF IRRIGATION SYSTEM(BMP)
A. CONTRACTOR SHALL MAKE THEMSELVES FAMILIAR WITH ALL ASPECTS OF THE PCSM SYSTEM.
B. PRIOR TO ANY TRENCHING, CONSTRUCTION OR INSTALLATION, THE CONTRACTOR SHALL FLAG OUT AREA TO ENSURE LOCATION OF THE PIPE, SPRINKLER HEADS VALVES, ETC.
C. INSTALL WET WELL AND INTAKE PIPE AND SCREEN.
D. INSTALL PUMP STATION.
E. INSTALL ROAD AND PARKING LOT SLEEVES.
F. INSTALL MAINS, LATERALS, VALVES AND COMMUNICATION CABLE, SENSORS AND SPRINKLER HEADS.
G. TEST SYSTEM AND ADJUST SPRINKLER HEADS AS NECESSARY.

* FOR ADDITIONAL DETAIL, SEE PCSM NARRATIVE FOR IRRIGATION SYSTEM DESIGN AND IRRIGATION LAYOUT.

CRITICAL STAGE #2: COMMENCE INSTALLATION OF UNDERGROUND DETENTION FACILITY NO. 2(BMP)
A. CONTRACTOR TO INSTALL CONSTRUCTION FENCE AROUND THE ENTIRE UNDERGROUND DETENTION AREA AND PROTECT THE AREA AT ALL TIMES.
B. INSTALL OUTLET STRUCTURE AND OUTLET PIPE. CONSTRUCTION FENCE WHICH HAS BEEN REMOVED FOR THIS STAGE OF CONSTRUCTION MUST BE RE-INSTALLED AND STABILIZED AT THE END OF THE WORKING DAY.
C. INSTALL THE UNDERGROUND DETENTION SYSTEM AS INDICATED ON THE DETAIL SHEET.
D. CONNECT BASIN NO. 2 TO BASIN NO. 1.

THE CONTRACTOR ASSUMES RESPONSIBILITY TO PROVIDE CLEAN FILL TO AND FROM THE SITE.
CLEAN FILL IS UNCONTAMINATED, NON-WATER SOLUABLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL.

DUE DILIGENCE IS AN INVESTIGATIVE TECHNIQUE INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA SEARCHES, REVIEW OF THE PROPERTY OWNERSHIP, REVIEW OF THE PROPERTY HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS.

SOIL DESCRIPTIONS AND USE LIMITATIONS (ACCORDING TO PADEP E&SCP MANUAL) :

Bo—BOWMANSVILLE-KNAUERS SILT LOAMS:
DESCRIPTION OF KNAUERS
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 72-99 INCHES
DEPTH TO WATER TABLE: 0 INCHES

DESCRIPTION OF BOWMANSVILLE
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 72-99 INCHES
DEPTH TO WATER TABLE: 0-18 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
DEPTH TO BEDROCK AND DEPTH TO WATER TABLE
MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILTY
NO PROPOSED IMPROVEMENTS ARE LOCATED WITHIN THIS AREA.

CfA—CHALFONT SILT LOAM:
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 42 - 99 INCHES (15 - 30 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 6-18 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
VERY LIMITED FOR SMALL COMMERCIAL BUILDINGS, DEPTH TO BEDROCK AND DEPTH TO WATER TABLE
MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILTY
BUILDING CONSTRUCTION IS MINIMAL WITHIN THE CFA SOIL ALTHOUGH SOME BEDROCK WILL HAVE TO BE EXCAVATED FOR BUILDING FOUNDATIONS.

CfB—CHALFONT SILT LOAM:
3 TO 8 % SLOPES
DEPTH TO BEDROCK: 42 - 99 INCHES (15 - 30 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 6-18 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
VERY LIMITED FOR SMALL COMMERCIAL BUILDINGS, DEPTH TO BEDROCK AND DEPTH TO WATER TABLE
MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILTY
BUILDING CONSTRUCTION IS MINIMAL WITHIN THE CFA SOIL ALTHOUGH SOME BEDROCK WILL HAVE TO BE EXCAVATED FOR BUILDING FOUNDATIONS.

LeA—LAWRENCEVILLE SILT LOAM:
0 TO 3 % SLOPES
DEPTH TO BEDROCK: 48 - 99 INCHES (24 - 38 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 18-36 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
DEPTH TO BEDROCK AND DEPTH TO WATER TABLE
MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILTY
NO PROPOSED IMPROVEMENTS ARE LOCATED WITHIN THIS AREA.

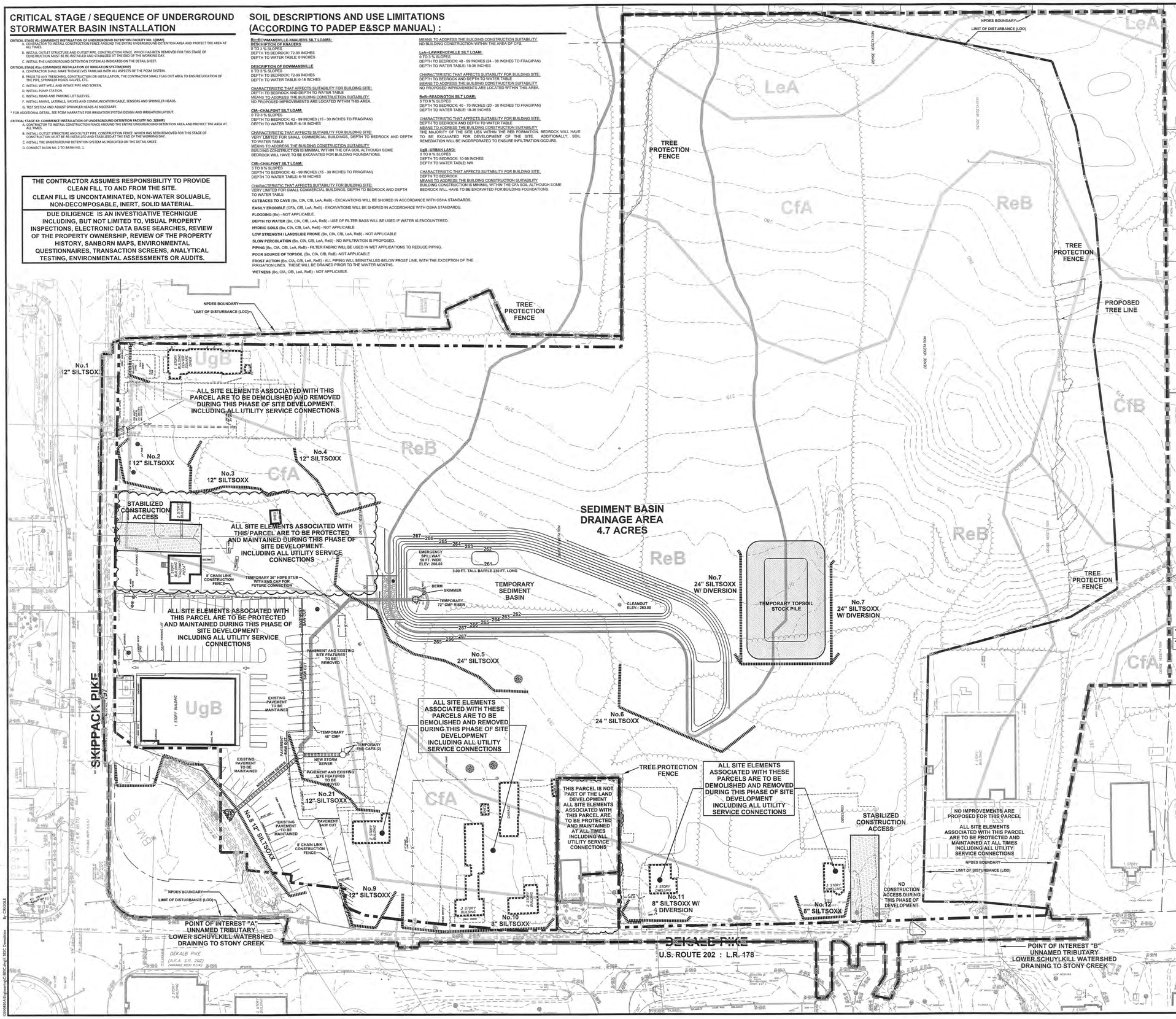
ReB—READINGTON SILT LOAM:
3 TO 8 % SLOPES
DEPTH TO BEDROCK: 40 - 70 INCHES (20 - 36 INCHES TO FRAGIPAN)
DEPTH TO WATER TABLE: 18-36 INCHES

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
DEPTH TO BEDROCK AND DEPTH TO WATER TABLE
MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILTY
THE MAJORITY OF THE SITE LIES WITHIN THE REB FORMATION. BEDROCK WILL HAVE TO BE EXCAVATED FOR DEVELOPMENT OF THE SITE. ADDITIONALLY, SOIL REMEDIATION WILL BE INCORPORATED TO ENSURE INFILTRATION OCCURS.

UgB—URBAN LAND:
0 TO 8 % SLOPES
DEPTH TO BEDROCK: 10-98 INCHES
DEPTH TO WATER TABLE: N/A

CHARACTERISTIC THAT AFFECTS SUITABILITY FOR BUILDING SITE:
DEPTH TO BEDROCK
MEANS TO ADDRESS THE BUILDING CONSTRUCTION SUITABILTY
BUILDING CONSTRUCTION IS MINIMAL WITHIN THE CFA SOIL ALTHOUGH SOME BEDROCK WILL HAVE TO BE EXCAVATED FOR BUILDING FOUNDATIONS.

CUTBACKS TO CAVE (Bo, CIA, CIB, LeA, ReB) - EXCAVATIONS WILL BE SHORED IN ACCORDANCE WITH OSHA STANDARDS.
EASILY ERODIBLE (CFA, CIB, LeA, ReB) - EXCAVATIONS WILL BE SHORED IN ACCORDANCE WITH OSHA STANDARDS.
FLOODING (Bo) - NOT APPLICABLE.
DEPTH TO WATER (Bo, CIA, CIB, LeA, ReB) - USE OF FILTER BAGS WILL BE USED IF WATER IS ENCOUNTERED.
HYDRIC SOILS (Bo, CIA, CIB, LeA, ReB) - NOT APPLICABLE
LOW STRENGTH / LANDSLIDE PRONE (Bo, CIA, CIB, LeA, ReB) - NOT APPLICABLE
SLOW PERCOLATION (Bo, CIA, CIB, LeA, ReB) - NO INFILTRATION IS PROPOSED.
PIPING (Bo, CIA, CIB, LeA, ReB) - FILTER FABRIC WILL BE USED IN WET APPLICATIONS TO REDUCE PIPING.
POOR SOURCE OF TOPSOIL (Bo, CIA, CIB, ReB) -NOT APPLICABLE
FROST ACTION (Bo, CIA, CIB, LeA, ReB) - ALL PIPING WILL BEINSTALLED BELOW FROST LINE, WITH THE EXCEPTION OF THE IRRIGATION LINES. THESE WILL BE DRAINED PRIOR TO THE WINTER MONTHS.
WETNESS (Bo, CIA, CIB, LeA, ReB) - NOT APPLICABLE.



DEMOLITION NOTES:

1. THE DEMOLITION CONTRACTOR AND GENERAL CONTRACTOR SHALL BE DEEMED TO HAVE VISITED THE SITE AND ACCEPTED THE SITE AS IS.
2. THE DEMOLITION CONTRACTOR SHALL CARRY OUT THE WORK OF THIS CONTRACT PLACING THE SAFETY AND PROTECTION OF THE SURROUNDING COMMUNITY AND PROPERTY AT THE HIGHEST PRIORITY. THE DEMOLITION CONTRACTOR SHALL IMPLEMENT SPECIFIED MEASURES, AND ANY OTHER MEASURES DEEMED NECESSARY, TO PROTECT ADJACENT AND ON-SITE PROPERTY, BUILDINGS, HOMES, BUSINESSES, FACILITIES AND VEHICLES.
3. THE DEMOLITION CONTRACTOR SHALL ENSURE FREE AND SAFE PASSAGE OF PERSONS AROUND THE AREA OF THE DEMOLITION AS DIRECTED BY THE OWNER AND THE BOROUGH OFFICIALS. ALL OPERATIONS SHALL BE CONDUCTED SO AS TO PREVENT DAMAGE TO ADJACENT BUILDINGS, STRUCTURES, OTHER FACILITIES, AND INJURY TO PERSONS, BOTH PEDESTRIAN AND WORKERS ALIKE.
4. THE CONSULTANT IS NOT RESPONSIBLE FOR JOB SITE SAFETY AND CANNOT STOP THE DEMOLITION ACTIVITIES.
5. THE DEMOLITION CONTRACTOR SHALL INSTALL ROADWAY CONSTRUCTION SIGNAGE AND ASSOCIATED TRAFFIC MEASURES AS NECESSARY FOR WORK SHOWN ON THE CONTRACT DRAWINGS.
6. THE DEMOLITION CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING THE SECURITY OF THE PROJECT SITE DURING ALL NON-WORKING HOURS, SEVEN DAYS A WEEK.
7. ALL UTILITY LOCATIONS ARE APPROXIMATE AND ADDITIONAL UTILITIES MAY EXIST. IT SHALL BE THE DEMOLITION CONTRACTOR'S RESPONSIBILITY TO IDENTIFY THE ACTUAL LOCATION OF ALL UTILITIES IMPACTED BY THIS WORK, AND WHICH MUST BE MAINTAINED OR REMOVED, WHETHER SHOWN OR NOT SHOWN ON THE CONTRACT DRAWINGS.
8. THE DEMOLITION CONTRACTOR SHALL COMPLETELY REMOVE ALL UTILITY SERVICE CONNECTIONS AND APPURTENANCES TO ALL FACILITIES WITHIN THE DEMOLITION AREA UNLESS OTHERWISE NOTED. ALL FOUNDATIONS ARE TO BE COMPLETELY REMOVED.
9. ALL BUILDING, STRUCTURE AND FACILITY FOUNDATIONS ARE TO BE REMOVED COMPLETELY BY THE DEMOLITION CONTRACTOR.
10. THE DEMOLITION CONTRACTOR SHALL BACKFILL ALL VOIDS REMAINING FROM THE REMOVAL OF FOUNDATIONS, UTILITIES AND OTHER SUBSURFACE ELEMENTS WITH STRUCTURAL, COMPACTED FILL MATERIAL IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
11. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE NECESSARY DEMOLITION PERMITS.
12. THE DEMOLITION CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF OFF-SITE ANY HAZARDOUS MATERIALS ENCOUNTERED DURING THE DEMOLITION OR SITE CLEARING ACTIVITIES. BEFORE ANY OFF-SITE REMOVALS, THE DEMOLITION CONTRACTOR HAS TO PROVIDE, IN WRITING, THE PROPOSED DESTINATION OF ALL MATERIALS.
13. DEMOLITION AND BACKFILLING WORK IS TO BE PERFORMED IN DRY WEATHER.
14. THE DEMOLITION CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVAL WITH EACH RESPECTIVE UTILITY PROVIDER.

DEMOLITION SEQUENCE OF ACTIVITIES:

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PREPARER, AND THE MONTGOMERY COUNTY SOIL CONSERVATION DISTRICT TO AN ON-SITE MEETING.

AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED ON THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA UTILITY ONE-CALL SYSTEM AT 1-800-242-1776 TO ORDER A UTILITY MARK-OUT AT THE SITE.

ALL STRUCTURES ASSOCIATED WITH THE CONSTRUCTION OF SEDIMENT REMOVAL FACILITIES MUST BE ON-SITE PRIOR TO EARTH DISTURBANCE.

CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO INSTITUTE ADDITIONAL MEASURES IF ANY EROSION AND SEDIMENTATION CONTROL PROBLEMS ARISE PRIOR TO THE STABILIZATION OF EROSION AND SEDIMENTATION CONTROL MEASURES ON-SITE.

AS SOON AS SLOPE AND OTHER DISTURBED AREAS REACH FINAL GRADE, THEY MUST BE STABILIZED. CESSATION OF ACTIVITY FOR AT LEAST 4 DAYS REQUIRES TEMPORARY STABILIZATION.

1. WHITPAIN TOWNSHIP AND THE MONTGOMERY COUNTY SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED 72 HOURS PRIOR TO ANY LAND DISTURBANCE.
2. STAKE AND FLAG TOP OF DRAINAGE CHANNEL NEAR CORNER OF RT 202 AND 73.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCES AS INDICATED ON THIS PLAN.
4. INSTALL SILTSOXX SEDIMENT CONTROL BARRIERS, TREE PROTECTION FENCE AND CHAIN-LINK CONSTRUCTION FENCE AS SHOWN ON THIS PLAN. (NO LAND DISTURBANCE - CLEARING AND GRUBBING SHALL TAKE PLACE OUTSIDE OF THESE BMPS).
5. INSTALL SEDIMENT CONTROL DEVICES OVER EXISTING STORM SEWER STRUCTURES.
6. LOCATE AND DECOMMISSION ALL ON-SITE UTILITIES. REMOVE EXISTING UTILITY SERVICE FEATURES AND CONNECTIONS. UTILITY REMOVAL SHALL BE COORDINATED WITH EACH RESPECTIVE UTILITY SERVICE PROVIDER.
7. BEGIN DEMOLITION OF ABOVE GROUND STRUCTURES AND FOUNDATIONS.
8. BEGIN CONSTRUCTION OF NEW STORM SEWERS SHOWN ON THIS PLAN.
9. DEMOLISH REMAINING EXISTING SITE ELEMENTS AND BELOW GRADE STRUCTURES INCLUDING BUT NOT LIMITED TO BUILDING FOUNDATIONS, UTILITY FOUNDATIONS, SITE LIGHTING STRUCTURES AND FOUNDATIONS, UNDERGROUND VAULTS, WIRING AND PIPING. REMOVE AND DISPOSE ALL DEBRIS OFF SITE.
10. BACKFILL ALL VOIDS CREATED FROM DEMOLITION AND UTILITY REMOVAL WITH STRUCTURAL FILL MATERIAL PLACED AND COMPACTED IN ACCORDANCE WITH TECHNICAL SPECIFICATION. STABILIZE AREAS IN ACCORDANCE WITH TEMPORARY AND PERMANENT STABILIZATION NOTES.
11. AS SOON AS THE CONSTRUCTION OF THE NEW STORM SEWER TO THE LIMITS SHOWN ON THIS PLAN HAS BEEN COMPLETED, CONSTRUCT THE TEMPORARY SEDIMENT CONTROL BASIN. COMPLETE THE CONSTRUCTION OF THE TEMPORARY SEDIMENT CONTROL BASIN INCLUDING DISCHARGE STRUCTURE AND TEMPORARY PIPE CONNECTION TO THE NEW STORM SEWER. SEED BASIN EMBANKMENTS WITH PERMANENT SEEDING REQUIREMENTS AND PLACE JUTE MATT:
    - CLEAR AND GRUB AREA NECESSARY FOR THE CONSTRUCTION OF THE TEMPORARY SEDIMENT BASIN
    - STRIP TOPSOIL FROM TEMPORARY SEDIMENT BASIN CONSTRUCTION AREA
    - BEGIN EARTHMOVING OPERATIONS FOR TEMPORARY SEDIMENT BASIN
    - CONSTRUCT BASIN OUTFALL PIPE AND CONNECT TO STORM SEWER
    - INSTALL TEMPORARY RISER AND SKIMMER IN SEDIMENT CONTROL BASIN
    - PLACE 6 INCHES OF TOPSOIL ON BERM TOP AND EMBANKMENTS AND ESTABLISH PERMANENT VEGETATION
12. REMOVE ASPHALT PAVING, CONCRETE PAVING AND PAVING STONE BASE. DISPOSE OF DEBRIS OFF SITE.
13. INSPECT AND RECONDITION EROSION CONTROL MEASURES IN PREPARATION FOR THE NEXT PHASE OF SITE DEVELOPMENT.

DURING GRADING OPERATIONS NECESSARY MEASURES FOR DUST CONTROL MUST BE IMPLEMENTED

TOTAL AREA OF DISTURBANCE: 20.65 ACRES
TOTAL NPDES BOUNDARY AREA: 23.70 ACRES

EROSION CONTROL LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE (LOD)
- NPDES BOUNDARY
- SILT SOXX
- TREE TO BE REMOVED
- FILTER BAG INLET PROTECTION
- INLET PROTECITON
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- RIPRAP APRON
- 8' CHAIN LINK FENCE
- TREE PROTECTION FENCE
- 170 PROPOSED CONTOURS
- 170 EXISTING CONTOURS
- STORM PIPE
- SOIL LIMIT

WATERSHED:

LOWER SCHUYLKILL WATERSHED DRAINING TO STONY CREEK
TSF - TROUT STOCKING FISHES
MF - MIGRATORY FISHES

SCALE : 1" = 50'

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RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

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SCALE	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-SESC		

SHEET TITLE
EROSION CONTROL DEMOLITION/ INITIAL SITE PREPARATION PLAN

SHEET NUMBER:
15 of 38

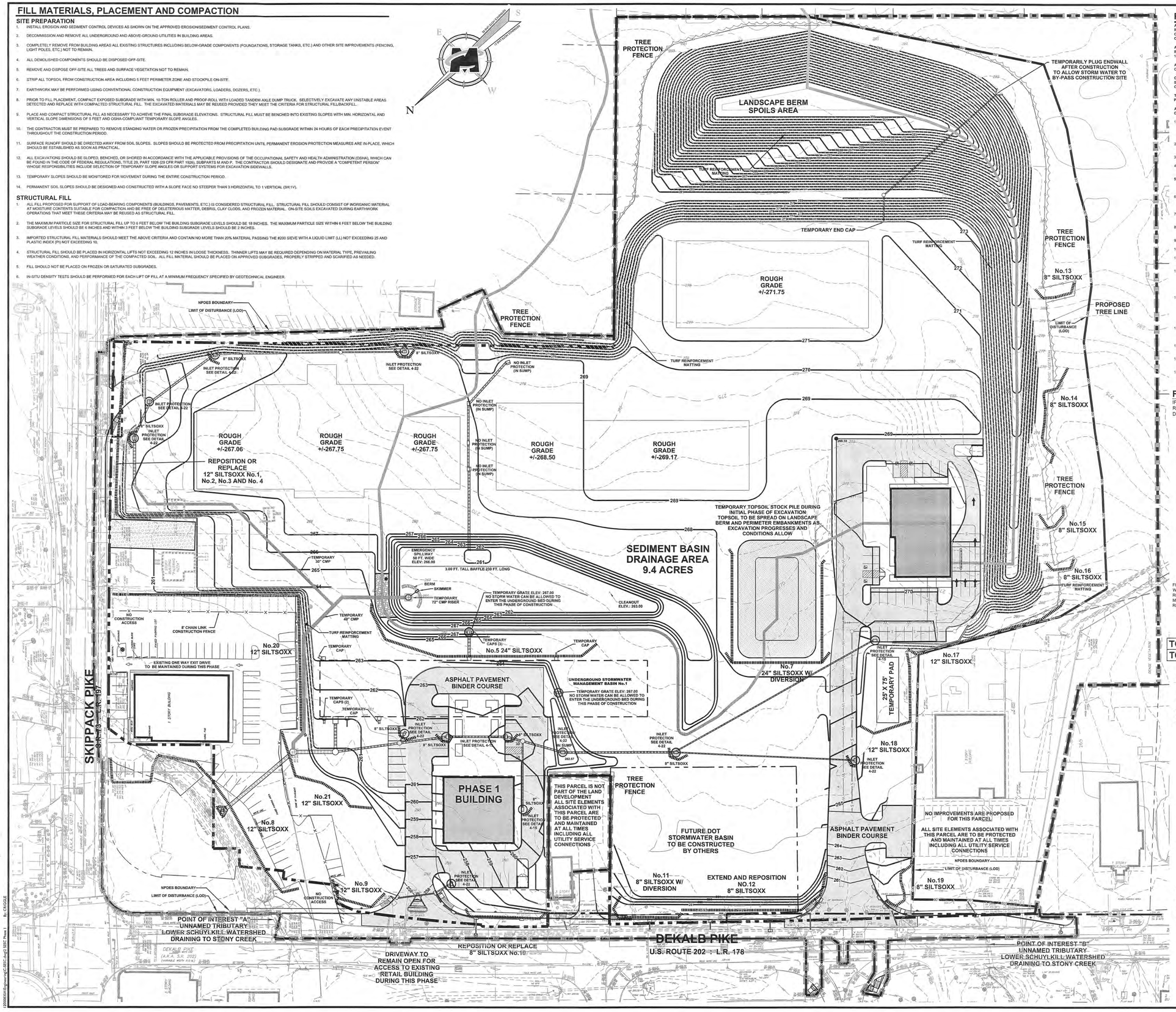
FILL MATERIALS, PLACEMENT AND COMPACTION

SITE PREPARATION

1. INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE APPROVED EROSION/SEDIMENT CONTROL PLANS.
2. DECOMMISSION AND REMOVE ALL UNDERGROUND AND ABOVE-GROUND UTILITIES IN BUILDING AREAS.
3. COMPLETELY REMOVE FROM BUILDING AREAS ALL EXISTING STRUCTURES INCLUDING BELOW-GRADE COMPONENTS (FOUNDATIONS, STORAGE TANKS, ETC.) AND OTHER SITE IMPROVEMENTS (FENCING, LIGHT POLES, ETC.) NOT TO REMAIN.
4. ALL DEMOLISHED COMPONENTS SHOULD BE DISPOSED OFF-SITE.
5. REMOVE AND DISPOSE OFF-SITE ALL TREES AND SURFACE VEGETATION NOT TO REMAIN.
6. STRIP ALL TOPSOIL FROM CONSTRUCTION AREA INCLUDING 5 FEET PERIMETER ZONE AND STOCKPILE ON-SITE.
7. EARTHWORK MAY BE PERFORMED USING CONVENTIONAL CONSTRUCTION EQUIPMENT (EXCAVATORS, LOADERS, DOZERS, ETC.).
8. PRIOR TO FILL PLACEMENT, COMPACT EXPOSED SUBGRADE WITH MIN. 10-TON ROLLER AND PROOF-ROLL WITH LOADED TANDEM AXLE DUMP TRUCK. SELECTIVELY EXCAVATE ANY UNSTABLE AREAS DETECTED AND REPLACE WITH COMPACTED STRUCTURAL FILL. THE EXCAVATED MATERIALS MAY BE REUSED PROVIDED THEY MEET THE CRITERIA FOR STRUCTURAL FILL/BACKFILL.
9. PLACE AND COMPACT STRUCTURAL FILL AS NECESSARY TO ACHIEVE THE FINAL SUBGRADE ELEVATIONS. STRUCTURAL FILL MUST BE BENCHED INTO EXISTING SLOPES WITH MIN. HORIZONTAL AND VERTICAL SLOPE DIMENSIONS OF 5 FEET AND OSHA-COMPLIANT TEMPORARY SLOPE ANGLES.
10. THE CONTRACTOR MUST BE PREPARED TO REMOVE STANDING WATER OR FROZEN PRECIPITATION FROM THE COMPLETED BUILDING PAD SUBGRADE WITHIN 24 HOURS OF EACH PRECIPITATION EVENT THROUGHOUT THE CONSTRUCTION PERIOD.
11. SURFACE RUNOFF SHOULD BE DIRECTED AWAY FROM SOIL SLOPES. SLOPES SHOULD BE PROTECTED FROM PRECIPITATION UNTIL PERMANENT EROSION PROTECTION MEASURES ARE IN-PLACE, WHICH SHOULD BE ESTABLISHED AS SOON AS PRACTICAL.
12. ALL EXCAVATIONS SHOULD BE SLOPED, BENCHED, OR SHORED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), WHICH CAN BE FOUND IN THE CODE OF FEDERAL REGULATIONS, TITLE 29, PART 1926 (29 CFR PART 1926), SUBPARTS M AND P. THE CONTRACTOR SHOULD DESIGNATE AND PROVIDE A "COMPETENT PERSON" WHOSE RESPONSIBILITIES INCLUDE SELECTION OF TEMPORARY SLOPE ANGLES OR SUPPORT SYSTEMS FOR EXCAVATION SIDEWALLS.
13. TEMPORARY SLOPES SHOULD BE MONITORED FOR MOVEMENT DURING THE ENTIRE CONSTRUCTION PERIOD.
14. PERMANENT SOIL SLOPES SHOULD BE DESIGNED AND CONSTRUCTED WITH A SLOPE FACE NO STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3H:1V).

STRUCTURAL FILL

1. ALL FILL PROPOSED FOR SUPPORT OF LOAD-BEARING COMPONENTS (BUILDINGS, PAVEMENTS, ETC.) IS CONSIDERED STRUCTURAL FILL. STRUCTURAL FILL SHOULD CONSIST OF INORGANIC MATERIAL AT MOISTURE CONTENTS SUITABLE FOR COMPACTION AND BE FREE OF DELETERIOUS MATTER, DEBRIS, CLAY CLODS, AND FROZEN MATERIAL. ON-SITE SOILS EXCAVATED DURING EARTHWORK OPERATIONS THAT MEET THESE CRITERIA MAY BE REUSED AS STRUCTURAL FILL.
2. THE MAXIMUM PARTICLE SIZE FOR STRUCTURAL FILL UP TO 6 FEET BELOW THE BUILDING SUBGRADE LEVELS SHOULD BE 18 INCHES. THE MAXIMUM PARTICLE SIZE WITHIN 6 FEET BELOW THE BUILDING SUBGRADE LEVELS SHOULD BE 6 INCHES AND WITHIN 3 FEET BELOW THE BUILDING SUBGRADE LEVELS SHOULD BE 2 INCHES.
3. IMPORTED STRUCTURAL FILL MATERIALS SHOULD MEET THE ABOVE CRITERIA AND CONTAIN NO MORE THAN 20% MATERIAL PASSING THE #200 SIEVE WITH A LIQUID LIMIT (LL) NOT EXCEEDING 25 AND PLASTIC INDEX (PI) NOT EXCEEDING 10.
4. STRUCTURAL FILL SHOULD BE PLACED IN HORIZONTAL LIFTS NOT EXCEEDING 12 INCHES IN LOOSE THICKNESS. THINNER LIFTS MAY BE REQUIRED DEPENDING ON MATERIAL TYPE, PREVAILING WEATHER CONDITIONS, AND PERFORMANCE OF THE COMPACTED SOIL. ALL FILL MATERIAL SHOULD BE PLACED ON APPROVED SUBGRADES, PROPERLY STRIPPED AND SCARIFIED AS NEEDED.
5. FILL SHOULD NOT BE PLACED ON FROZEN OR SATURATED SUBGRADES.
6. IN-SITU DENSITY TESTS SHOULD BE PERFORMED FOR EACH LIFT OF FILL AT A MINIMUM FREQUENCY SPECIFIED BY GEOTECHNICAL ENGINEER.



PHASE 1 SEQUENCE OF ACTIVITIES:

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PREPARER, AND THE MONTGOMERY COUNTY SOIL CONSERVATION DISTRICT TO AN ON-SITE MEETING.

AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED ON THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA UTILITY ONE-CALL SYSTEM AT 1-800-382-1776 TO ORDER A UTILITY MARK-OUT AT THE SITE.

ALL STRUCTURES ASSOCIATED WITH THE CONSTRUCTION OF SEDIMENT REMOVAL FACILITIES MUST BE ON-SITE PRIOR TO EARTH DISTURBANCE.

CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO INSTITUTE ADDITIONAL MEASURES IF ANY EROSION AND SEDIMENTATION CONTROL PROBLEMS ARISE PRIOR TO THE STABILIZATION OF EROSION AND SEDIMENTATION CONTROL MEASURES ON-SITE.

THIS PLAN IS A CONTINUATION OF PROCEDURES INITIATED ON THE DEMOLITION / INITIAL SITE PREPARATION PLAN.

AS SOON AS SLOPE AND OTHER DISTURBED AREAS REACH FINAL GRADE, THEY MUST BE STABILIZED. CESSATION OF ACTIVITY FOR AT LEAST 4 DAYS REQUIRES TEMPORARY STABILIZATION.

1. INSPECT ALL SOIL EROSION / SEDIMENT CONTROL MEASURES CONSTRUCTED AS PART OF THE DEMOLITION AND INITIAL SITE PREPARATION ACTIVITIES INCLUDING BUT NOT LIMITED TO SEDIMENT CONTROL BARRIERS, INLET PROTECTION AND CONSTRUCTION ACCESS. REPAIR OR REPLACE AS NECESSARY.
2. CLEAR AND GRUB AREAS FOR PHASE 1 AND 1A BUILDINGS AND BULK EARTHMOVING OPERATIONS SHOWN ON THIS PLAN.
3. STRIP AND STOCKPILE TOPSOIL FROM EARTHMOVING AREAS
4. BEGIN ROUGH GRADING, FILLING AND COMPACTING PHASE 1 AND 1A BUILDING SITES AS WELL AS BULK EARTHMOVING FOR REMAINDER OF DEVELOPMENT TO LIMITS AS SHOWN ON THIS PLAN
5. **CRITICAL STAGE OF CONSTRUCTION TO BE INSPECTED BY DESIGN ENGINEER:** CONSTRUCT UNDERGROUND BASIN No.1 INCLUDING MANHOLES, PIPE STUBS AND TEMPORARY END CAPS; **NO STORM WATER IS TO BE DIRECTED TO UNDER GROUND BASIN No.1 DURING THIS PHASE OF CONSTRUCTION**
6. CONSTRUCT NEW PERMANENT DRIVEWAYS OFF OF DEKALB PIKE AS SHOWN ON THIS PLAN; INCLUDING CURB, STONE BASE AND PAVING BINDER COURSE. INSTALL STABILIZED CONSTRUCTION ACCESS ON DRIVEWAY ADJACENT TO DAYCARE BUILDING
7. CONSTRUCT PHASE 1 AND 1A BUILDING SITE STORM SEWERS AS ROUGH GRADING OPERATIONS PERMIT.
8. STORM INLETS TO BE TEMPORARILY PROTECTED ACCORDING TO DETAIL 4-22 INCLUDING 8" SILTSOXX IN PLACE OF 6" BERM.
9. ALL STORM INLETS ARE TO HAVE FILTER BAGS INSTALLED AS SOON AS INLET TOPS ARE SET.
10. CONSTRUCT SANITARY SEWERS, WATER SERVICE AND GAS SERVICE FOR PHASE 1AND 1A BUILDINGS.
11. CURBING AROUND THE PHASE 1AND 1A BUILDINGS CAN BE CONSTRUCTED AS ROUGH GRADING PROGRESSES AND CONDITIONS ALLOW.
12. PHASE 1 AND 1A PAVING STONE BASE CAN BE PLACED AS ROUGH GRADING PROGRESSES AND CONDITIONS ALLOW. INSTALL PAVING BINDER COURSE.
    AS SOON AS A CERTIFICATE OF OCCUPANCY IS OBTAINED FOR THE PHASE 1 BUILDING AND THE OCCUPANT HAS RELOCATED TO THE NEW BUILDING THE REMAINDER OF THE SITE ELEMENTS CAN BE DEMOLISHED AND REMOVED.
10. CONTINUE ROUGH GRADING SITE, SPOIL FROM ROUGH GRADING IS TO BE USED TO CONSTRUCT LANDSCAPE BERM ALONG RESIDENTIAL PROPERTIES BORDERING THE SITE AS SHOWN ON THE PLAN. FILL SLOPES OF THE BERM SHALL BE SEEDED AND MULCHED AT REGULAR VERTICAL INCREMENTS - 15 TO 25 FEET MAXIMUM - AS THE BERM IS BEING CONSTRUCTED. EROSION CONTROL MATTING (EAST COAST EROSION CONTROL, ECSC-2), OR APPROVED EQUAL) SHALL BE INSTALLED ON ALL PORTIONS OF BERM THAT THE SLOPE IS 3:1 OR GREATER. SEE PLAN FOR LIMITS.
11. AS DISTURBED AREAS APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN. IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SF REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED.
12. AS SOON AS SUBGRADE ELEVATION HAS BEEN ESTABLISHED WITHIN THE LIMITS OF INDIVIDUAL BUILDINGS, PLACE AND COMPACT CRUSHED STONE BUILDING PAD. ESTABLISH FINISH PAD ELEVATION.
13. CONSTRUCTION OF BUILDINGS CAN BEGIN AS SOON AS BUILDING PADS ARE IN PLACE AND HAVE BEEN APPROVED.
14. INSPECT AND RECONDITION EROSION CONTROL MEASURES IN PREPARATION FOR THE NEXT PHASE OF CONSTRUCTION.

FILL MATERIAL RESPONSIBILITY NOTE:

IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH (*RESPONSIBLE PARTY*).

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENTS POLICY "*MANAGEMENT OF FILL*".

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: *INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS*. **ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE.** IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "*MANAGEMENT OF FILL*".

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PACODE.COM .

DURING GRADING OPERATIONS NECESSARY MEASURES FOR DUST CONTROL MUST BE IMPLEMENTED

TOTAL AREA OF DISTURBANCE: 20.65 ACRES
TOTAL NPDES BOUNDARY AREA: 23.70 ACRES

EROSION CONTROL LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE (LOD)
- NPDES BOUNDARY
- SILT SOXX
- TREE TO BE REMOVED
- FILTER BAG INLET PROTECTION
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- RIPRAP APRON
- CHAIN LINK BOUNDARY FENCE
- TREE PROTECTION FENCE
- 170 PROPOSED CONTOURS
- 170 EXISTING CONTOURS
- STORM PIPE
- EROSION CONTROL BLANKET

WATERSHED:

LOWER SCHUYLKILL WATERSHED DRAINING TO STONY CREEK
TSF - TROUT STOCKING FISHES
MF - MIGRATORY FISHES

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REV	DATE	DRAWN BY	DESCRIPTION
1	09/11/15	CJR	REVISED PER MCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. McFALL II
RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
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Exton, PA 19341
Phone: 610.254.9140
Fax: 610.254.9141
email: solutions@maserconsulting.com

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PROJECT NUMBER:		DRAWING NAME:	
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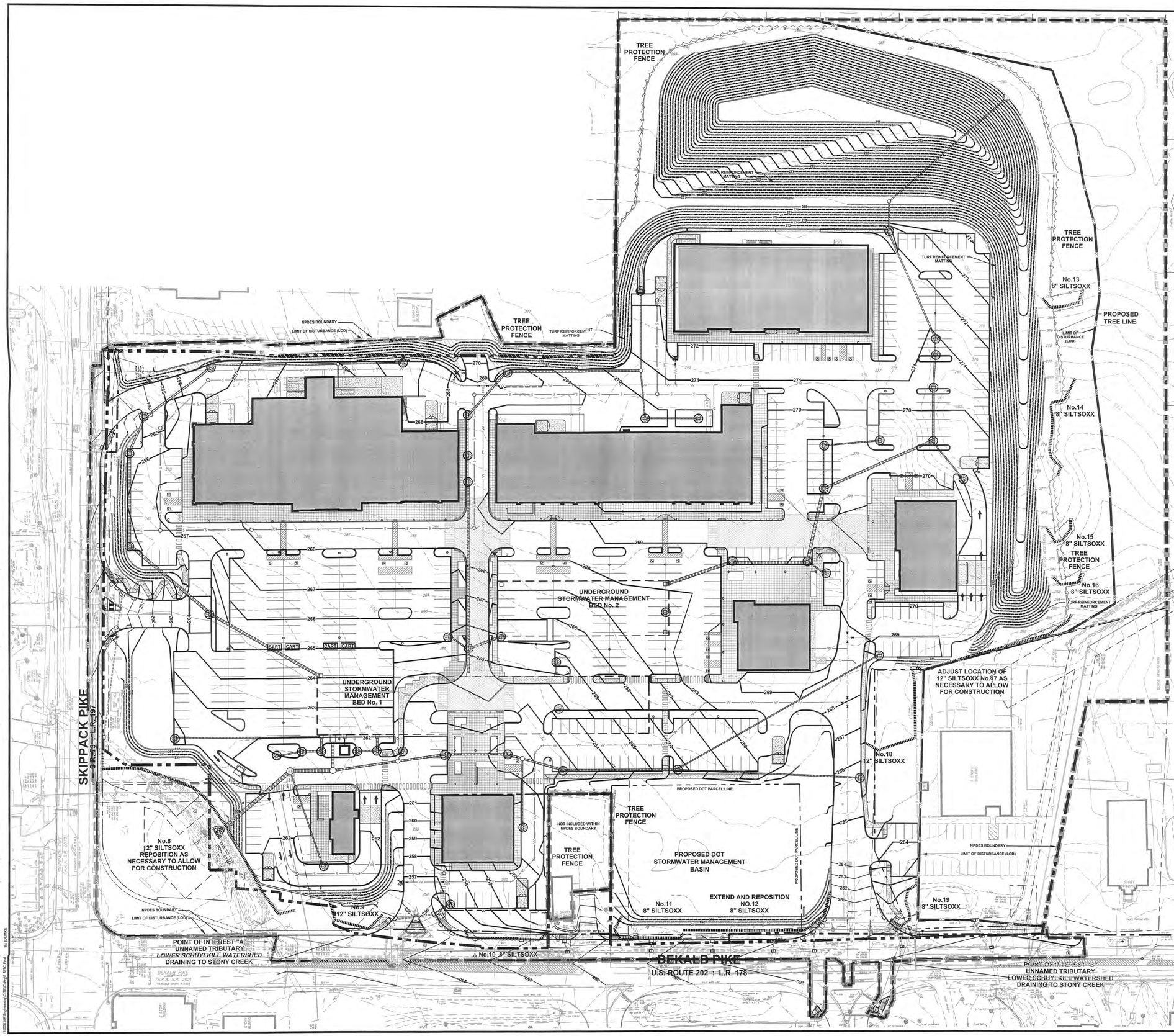
SHEET TITLE:
EROSION CONTROL PHASE I PLAN

SHEET NUMBER:
16 of 38



FINAL SEQUENCE OF ACTIVITIES:

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PREPARER, AND THE MONTGOMERY COUNTY SOIL CONSERVATION DISTRICT TO AN ON-SITE MEETING.

AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED ON THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA UTILITY ONE-CALL SYSTEM AT 1-800-282-1776 TO ORDER A UTILITY MARK-OUT AT THE SITE.

ALL STRUCTURES ASSOCIATED WITH THE CONSTRUCTION OF SEDIMENT REMOVAL FACILITIES MUST BE ON-SITE PRIOR TO EARTH DISTURBANCE.

CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO INSTITUTE ADDITIONAL MEASURES IF ANY EROSION AND SEDIMENTATION CONTROL PROBLEMS ARISE PRIOR TO THE STABILZATION OF EROSION AND SEDIMENTATION CONTROL MEASURES ON-SITE.

THIS PLAN IS A CONTINUATION OF PROCEDURES INITIATED ON THE DEMOLITION, INITIAL SITE PREPARATION AND PHASE 1 PLANS

AS SOON AS SLOPE AND OTHER DISTURBED AREAS REACH FINAL GRADE, THEY MUST BE STABILIZED. CESSATION OF ACTIVITY FOR AT LEAST 4 DAYS REQUIRES TEMPORARY STABILIZATION.

1. INSPECT ALL SOIL EROSION / SEDIMENT CONTROL MEASURES CONSTRUCTED AS PART OF THE DEMOLITION, INITIAL SITE PREPARATION AND PHASE 1 ACTIVITIES INCLUDING BUT NOT LIMITED TO SEDIMENT CONTROL BARRIERS, INLET PROTECTION AND CONSTRUCTION ACCESS. REPAIR OR REPLACE AS NECESSARY.
2. CONTINUE ROUGH GRADING, FILLING AND COMPACTING SITE.
3. CONSTRUCT STORM SEWERS TO UNDERGROUND BED No.1 AS ROUGH GRADING OPERATIONS PERMIT ALL STORM INLETS CONSTRUCTED DURING ROUGH GRADING OPERATIONS ARE TO HAVE TEMPORARY GRATE ELEVATIONS SET 8 INCHES BELOW THE PERMANENT GRATE ELEVATION TO FACILITATE RUNOFF ENTERING THE INLET DURING ROUGH GRADING. ALL INLET BOXES TO HAVE CRUSHED STONE SEDIMENT PROTECTION INSTALLED AS SOON AS INLET TOPS ARE SET
4. **CRITICAL STAGE OF CONSTRUCTION TO BE INSPECTED BY DESIGN ENGINEER:** REMOVE SEDIMENT BASIN AND CONSTRUCT STORMWATER MANAGEMENT UNDERGROUND BED No.2 AND CONNECT TO STORM SEWER SYSTEM THAT DRAINS TO UNDERGROUND BED No 1.
5. CONSTRUCT STORM SEWERS TO UNDERGROUND BED No.2. ALL STORM INLETS CONSTRUCTED DURING ROUGH GRADING OPERATIONS ARE TO BE SET ON BRICKS TO ALLOW RUNOFF TO ENTER AS WELL AS HAVE INLET PROTECTION ACCORDING TO DETAIL 4-22 INCLUDING 8" SILTSOXX IN PLACE OF 6" BERM.
6. CONSTRUCTION OF SANITARY SEWERS, WATER MAINS AND GAS SERVICE CAN BE CONSTRUCTED AS ROUGH GRADING OPERATIONS PERMIT.
7. **CRITICAL STAGE OF CONSTRUCTION TO BE INSPECTED BY DESIGN ENGINEER:** CONSTRUCT IRRIGATION SYSTEM THAT IS CONNECTED TO UNDERGROUND BED No. 1.
8. CURBING CAN BE CONSTRUCTED AS ROUGH GRADING PROGRESSES AND CONDITIONS ALLOW.
9. PAVING STONE BASE CAN BE PLACED AS ROUGH GRADING PROGRESSES AND CONDITIONS ALLOW.
10. CONSTRUCT BUILDING UTILITY SERVICE CONNECTIONS TO WITHIN 5 FEET OF THE BUILDING LIMITS.
11. FINISH CONSTRUCTION OF ALL REMAINING STORM SEWERS.
12. CONSTRUCT DRIVEWAY CONNECTIONS TO SKIPPACK PIKE COMPLETE WITH CURBING, TRENCH DRAINS, PAVING STONE BASE AND BINDER COURSE.
13. FINISH CONSTRUCTION OF ALL ON SITE UNDERGROUND UTILITIES AND BUILDING SERVICE CONNECTIONS. CONSTRUCT FOUNDATIONS FOR AREA LIGHT STANDARDS AND RUN ELECTRIC SERVICE TO FOUNDATIONS AND ALL LOCATIONS FOR ILLUMINATED SIGNS.
14. FINISH CONSTRUCTION OF ALL CURBING AROUND PERIMETER OF NEW PARKING AND DRIVEWAY AREAS. CONSTRUCT CURBING AROUND BUILDING. CONSTRUCT CURBING AROUND LANDSCAPE ISLANDS.
15. FINISH PLACEMENT OF PAVING STONE BASE COURSE ON AREAS TO BE PAVED AND COMPACTED.
16. ALL INLETS SET DURING INITIAL SITE PREPARATION AND ROUGH GRADING OPERATIONS WITH TEMPORARY GRATE ELEVATIONS ARE TO BE RAISE TO PERMANENT GRATE ELEVATIONS AS SOON AS PAVING STONE BASE HAS BEEN PLACED AROUND THE INLET. REPLACE CRUSHED STONE INLET PROTECTION WITH FILTER BAG INLET PROTECTION.
17. CONSTRUCT ALL CONCRETE PADS AND CONCRETE PAVEMENT.
18. INSTALL ASPHALT PAVING BINDER COURSE.
19. INSTALL ALL SIGNAGE ON THE SITE INCLUDING TRAFFIC CONTROL AND DIRECTIONAL SIGNS.
20. **CRITICAL STAGE OF CONSTRUCTION TO BE INSPECTED BY DESIGN ENGINEER:** AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL
21. SPREAD TOPSOIL IN ALL AREAS TO BE LANDSCAPED OR SEEDED AND ESTABLISH PERMANENT GROUND COVER AND LANDSCAPING AS SPECIFIED BY LANDSCAPING PLAN. MULCH ALL EXPOSED AREAS AS SPECIFIED BY THESE PLANS.
22. INSTALL FINAL PAVING WEARING SURFACE. APPLY PARKING AREA AND TRAFFIC CONTROL PAVEMENT PAINT.
23. UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITY UNDER 25 PA CODE 102.22(x)(2) (RELATING TO PERMANENT STABILIZATION) AND INSTALLATION OF BMPS IN ACCORDANCE WITH THE APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH 25 PA CODE 102.4 AND 102.8, THE PERMITTEE AND/OR CO-PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION (NOT) TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. ONCE THE NOT HAS BEEN APPROVED, THE FOLLOWING MAY TAKE PLACE.
24. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENT CONTROLS. ESTABLISH PERMANENT VEGETATION ON ALL AREA DISTURBED BY THE REMOVAL OF THE TEMPORARY CONTROLS. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

NPDES E&S NOTES:

EVIDENCE THAT INDICATES THAT E&S PLAN MINIMIZES EXTENT AND & DURATION OF EARTH DISTURBANCE
- **A "LIMIT OF DISTURBANCE" IS SHOWN ON THE PLANS TO MINIMIZE THE EXTENT OF EARTH DISTURBANCE .**
- **THE "CONSTRUCTION SEQUENCING" HAS BEEN DEVELOPED AND SHOWN ON THE PLAN TO MINIMIZE THE DURATION OF EARTH DISTURBANCE.**

EVIDENCE THAT INDICATES E&S PLAN MAXIMIZES PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION
- **THE PROPOSED SITE DESIGN HAS MAINTAINED THE EXISTING ON-SITE DRAINAGE CHANNELS.**
- **A "LIMIT OF DISTURBANCE" IS SHOWN ON THE PLANS THAT MAXIMIZES THE PROTECTION OF EXISTING VEGETATION**

EVIDENCE THAT INDICATES E&S PLAN MINIMIZES SOIL COMPACTION
- **A "LIMIT OF DISTURBANCE" IS SHOWN ON THE PLANS TO MINIMIZE THE EXTENT OF EARTH DISTURBANCE AND COMPACTION**
- **"FILL MATERIALS, PLACEMENT AND COMPACTION NOTES" ARE SHOWN ON THE PLANS**

EVIDENCE THAT THE E&S PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER
- **24.5 PERCENT OF THE OVERALL TRACT IS DEDICATED AS OPEN SPACE**
- **AFTER DEVELOPMENT THE SITE WILL CONTAIN 5.13 ACRES OF GREEN AREA**

GEOLOGIC FORMATIONS/SOIL CONDITIONS THAT MAY HAVE THE POTENTIAL TO CAUSE POLLUTION:
THE GEOTECHNICAL ENGINEERING STUDY PERFORMED FOR THIS SITE INDICATES THERE ARE NO NATURALLY OCCURING GEOLOGIC/SOIL CONDITIONS THAT HAVE THE POTENTIAL TO CAUSE POLLUTION

TOTAL AREA OF DISTURBANCE: 20.65 ACRES
TOTAL NPDES BOUNDARY AREA: 23.70 ACRES

EROSION CONTROL LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE (LOD)
- NPDES BOUNDARY
- SILT SOXX
- TREE TO BE REMOVED
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- RIPRAP APRON
- TREE PROTECTION FENCE
- 170 PROPOSED CONTOURS
- 170 EXISTING CONTOURS
- STORM PIPE
- EROSION CONTROL BLANKET

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SCALE : 1" = 50'

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REV	DATE	DRAWN BY	DESCRIPTION
1	09/11/15	CJR	REVISED PER MCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/20/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER
RUSSELL T. McFALL II
RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS FOR MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

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MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
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AS SHOWN	06/10/15	DIB	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-SESC		

SHEET TITLE:
EROSION CONTROL FINAL PLAN

SHEET NUMBER:
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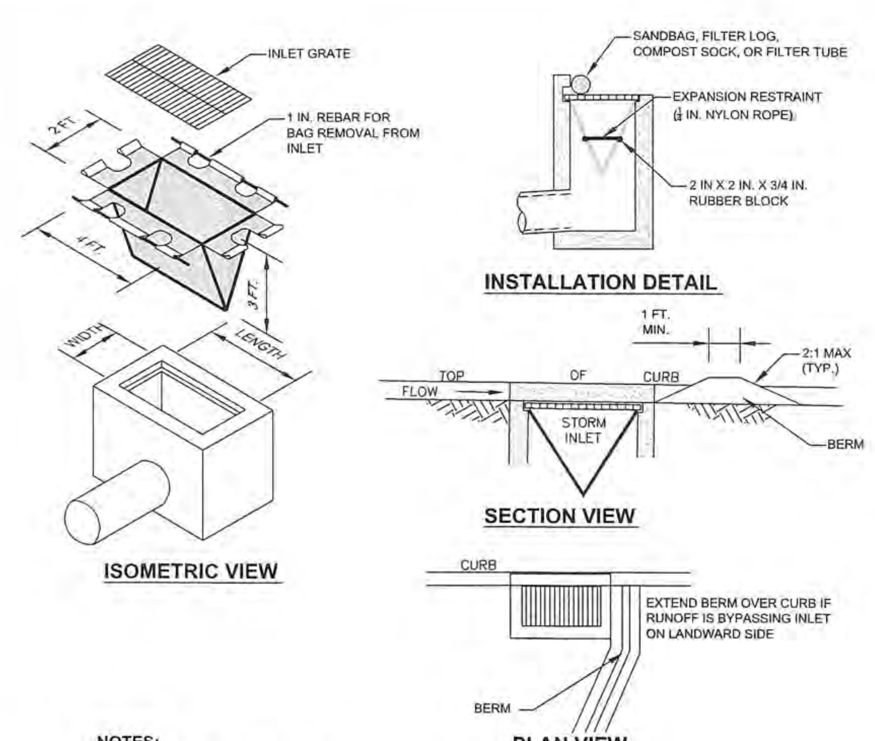


NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

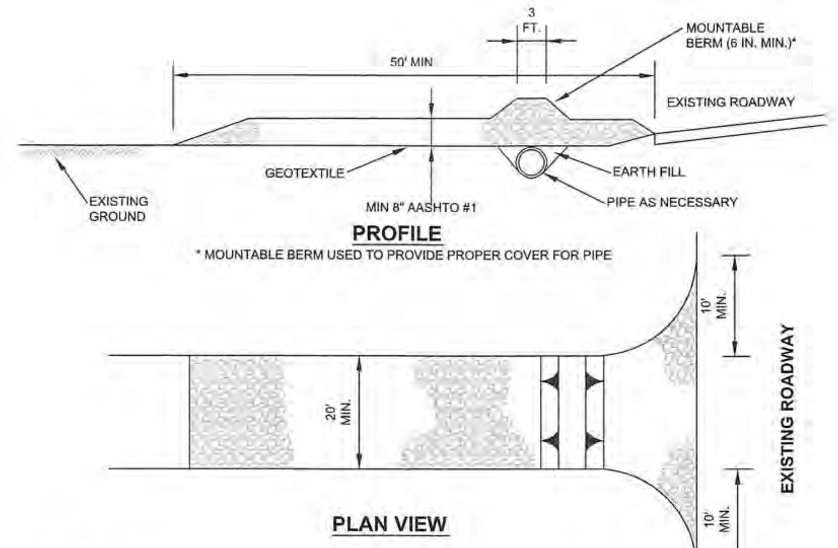
ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET

NOT TO SCALE



NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

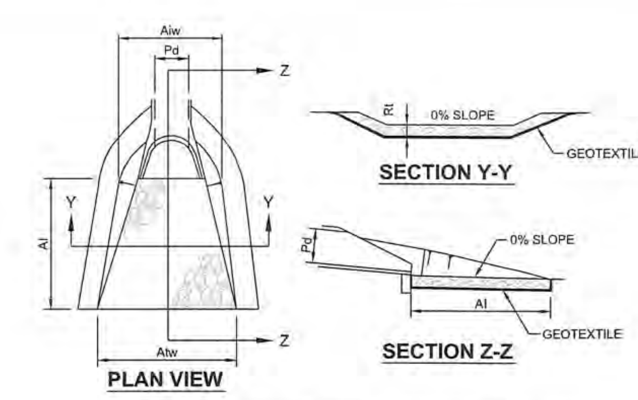
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-__	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
2	48	7	18	10	12	15

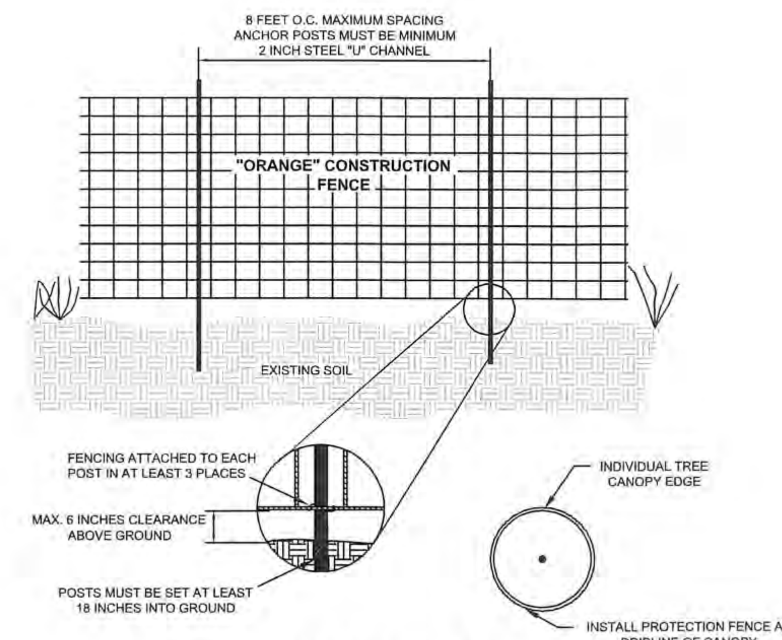
NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET
WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE

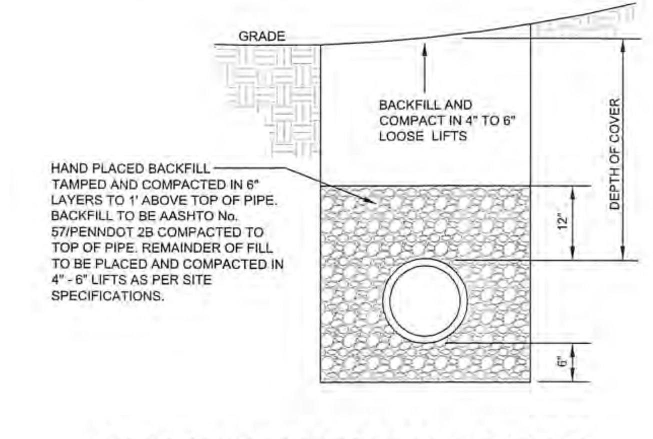


TREE PROTECTION FENCE

NOT TO SCALE

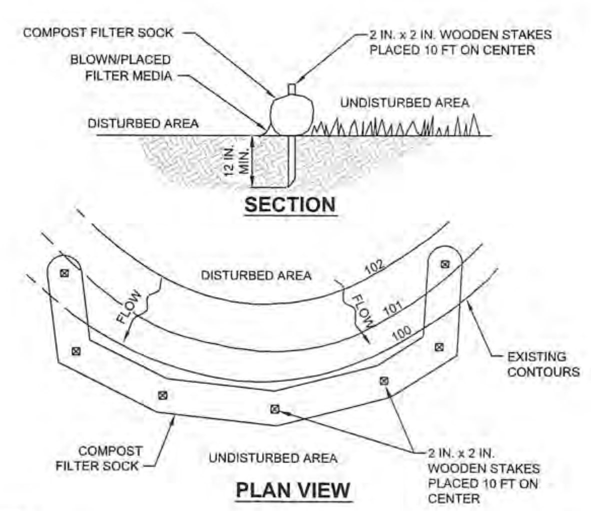
UTILITY INSTALLATION AND TRENCH EXCAVATION GUIDELINES

1. CONSTRUCTION REQUIREMENTS
   A. LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
   B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
   C. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
   D. WATER THAT ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING, AS REQUIRED, TO A FACILITY FOR REMOVAL OF SEDIMENT IN ACCORDANCE WITH "PADEP" GUIDELINES.
   E. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO BE FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF ALL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.
2. BACKFILLING: AFTER THE PIPE AND ITS APPURTENANCES HAVE BEEN SATISFACTORILY INSTALLED AND COVERED, THE TRENCH SHALL BE BACKFILLED IN SIX (6) INCH LAYERS AND IN SUCH A MANNER AS NOT TO DISTURB THE PIPE. HOWEVER, 8-INCH LAYERS WILL BE PERMITTED WHEN USING VIBRATORY COMPACTION EQUIPMENT PROVIDED BACKFILL MATERIAL IS SUITABLE FOR COMPACTION TESTING. EACH LAYER OF BACKFILL SHALL BE THOROUGHLY COMPACTED WITH MECHANICAL TAMPERS OR BY OTHER ACCEPTABLE METHODS, FOR THE FULL TRENCH WIDTH. THE BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE DETERMINED DRY WEIGHT DENSITY OF THE BACKFILL MATERIAL.
3. EXCEPTIONS: IN CERTAIN CASES TRENCHES CAN NOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED. IN THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 1. (CONSTRUCTION REQUIREMENTS) WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
   A. DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
   B. IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES OR FACILITIES WILL BE INSTALLED, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.
   C. SIDES OF TRENCHES SHALL BE KEPT AS NEARLY VERTICAL AS POSSIBLE, AND THE TRENCHES SHALL BE EXCAVATED TRUE TO THE LINE SO THAT A CLEAR SPACE EIGHT (8") INCHES IN WIDTH IS PROVIDED ON EACH SIDE OF THE BARREL OF THE PIPE TO A HEIGHT OF LESS THAN ONE (1) FOOT ABOVE THE TOP OF THE PIPE. IF SHEETING IS REQUIRED AT THE LEVEL OF THE PIPE, THE DIMENSIONS IN THE FOREGOING SENTENCE SHALL BE APPLICABLE TO THE INSIDE FACES OF THE SHEETING.
   D. THE MUNICIPALITY SHALL HAVE THE RIGHT TO LIMIT THE AMOUNT OF TRENCH OPENED IN ADVANCE OF PIPE LAYING AND THE AMOUNT OF PIPE LAID IN ADVANCE OF BACKFILLING, BUT IN NO CASE SHALL MORE THAN FOUR HUNDRED (400) FEET OF TRENCH BE OPENED AT ANY ONE PLACE IN ADVANCE OF THE COMPLETED PIPE. THE TRENCH SHALL NOT BE OPENED FOR A DISTANCE OF MORE THAN FIVE HUNDRED (500) FEET AT ANY ONE TIME.
   E. NO TRENCH WITHIN A PUBLIC STREET SHALL BE LEFT UNCOVERED AT THE CLOSE OF THE WORK DAY. NO OTHER TRENCH SHALL BE LEFT UNCOVERED FOR MORE THAN FIVE CONSECUTIVE WORKING DAYS. STEEL PLATES OF ADEQUATE STRENGTH MAY BE USED TO COVER OPENINGS WITH THE PRIOR APPROVAL OF THE MUNICIPAL ENGINEER.
   F. PRIOR TO PERFORMING ANY BLASTING, THE CONTRACTOR MUST OBTAIN ALL NECESSARY LICENSES AND PERMITS. PROTECTIVE MEASURES MUST BE USED TO INSURE SAFETY TO ADJACENT PROPERTY.
   G. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INJURY TO PERSONS OR PROPERTY THAT MAY RESULT FROM THE USE OF EXPLOSIVES. ALL BLASTING SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED BLASTER, AND SHALL BE SUBJECT TO STATE, COUNTY AND LOCAL REGULATIONS.
   H. WHEN PIPE IS TO BE INSTALLED IN FILL, THE EMBANKMENT SHALL BE CONSTRUCTED TO AT LEAST ONE (1) FOOT ABOVE THE PROPOSED TOP OF THE PIPE. THE EMBANKMENT SHALL THEN BE EXCAVATED TO THE PROPER FORM AND GRADE, AND THE PIPE INSTALLED. THE EMBANKMENT SHALL THEN BE CONSTRUCTED TO NOT LESS THAN THREE AND ONE HALF (3 ½) FEET ABOVE THE TOP OF THE PIPE.



UTILITY TRENCH DETAIL

N.T.S.



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

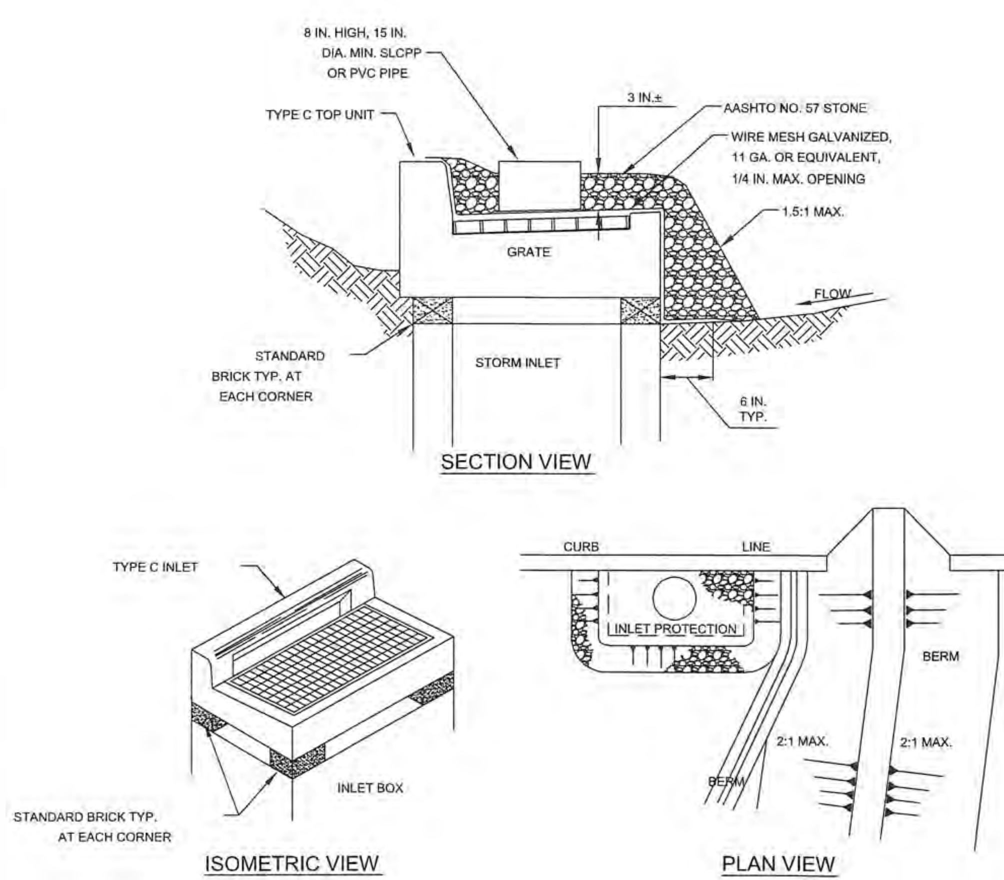
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE



NOTES:

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASINS OR SEDIMENT TRAPS. ALTERNATE TYPE C INLET PROTECTION CAN BE USED ON ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN. OVERFLOW PIPE AND 4 IN. HEAD.

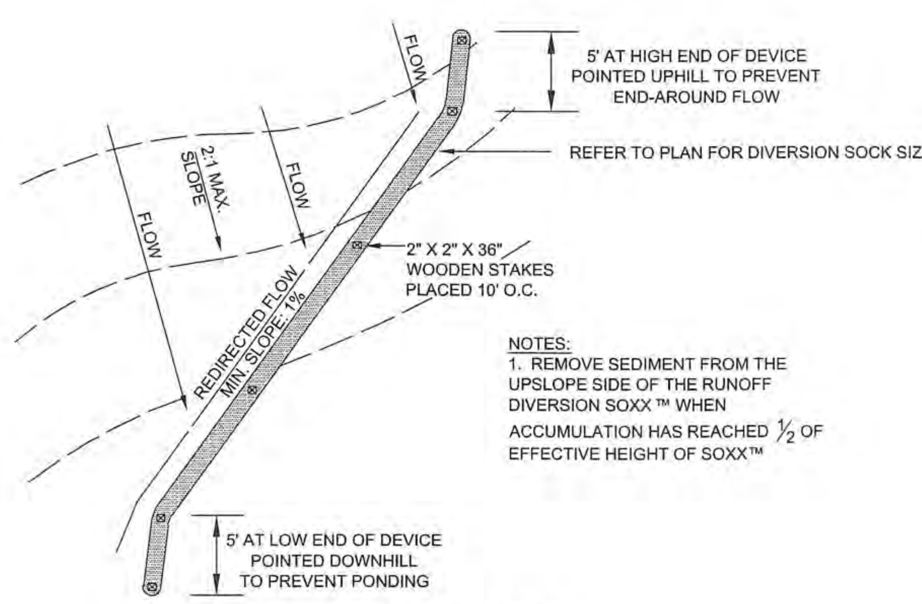
BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT LOW POINTS. EARTHEN BERMS SHALL BE STABILIZED WITH VEGETATION AND MAINTAINED UNTIL ROADWAY IS STONED OR TRIBUTARY AREA IS PERMANENTLY VEGETATED. ROAD SUBBASE BERMS SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED.

INLETS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

STANDARD CONSTRUCTION DETAIL #4-22
ALTERNATE TYPE C INLET PROTECTION - NOT AT GRADE

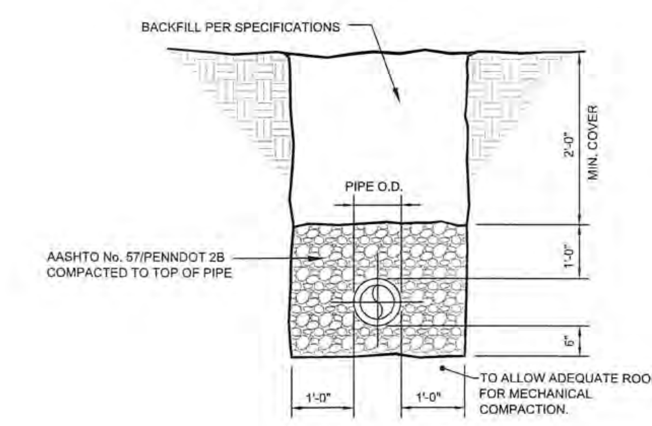
NOT TO SCALE



NOTES:
1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE RUNOFF DIVERSION SOXX ™ WHEN ACCUMULATION HAS REACHED ½ OF EFFECTIVE HEIGHT OF SOXX™

DIVERSION
COMPOST FILTER SOCK

NOT TO SCALE



TRENCH DETAIL FOR PVC PIPE

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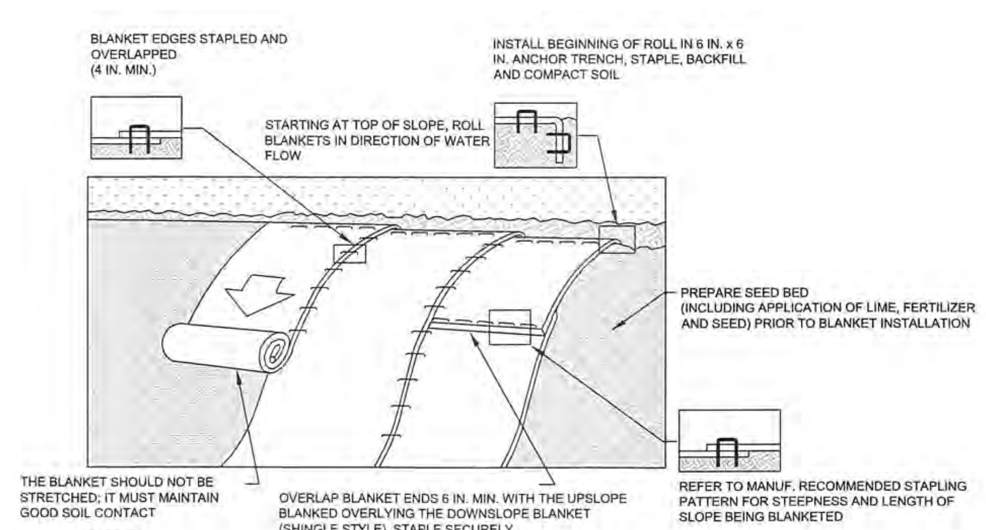


NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

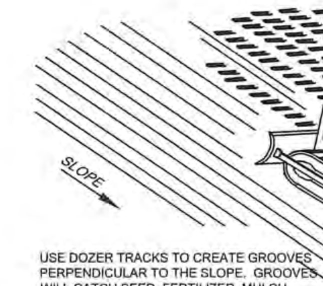
BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

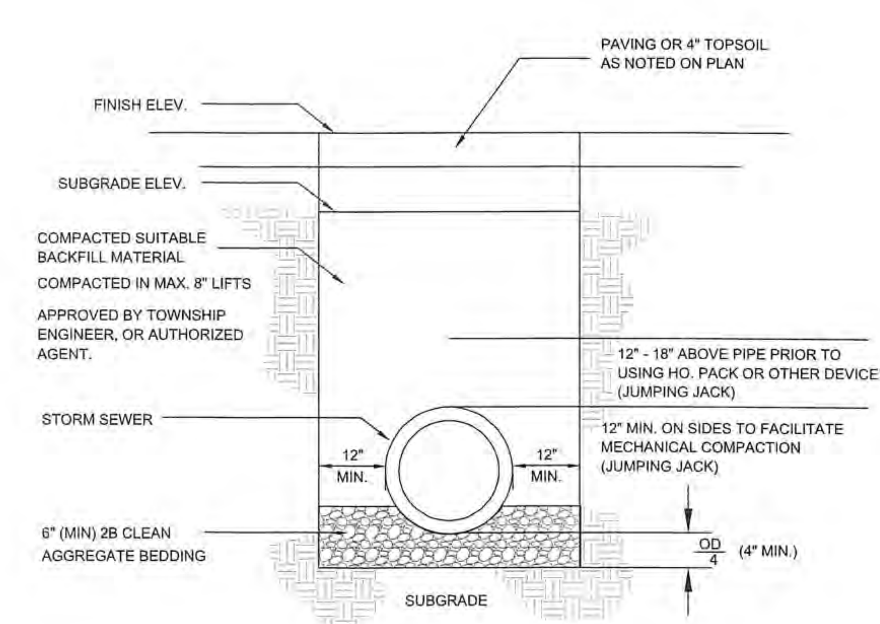
NOT TO SCALE



USE DOZER TRACKS TO CREATE GROOVES PERPENDICULAR TO THE SLOPE. GROOVES WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE RUNOFF.

TRACKING DETAIL

NOT TO SCALE



TRENCH DETAIL FOR STORM SEWER

N.T.S.

12000830A\Engineering\C-DTLS.dwg\C-18-E&S-DETAILS By: CRIGGLE

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REV	DATE	DRAWN BY	DESCRIPTION
1	09/11/15	CJR	REVISED PER MCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

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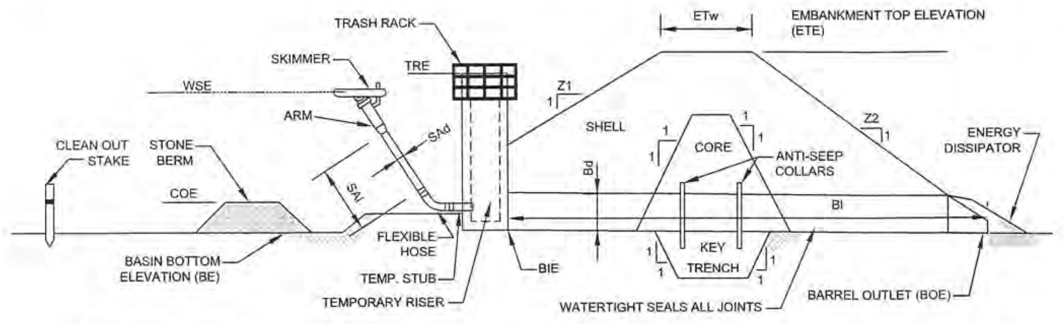
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-DTLS		

SHEET TITLE:
EROSION CONTROL - NOTES AND DETAILS



BASIN NO.	Z1 (FT)	Z2 (FT)	TEMP RISER ELEV TRE (FT)	EMBANKMENT TOP ELEV ETE (FT)	EMBANKMENT TOP WIDTH ETw (FT)	EMBANKMENT KEY TRENCH DEPTH (FT)	EMBANKMENT KEY TRENCH WIDTH (FT)	CLEAN OUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
1	3	3	264.75	267.00	10	2	8	263.00	262.00

SKIMMER DIA SAd (IN)	SKIMMER LENGTH SAl (FT)	SKIMMER MAT'L	OUTLET BARREL DIA Bd (IN)	OUTLET BARREL INLET ELEV BIE (FT)	OUTLET BARREL MAT'L	OUTLET BARREL LENGTH Bl (FT)	OUTLET BARREL OUTLET ELEV BOE (FT)
4	8	PVC	48	259.00	HDPE	270	253.48

Calculate Skimmer Size			
Basin Volume in Cubic Feet	54,893 Cu.Ft	Skimmer Size	4.0 Inch
Days to Drain*	4 Days	Orifice Radius	1.7 Inch[es]
		Orifice Diameter	3.3 Inch[es]

MINIMUM ARM LENGTH OF SKIMMER:

MIN. ARM LENGTH = MAX STORAGE DEPTH X SQRT(2)

MIN. ARM LENGTH =7.1 FEET

NOTES:

SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. IN ORDER TO FACILITATE MAINTENANCE AND RESTORATION, THE POOL AREA SHALL BE CLEARED OF ALL BRUSH, TREES, AND OBJECTIONABLE MATERIAL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED, MULCHED, BLANKETED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

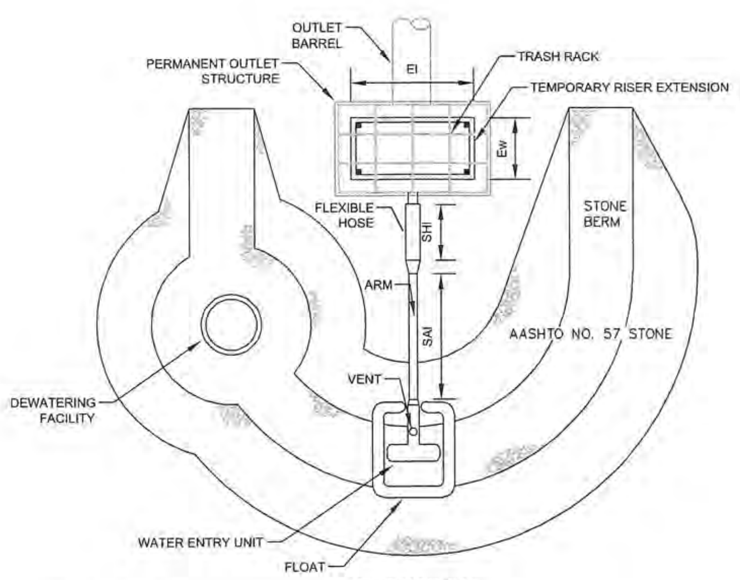
INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PROVIDE ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN. THE STAKE SHALL BE MARKED WITH SURVEY RIBBON RATHER THAN PAINT, WHICH CAN QUICKLY FADE.

BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7-16 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

STANDARD CONSTRUCTION DETAIL #7-4
SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS - SKIMMER

NOT TO SCALE



PLAN VIEW

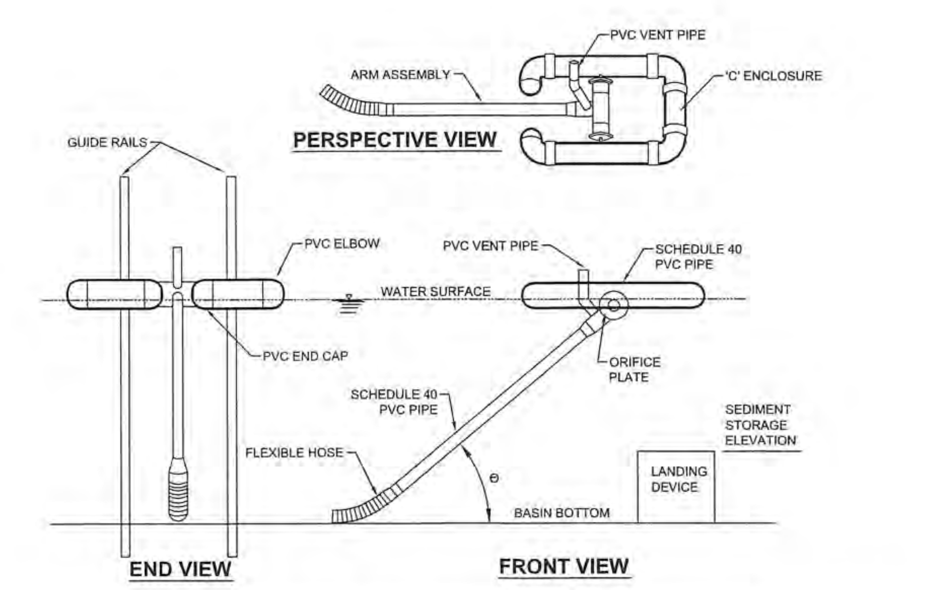
NOTES:

NO GUIDE RAILS SHALL BE REQUIRED FOR THIS INSTALLATION.

THIS DETAIL SHALL BE USED IN CONJUNCTION WITH STANDARD CONSTRUCTION DETAILS #7-2 AND #7-4.

STANDARD CONSTRUCTION DETAIL #7-3
SKIMMER WITH STONE LANDING BERM

NOT TO SCALE



BASIN NO.	WATER SURFACE ELEVATION (FT)	ARM LENGTH (FT)	ARM DIA. (IN)	ORIFICE DIA. (IN)	TOP OF LANDING DEVICE ELEVATION (FT)	FLEXIBLE HOSE LENGTH (IN)	FLEXIBLE HOSE ATTACHMENT ELEVATION (FT)	ORIFICE HEAD (IN)
1	265.33	8	4	3.3	263.00	24	262.00	1.7

NOTES:

ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER

A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED

SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE LANDING DEVICE.

A SEMI-CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS (STANDARD CONSTRUCTION DETAIL # 7-3).

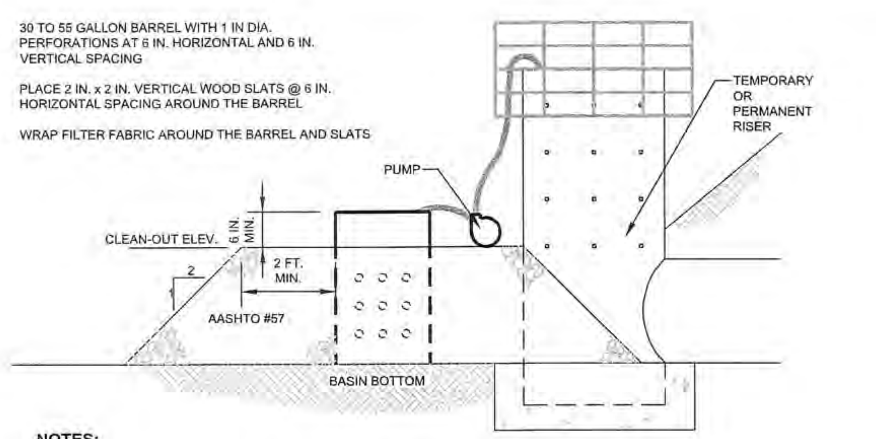
STANDARD CONSTRUCTION DETAIL #7-1 : SKIMMER

NOT TO SCALE

30 TO 55 GALLON BARREL WITH 1 IN DIA. PERFORATIONS AT 6 IN. HORIZONTAL AND 6 IN. VERTICAL SPACING

PLACE 2 IN. x 2 IN. VERTICAL WOOD SLATS @ 6 IN. HORIZONTAL SPACING AROUND THE BARREL

WRAP FILTER FABRIC AROUND THE BARREL AND SLATS



NOTES:

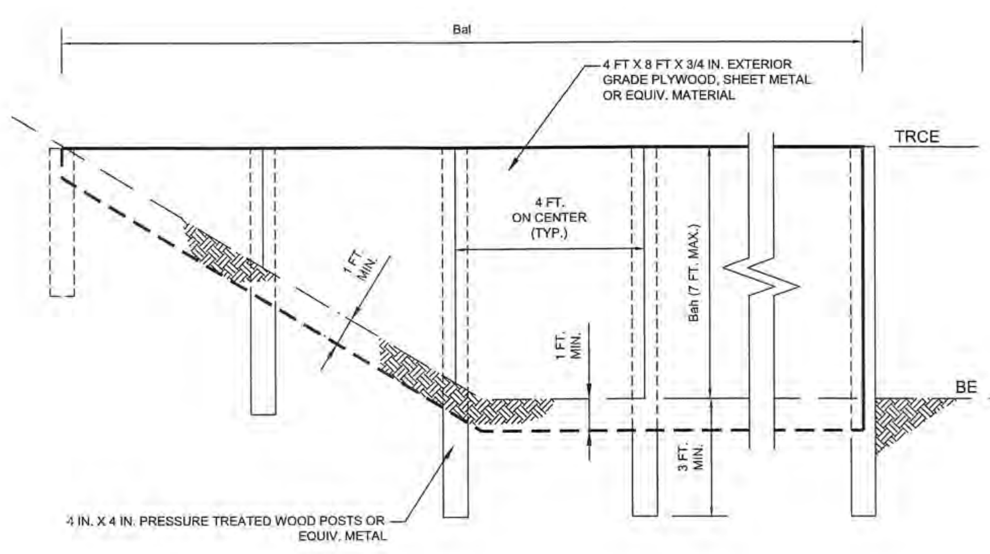
DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP.

PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.

DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

STANDARD CONSTRUCTION DETAIL #7-18
SEDIMENT BASIN OR SEDIMENT TRAP
SEDIMENT STORAGE DEWATERING FACILITY

NOT TO SCALE



BASIN OR TRAP NO.	BAFFLE LENGTH Bal (FT)	BAFFLE HEIGHT Bah (FT)	TEMPORARY RISER CREST ELEV. TRCE (FT)	BOTTOM ELEV BE (FT)
1	230	3.00	264.75	262.00

NOTES:

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

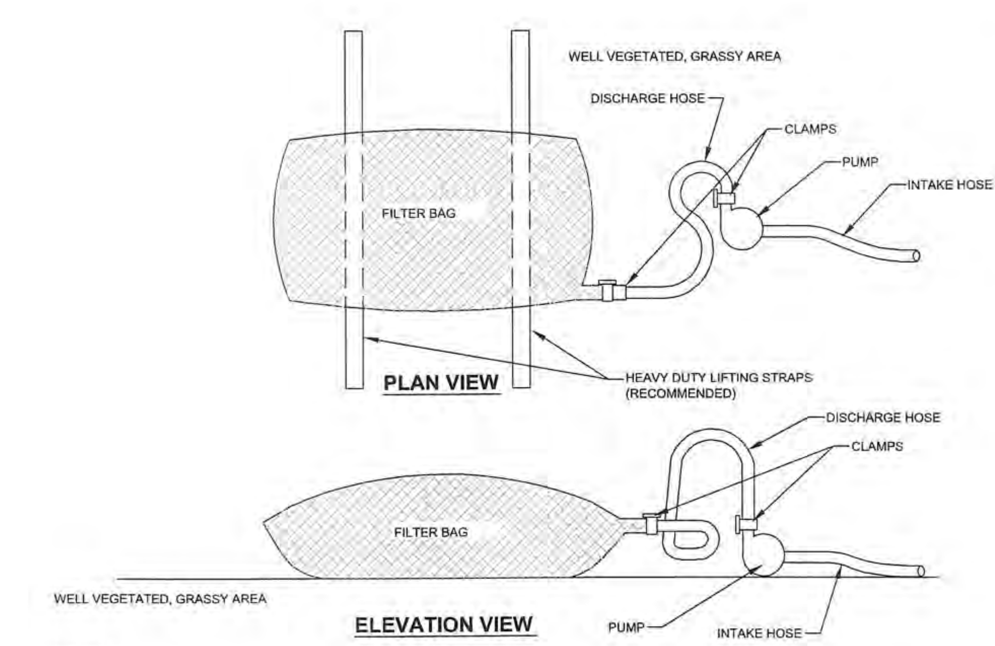
SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL #7-14 : BAFFLE

NOT TO SCALE



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

NOT TO SCALE

SEEDING	% BY WEIGHT	MINIMUM % PURITY	MINIMUM % GERMINATION	MAX % WEED SEED	SEEDING RATE LBS. PER 1,000 SY
PennDOT FORMULA B SEEDING (LAWN) MIX:					
• **PERENNIAL RYEGRASS MIXTURE (LOLIUM PERENNE). A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.**	20	98	90	0.15	4.0
• **CREEPING RED FESCUE OR CHEWINGS FESCUE**	30	98	85	0.15	6.0
• **KENTUCKY BLUEGRASS MIXTURE (POA PRATENSIS) A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT.**	50	98	80	0.20	11.0
					21.0 TOTAL

PERMANENT MEADOW SEED MIX SHALL CONSIST OF THE FOLLOWING MIXTURE OR APPROVED EQUAL - OPTIMUM SEEDING DATES ARE BETWEEN JANUARY 15 AND MAY 1: AUGUST 15 AND OCTOBER 15:

ERNST CONSERVATION SEEDS
MIX # - ERNMX-153 (Showy Northeast Native Wildflower & Grass Mix)

34%	Little Bluestem, 'Camper' (Schizachyrium scoparium, 'Camper')
10%	Sideoats Grama, 'Trailway' (Bouteloua curtipendula, 'Trailway')
10%	Virginia Wildrye, PA Ecotype (Elymus virginicus, PA Ecotype)
9%	Indiangrass, 'Southlow'-MI Ecotype (Sorghastrum nutans, 'Southlow'-MI Ecotype)
4%	Marsh (Dense) Blazing Star (Spiked Gayfeather), PA Ecotype (Liatris spicata, PA Ecotype)
4%	Partridge Pea, PA Ecotype (Chamaecrista fasciculata (Cassia f.), PA Ecotype)
3%	Tall White Beardtongue, PA Ecotype (Penstemon digitalis, PA Ecotype)
3%	Blackeyed Susan, Coastal Plain NC Ecotype (Rudbeckia hirta, Coastal Plain NC Ecotype)
3%	Golden Alexanders (Zizia aurea)
3%	Purple Coneflower (Echinacea purpurea)
3%	Ohio Spiderwort, PA Ecotype (Tradescantia ohiensis, PA Ecotype)
2%	Gray Goldenrod, PA Ecotype (Solidago nemoralis, PA Ecotype)
2%	Wild Senna, VA & WV Ecotype (Senna hebecarpa (Cassia h.), VA & WV Ecotype)
2%	Zigzag Aster, PA Ecotype (Aster prenanthoides (Symphyotrichum p.), PA Ecotype)
2%	Blue 0 Indigo, Southern WV Ecotype (Baptisia australis, Southern WV Ecotype)
1%	Wild Bergamot (Monarda fistulosa)
1%	Oxeye Sunflower, PA Ecotype (Heliopsis helianthoides, PA Ecotype)
1%	Early Goldenrod, PA Ecotype (Solidago juncea, PA Ecotype)
1%	New England Aster, PA Ecotype (Aster novae-angliae (Symphyotrichum n.), PA Ecotype)
1%	Smooth Blue Aster, NY Ecotype (Aster laevis (Symphyotrichum laeve), NY Ecotype)
1%	Maryland Senna (Senna marilandica (Cassia m.))

TEMPORARY AND PERMANENT STABILIZATION

TEMPORARY AND PERMANENT SEEDING:
1. TEMPORARY SEEDING SHALL CONSIST OF ANNUAL RYEGRASS - 40 LBS/ACRE.
2. PERMANENT SEEDING SHALL BE PENNDOT FORMULA B OR APPROVED EQUAL
3. PERMANENT SEEDING TO BE APPLIED BY RAKING OR DRILLING INTO THE SOILS. SLOPED AREA TO BE COVERED WITH MULCH AS SPECIFIED.
4. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL

TEMPORARY AND PERMANENT FERTILIZER RATES:
1. TEMPORARY FERTILIZER TO BE APPLIED AT A RATE OF 50-50-50 (50 LBS OF N, 50 LBS OF P205, AND 50 LBS OF K20) PER ACRES TO LANDS DISTURBED.
2. PERMANENT FERTILIZER TO BE APPLIED AT A RATE OF 100-200-200 (100 LBS OF N, 200 LBS OF P205, AND 200 LBS OF K20) PER ACRES TO LANDS DISTURBED.

TEMPORARY AND PERMANENT LIMING RATES:
1. TEMPORARY AGRICULTURAL GRADE LIMESTONE TO BE APPLIED AT A RATE OF 1.0 TON PER ACRE.
2. PERMANENT AGRICULTURAL GRADE LIMESTONE TO BE APPLIED AT A RATE OF 6.0 TON PER ACRE.

TEMPORARY AND PERMANENT MULCHING RATES:
1. GRASS HAY AND CEREAL STRAW ARE PREFERRED MULCHES AND SHOULD BE APPLIED TO PRODUCE A LOOSE LAYER 0.75 TO 1.0 INCH DEEP. GENERALLY, 3.0 TONS OF MULCH PER ACRE ARE SUFFICIENT. AS A GUIDELINE, A THICKNESS OF FIVE TO SIX OVERLAPPING STRAW OR HAY STEMS IS ACCEPTABLE FOR MULCHING.

GENERAL STABILIZATION NOTES:
1. WORK LIME AND FERTILIZER INTO THE TOP SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE UNTIL A REASONABLE UNIFORM FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
2. REMOVE FROM THE SURFACE ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS, OR OTHER UNSUITABLE MATERIAL. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILED AND FIRMED AS ABOVE.
3. IF SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY OR PERMANENT SEEDING, EXPOSED AREA TO BE STABILIZED WITH MULCH AS SPECIFIED.

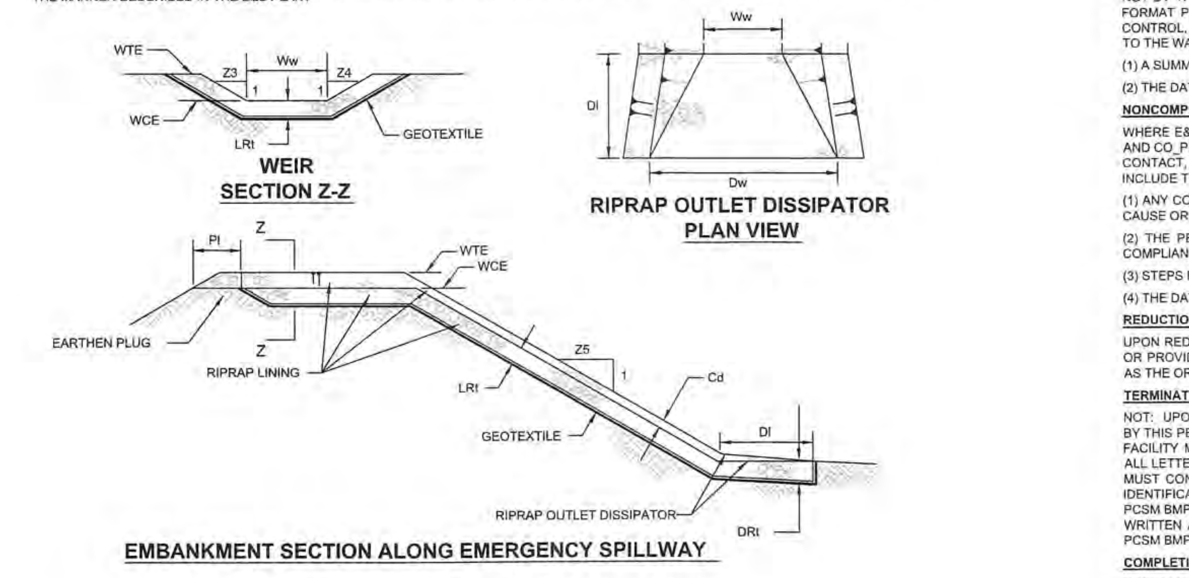
E&S BMP MAINTENANCE:

SILT SOCK SHALL BE MAINTAINED AS FOLLOWS:
1. THE SILT FENCE CONDITION WILL BE INSPECTED ONCE A WEEK OR AFTER EVERY STORM EVENT, WHICHEVER COMES FIRST. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.
2. ACCUMULATED SEDIMENTS WILL BE REMOVED AS REQUIRED TO KEEP THE SEDIMENT CONTROL BARRIER FUNCTIONAL. IN ALL CASES DEPOSITS WILL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE BARRIER.
3. ALL UNDERCUTTING OR EROSION OF THE BARRIER WILL BE REPAIRED IMMEDIATELY WITH COMPACTED BACKFILL MATERIALS.
4. ADHERE TO ANY MANUFACTURER'S RECOMMENDATIONS FOR REPLACING SEDIMENT CONTROL BARRIER DUE TO WEATHERING.

INLET PROTECTION SHALL BE MAINTAINED AS FOLLOWS:
1. THE INLET PROTECTION CONDITION WILL BE INSPECTED ONCE A WEEK OR AFTER EVERY STORM EVENT, WHICHEVER COMES FIRST. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.
2. FILTER BAGS MUST BE CLEANED AND/OR REPLACED WHEN THE BAG IS HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET.
3. ADHERE TO ANY MANUFACTURER'S RECOMMENDATIONS FOR REPLACING SEDIMENT CONTROL BARRIER DUE TO WEATHERING.

CONSTRUCTION ENTRANCE SHALL BE MAINTAINED AS FOLLOWS:
1. THE CONSTRUCTION ENTRANCE WILL BE INSPECTED AT THE END OF EACH WORKDAY.
2. AT THE END OF EACH CONSTRUCTION DAY, ANY SEDIMENT DEPOSITED ON PUBLIC ROADWAYS, WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WITH WATER WILL NOT BE PERMITTED.

SEDIMENT BASIN SHALL BE MAINTAINED AS FOLLOWS:
1. INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PROVIDE ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.



BASIN NO.	WEIR Z3 (FT)	WEIR Z4 (FT)	WEIR TOP ELEV WTE (FT)	WEIR CREST ELEV WCE (FT)	WEIR WIDTH Ww (FT)	LINING RIPRAP SIZE (R-_)	LINING RIPRAP THICK. LRt (IN)	CHANNEL Z5 (FT)	CHANNEL DEPTH Cd (FT)	DISSIPATOR LENGTH Dl (FT)	DISSIPATOR WIDTH Dw (FT)	DISSIPATOR RIPRAP SIZE (R-_)	DISSIPATOR RIPRAP THICK. DRt (IN)
1	3	3	267.00	266.00	50	4	18	N/A	N/A	20	50	4	18

NOTES:

DIMENSION Pl SHALL BE 5' MINIMUM.
DISPLACED RIPRAP WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #7-12
SEDIMENT BASIN EMERGENCY SPILLWAY
WITH RIPRAP LINING

NOT TO SCALE

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. VEHICLES AND EQUIPMENT MAY ONLY ENTER THE SITE FROM THE CONSTRUCTION ENTRACNES DEPICTED ON THIS PLAN.
15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. EROSION AND SEDIMENT CONTROL BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E ROSION AND SEDIMENT BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF EROSION AND SEDIMENT BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

SOURCE: EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL , 363-2134-008, APPENDIX C - STANDARD E&S PLAN NOTES, MARCH 31, 2012

MONITORING, INSPECTION AND REPORTING REQUIREMENTS:

VISUAL INSPECTIONS

THE PERMITTEE AND CO_PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RAINFALL EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOT BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE VISUAL SITE INSPECTIONS AND REPORTS SHALL BE COMPLETED IN A FORMAT PROVIDED BY THE DEPARTMENT, AND CONDUCTED BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT E&S BMPS AND PCSM BMPS ARE PROPERLY CONSTRUCTED AND MAINTAINED TO EFFECTIVELY MINIMIZE POLLUTION TO THE WATERS OF THIS COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE AT A MINIMUM:

(1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND

(2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.

NONCOMPLIANCE REPORTING

WHERE E&S, PCSM OR PPC BMPS ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITTEE AND CO_PERMITTEE(S) SHALL, WITHIN 24 HOURS, CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NONCOMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

(1) ANY CONDITION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH CAUSE OR THREATEN POLLUTION;

(2) THE PERIOD OF NONCOMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE;

(3) STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENCE OF THE NONCOMPLIANCE; AND

(4) THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

REDUCTION, LOSS, OR FAILURE OF THE BMPS

UPON REDUCTION, LOSS, OR FAILURE OF THE BMPS, THE PERMITTEE AND CO_PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPS OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. SUCH RESTORED BMPS OR ALTERNATIVE TREATMENT SHALL BE AT LEAST AS EFFECTIVE AS THE ORIGINAL BMPS.

TERMINATION OF COVERAGE

NOT: UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPS IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND/OR CO_PERMITTEE OF THE FACILITY MUST SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. ALL LETTERS CERTIFYING DISCHARGE TERMINATION ARE TO BE SENT TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE NOT MUST CONTAIN THE FOLLOWING INFORMATION: FACILITY NAME, ADDRESS, AND LOCATION, OPERATOR NAME AND ADDRESS, PERMIT NUMBER, IDENTIFICATION AND PROOF OF ACKNOWLEDGMENT FROM THE PERSON(S) WHO WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, AND THE REASON FOR PERMIT TERMINATION. UNTIL THE PERMITTEE HAS RECEIVED WRITTEN ACKNOWLEDGEMENT OF THE NOT, THE PERMITTEE WILL REMAIN RESPONSIBLE FOR OPERATING AND MAINTAINING ALL E&S BMPS AND PCSM BMPS ON THE PROJECT SITE AND WILL BE RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

COMPLETION CERTIFICATE AND FINAL PLANS

WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS.

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3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL RUSSELL T. McFALL II ENGINEER NO. PE060408
RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

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Phone: 610.254.9140
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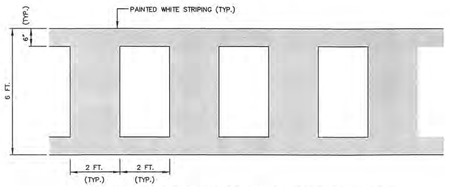
email: solutions@maserconsulting.com

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-DTLS		

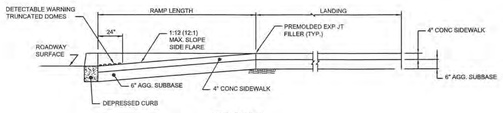
SHEET TITLE:
EROSION CONTROL - NOTES AND DETAILS

12000830A\Engineering\C-DTLS.dwg\C19-E&S-DETAILS (2) By: JDUMKE

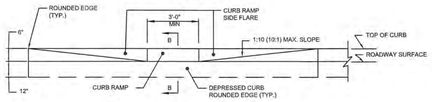


PAINTED CROSS WALK DETAIL

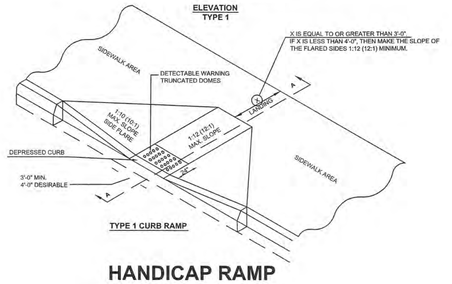
NTS



SECTION A-A
TYPE 1



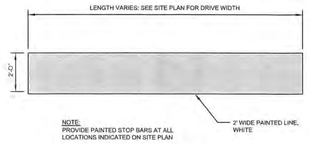
ELEVATION
TYPE 1



TYPE 1 CURB RAMP

HANDICAP RAMP PENNDOT TYPE 1

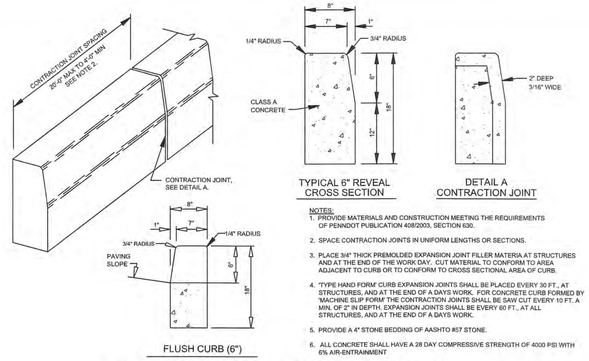
NTS



NOTE:
PROVIDE PAINTED STOP BARS AT ALL LOCATIONS INDICATED ON SITE PLAN

STOP BAR DETAIL

N.T.S.



TYPICAL 6" REVEAL CROSS SECTION

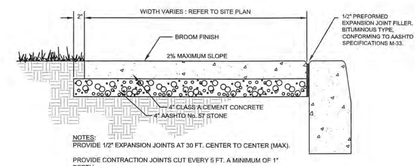
DETAIL A
CONTRACTION JOINT

FLUSH CURB (6")

NOTES:
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PENNDOT PUBLICATION 408/2003, SECTION 630.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 3/4" THICK PREMOLDED EXPANSION JOINT FILLER MATERIA AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.
4. "TYPE HAND FORM' CURB EXPANSION JOINTS SHALL BE PLACED EVERY 30 FT., AT STRUCTURES, AND AT THE END OF A DAYS WORK. FOR CONCRETE CURB FORMED BY 'MACHINE SLIP FORM' THE CONTRACTION JOINTS SHALL BE SAW CUT EVERY 10 FT. A MIN. OF 2" IN DEPTH. EXPANSION JOINTS SHALL BE EVERY 60 FT., AT ALL STRUCTURES, AND AT THE END OF A DAYS WORK.
5. PROVIDE A 4" STONE BEDDING OF AASHTO #57 STONE.
6. ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI WITH 6% AIR-ENTRAINMENT

CAST-IN-PLACE CONCRETE CURB

N.T.S.



NOTES:
PROVIDE 1/2" EXPANSION JOINTS AT 30 FT. CENTER TO CENTER (MAX).

PROVIDE CONTRACTION JOINTS CUT EVERY 5 FT. A MINIMUM OF 1" DEPTH.

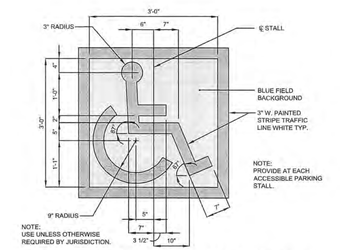
ALL SIDEWALKS SHALL RECEIVE A BROOM FINISH UNLESS APPROVED OTHERWISE BY THE TOWNSHIP.

ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI WITH A 6% AIR-ENTRAINMENT.

ALL CONCRETE WALKWAYS ARE TO BE CONSTRUCTED PER LATEST ADA REQUIREMENTS.

CONCRETE SIDEWALK DETAIL

N.T.S.

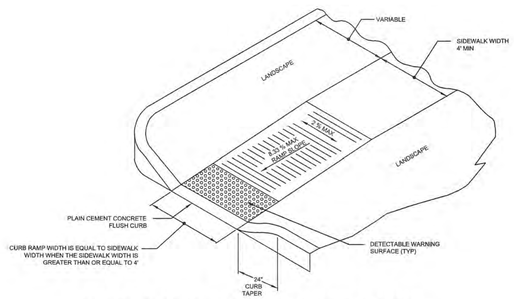


NOTE:
PROVIDE AT EACH ACCESSIBLE PARKING STALL.

NOTE:
USE UNLESS OTHERWISE REQUIRED BY JURISDICTION.

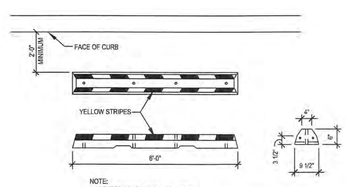
ACCESSIBLE PARKING SYMBOL

N.T.S.



ALTERNATE TYPE 4A CURB RAMP (PARALLEL)

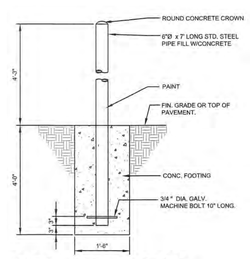
N.T.S.



NOTE:
1. CENTER IN WIDTH OF PARK STALL
2. MATERIAL: COMPRESSION MOLDED COMPOSITE: 100% RECYCLED RUBBER AND POLYURETHANE PREPOLYMER

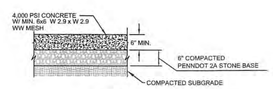
WHEEL STOP

N.T.S.



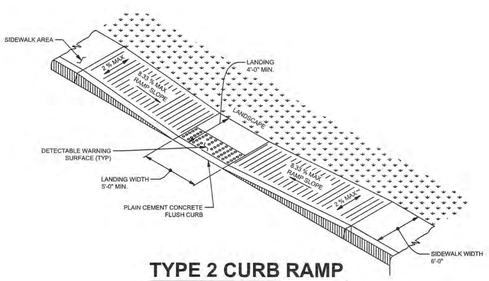
BOLLARD DETAIL
GATE POST DETAIL

N.T.S.



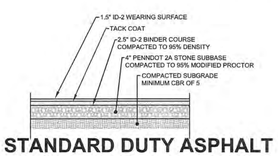
CONCRETE PAVEMENT SECTION

N.T.S.



TYPE 2 CURB RAMP

N.T.S.

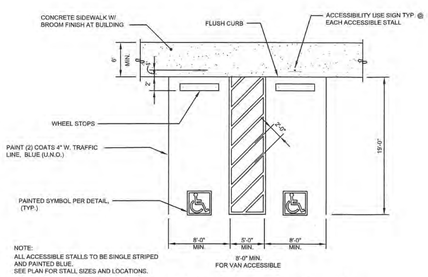


STANDARD DUTY ASPHALT PAVEMENT SECTION

N.T.S.

HEAVY DUTY ASPHALT PAVEMENT SECTION

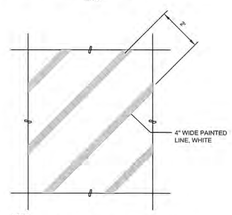
N.T.S.



NOTE:
ALL ACCESSIBLE STALLS TO BE SINGLE STRIPED AND PAINTED BLUE.
SEE PLAN FOR STALL SIZES AND LOCATIONS.

HANDICAP PARKING STALLS

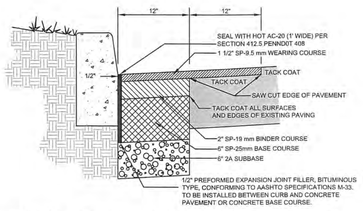
N.T.S.



NOTE:
ALL HANDICAP ACCESSIBLE ROUTES SHALL PAINTED BLUE.
SEE PLAN FOR LOCATIONS.

PAINTED STRIPE DETAIL

N.T.S.



PAVEMENT RESTORATION DETAIL

N.T.S.

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
RUSSELL T. McFALL II
No. PE060408

RUSSELL T. McFALL II
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FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
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email: solutions@maserconsulting.com

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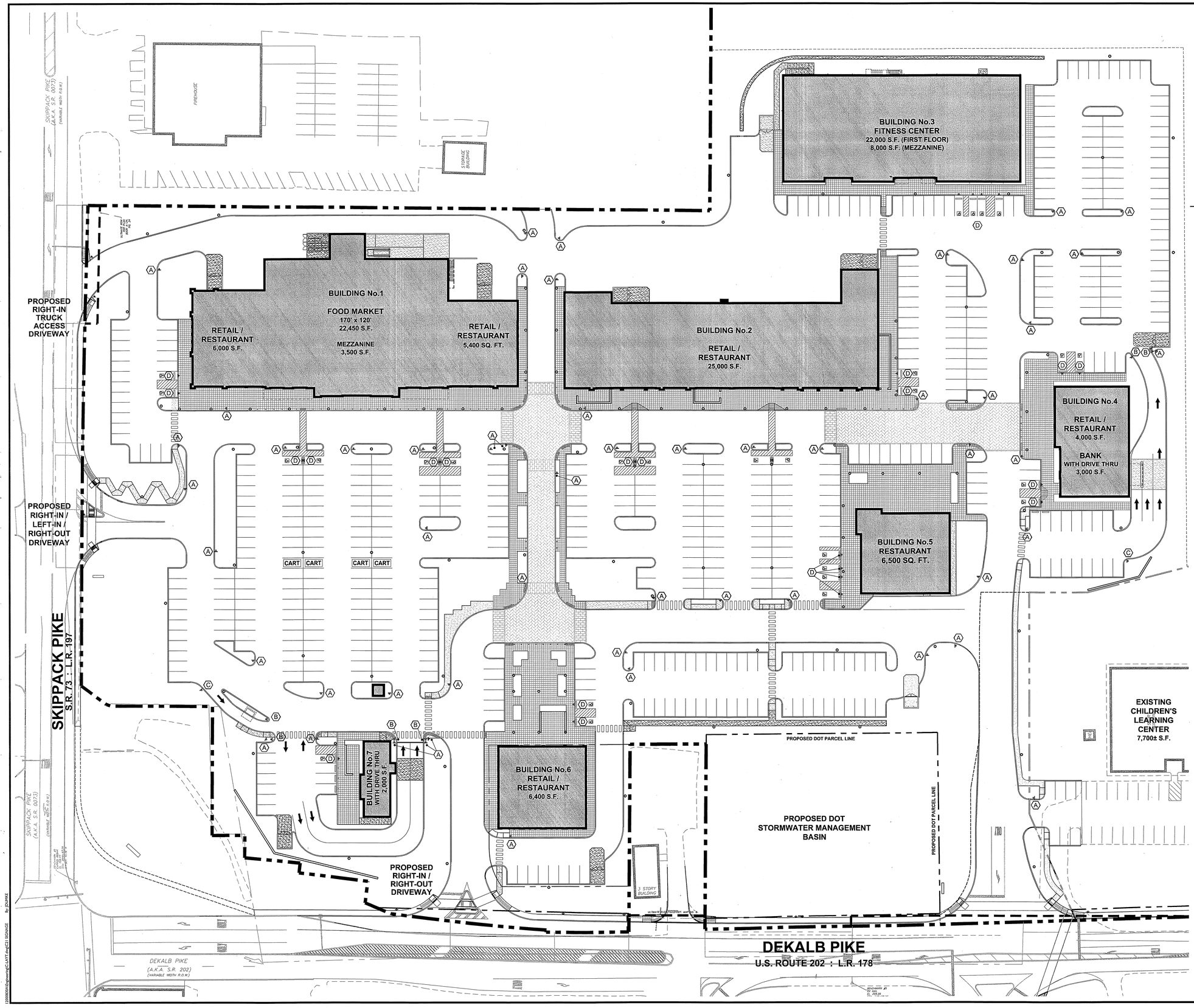
PROJECT NUMBER: 120000830A
DRAWING NAME: C-DTLS

SHEET TITLE:
GENERAL SITE DETAILS

SHEET NUMBER:

120000830A\Engineering\C-DTLS.dwg\C-20-SITE-DETAILS By: JDJ.HAS



R1-1
STOP SIGN
30"x30"

R5-1
DO NOT ENTER
30"x30"

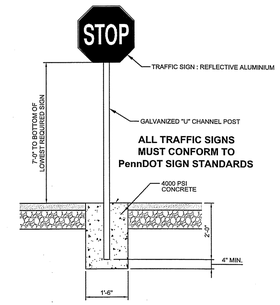
R6-1L
ONE WAY SIGN
24"x12"

R6-1R
ONE WAY SIGN
24"x12"

NOTE: ALL TRAFFIC SIGNAGE SHALL CONFORM TO MUTCD STANDARDS AND PennDOT SIGN STANDARDS

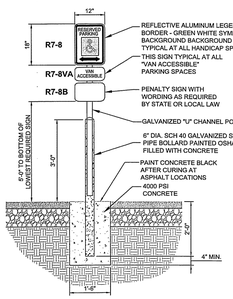
TRAFFIC CONTROL SIGNS

N.T.S.



TRAFFIC SIGN MOUNTING DETAIL

N.T.S.



ONE AT EACH HANDICAP SPACE.
WHERE HANDICAP SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES

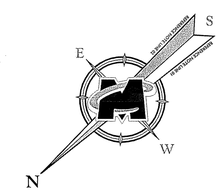
ALL HANDICAP SIGNS MUST CONFORM TO PennDOT SIGN STANDARDS

HANDICAP SIGN DETAIL

N.T.S.

SIGNAGE PLAN LEGEND

- (A) PROPOSED STOP SIGN (R1-1)
- (B) PROPOSED DO NOT ENTER SIGN (R5-1)
- (C) PROPOSED ONE WAY SIGN (R6-1L) OR (R6-1R)
- (D) PROPOSED HANDICAP SIGN (R7-8) OR (R7-8 VA)



40 32 24 16 8 0 20 40 80

SCALE : 1" = 40'

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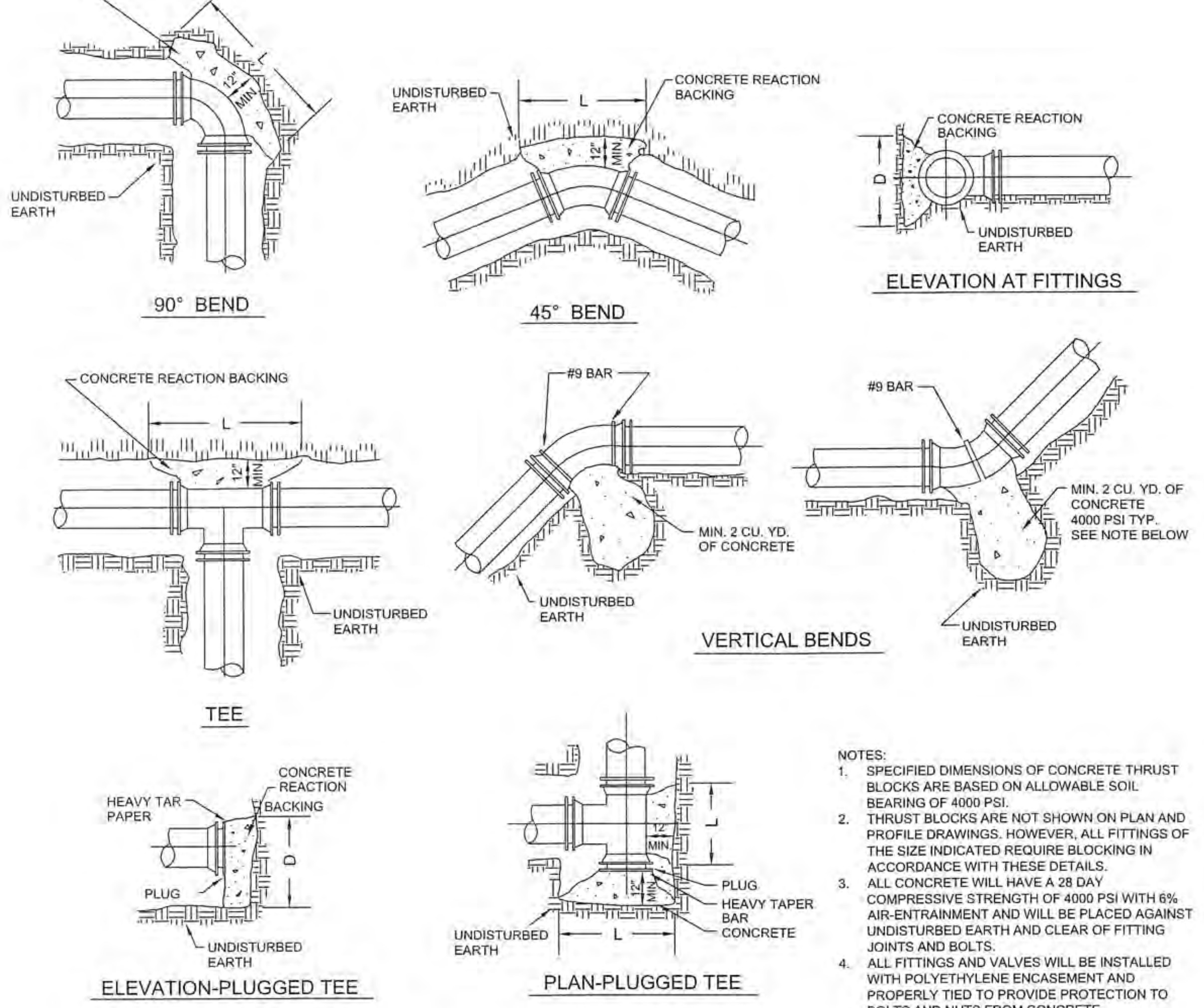
PROJECT NUMBER: 12000830A
DRAWING NAME: C-LAYT

SHEET TITLE: TRAFFIC SIGNAGE

SHEET NUMBER: 21 of 38

12000830A\Engineering\C-LAYT Aug\C21 SIGNAGE by: BURKE



NOTES:
1. SPECIFIED DIMENSIONS OF CONCRETE THRUST BLOCKS ARE BASED ON ALLOWABLE SOIL BEARING OF 4000 PSI.
2. THRUST BLOCKS ARE NOT SHOWN ON PLAN AND PROFILE DRAWINGS. HOWEVER, ALL FITTINGS OF THE SIZE INDICATED REQUIRE BLOCKING IN ACCORDANCE WITH THESE DETAILS.
3. ALL CONCRETE WILL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI WITH 6% AIR-ENTRAINMENT AND WILL BE PLACED AGAINST UNDISTURBED EARTH AND CLEAR OF FITTING JOINTS AND BOLTS.
4. ALL FITTINGS AND VALVES WILL BE INSTALLED WITH POLYETHYLENE ENCASEMENT AND PROPERLY TIED TO PROVIDE PROTECTION TO BOLTS AND NUTS FROM CONCRETE.

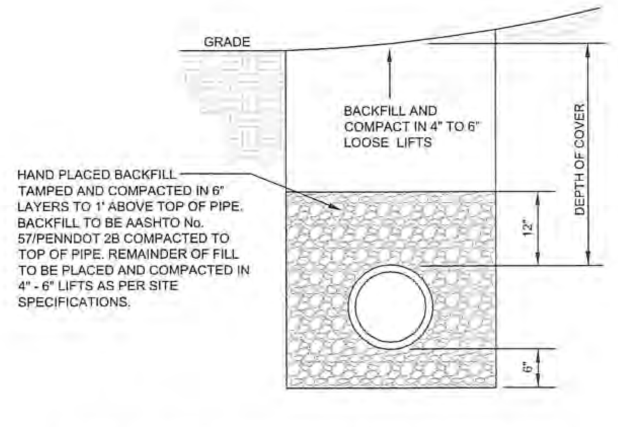
CONCRETE REACTION BACKING SCHEDULE								
PIPE	TEES, CAPS & PLUGS		11-1/4" BEND 22-1/2"BEND		45 BEND		90 BEND	
SIZE	L	D	L	D	L	D	L	D
6"	3'-0"	12"	18"	12"	2'-3"	12"	4'-3"	12"
8"	3'-6"	18"	18"	18"	2'-9"	18"	4'-9"	18"
10"	4'-0"	2'-0"	2'-0"	1'-6"	3'-0"	2'-0"	5'-0"	2'-0"
12"	4'-9"	2'-6"	2'-0"	2'-6"	3'-3"	2'-6"	6'-0"	2'-6"

THRUST BLOCK DETAILS

N.T.S.

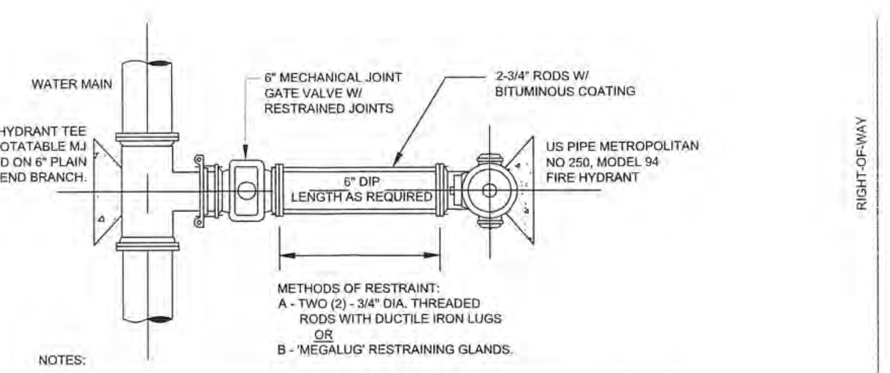
UTILITY INSTALLATION AND TRENCH EXCAVATION GUIDELINES

1. CONSTRUCTION REQUIREMENTS
   A. LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
   B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
   C. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
   D. WATER THAT ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING, AS REQUIRED, TO A FACILITY FOR REMOVAL OF SEDIMENT IN ACCORDANCE WITH "PADEP" GUIDELINES.
   E. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO BE FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF ALL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.
2. BACKFILLING: AFTER THE PIPE AND ITS APPURTENANCES HAVE BEEN SATISFACTORILY INSTALLED AND COVERED, THE TRENCH SHALL BE BACKFILLED IN SIX (6) INCH LAYERS AND IN SUCH A MANNER AS NOT TO DISTURB THE PIPE. HOWEVER, 8-INCH LAYERS WILL BE PERMITTED WHEN USING VIBRATORY COMPACTION EQUIPMENT PROVIDED BACKFILL MATERIAL IS SUITABLE FOR COMPACTION TESTING. EACH LAYER OF BACKFILL SHALL BE THOROUGHLY COMPACTED WITH MECHANICAL TAMPERS OR BY OTHER ACCEPTABLE METHODS, FOR THE FULL TRENCH WIDTH. THE BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE DETERMINED DRY WEIGHT DENSITY OF THE BACKFILL MATERIAL.
3. EXCEPTIONS: IN CERTAIN CASES TRENCHES CAN NOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED. IN THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 1. (CONSTRUCTION REQUIREMENTS) WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
   A. DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
   B. IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES OR FACILITIES WILL BE INSTALLED, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.
   C. SIDES OF TRENCHES SHALL BE KEPT AS NEARLY VERTICAL AS POSSIBLE, AND THE TRENCHES SHALL BE EXCAVATED TRUE TO THE LINE SO THAT A CLEAR SPACE EIGHT (8") INCHES IN WIDTH IS PROVIDED ON EACH SIDE OF THE BARREL OF THE PIPE TO A HEIGHT OF LESS THAN ONE (1) FOOT ABOVE THE TOP OF THE PIPE. IF SHEETING IS REQUIRED AT THE LEVEL OF THE PIPE, THE DIMENSIONS IN THE FOREGOING SENTENCE SHALL BE APPLICABLE TO THE INSIDE FACES OF THE SHEETING.
   D. THE MUNICIPALITY SHALL HAVE THE RIGHT TO LIMIT THE AMOUNT OF TRENCH OPENED IN ADVANCE OF PIPE LAYING AND THE AMOUNT OF PIPE LAID IN ADVANCE OF BACKFILLING, BUT IN NO CASE SHALL MORE THAN FOUR HUNDRED (400) FEET OF TRENCH BE OPENED AT ANY ONE PLACE IN ADVANCE OF THE COMPLETED PIPE. THE TRENCH SHALL NOT BE OPENED FOR A DISTANCE OF MORE THAN FIVE HUNDRED (500) FEET AT ANY ONE TIME.
   E. NO TRENCH WITHIN A PUBLIC STREET SHALL BE LEFT UNCOVERED AT THE CLOSE OF THE WORK DAY. NO OTHER TRENCH SHALL BE LEFT UNCOVERED FOR MORE THAN FIVE CONSECUTIVE WORKING DAYS. STEEL PLATES OF ADEQUATE STRENGTH MAY BE USED TO COVER OPENINGS WITH THE PRIOR APPROVAL OF THE MUNICIPAL ENGINEER.
   F. PRIOR TO PERFORMING ANY BLASTING, THE CONTRACTOR MUST OBTAIN ALL NECESSARY LICENSES AND PERMITS. PROTECTIVE MEASURES MUST BE USED TO INSURE SAFETY TO ADJACENT PROPERTY.
   G. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INJURY TO PERSONS OR PROPERTY THAT MAY RESULT FROM THE USE OF EXPLOSIVES. ALL BLASTING SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED BLASTER, AND SHALL BE SUBJECT TO STATE, COUNTY AND LOCAL REGULATIONS.
   H. WHEN PIPE IS TO BE INSTALLED IN FILL, THE EMBANKMENT SHALL BE CONSTRUCTED TO AT LEAST ONE (1) FOOT ABOVE THE PROPOSED TOP OF THE PIPE. THE EMBANKMENT SHALL THEN BE EXCAVATED TO THE PROPER FORM AND GRADE, AND THE PIPE INSTALLED. THE EMBANKMENT SHALL THEN BE CONSTRUCTED TO NOT LESS THAN THREE AND ONE HALF (3 ½) FEET ABOVE THE TOP OF THE PIPE.



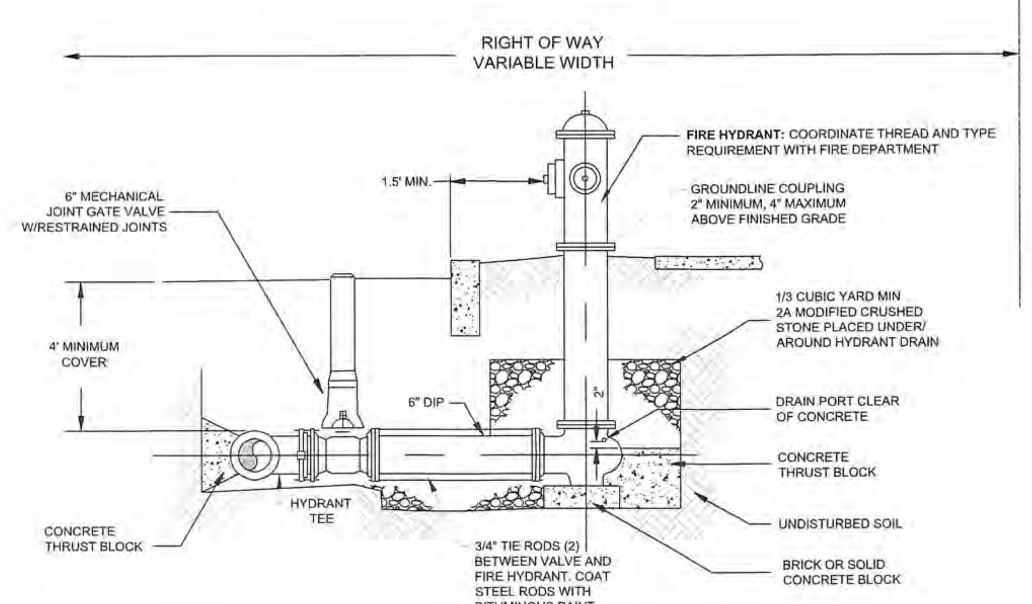
UTILITY TRENCH DETAIL

N.T.S.



NOTES:
1. THE MINIMUM DEPTH OF HYDRANT BURY SHALL BE 5 FEET, FROM FINISHED GRADE AT HYDRANT BARREL TO BOTTOM OF BASE.
2. GENERAL LOCATION OF THE HYDRANT ASSEMBLY IS AS SHOWN ON THE CONTRACT DRAWINGS. EXACT LOCATION OF HYDRANT ASSEMBLY SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. FOR BIDDING PURPOSES, MAXIMUM DISTANCE BETWEEN WATER MAIN AND FIRE HYDRANT IS TO BE 15 FEET.

HYDRANT PLAN VIEW

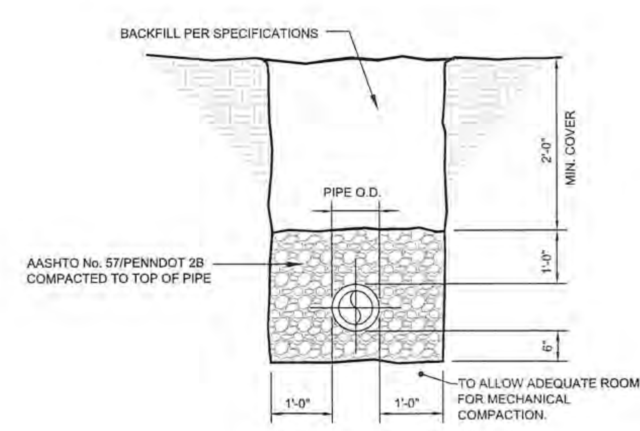


HYDRANT ELEVATION

NOTES:
1. THE MINIMUM DEPTH OF HYDRANT BURY SHALL BE 5 FEET, FROM FINISHED GRADE AT HYDRANT BARREL TO BOTTOM OF BASE.
2. GENERAL LOCATION OF THE HYDRANT ASSEMBLY IS AS SHOWN ON THE CONTRACT DRAWINGS. EXACT LOCATION OF HYDRANT ASSEMBLY SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. FOR BIDDING PURPOSES, MAXIMUM DISTANCE BETWEEN WATER MAIN AND FIRE HYDRANT IS TO BE 15 FEET.
3. HYDRANTS MUST HAVE PENTAGON NUT ON OPERATING STEM AND ALL CAPS.
4. HYDRANTS MUST OPEN IN A COUNTER CLOCKWISE (LEFT) DIRECTION.
5. HYDRANTS MUST HAVE (2) HOSE AND (1) PUMP NOZZLES. THREADS MUST BE 2.5" NH (NATIONAL STANDARD) FOR HOSE CONNECTIONS. THREADS MUST BE 4.5" NH (NATIONAL STANDARD) FOR PUMPER CONNECTION.
6. ALL PRIVATELY OWNED AND MAINTAINED FIRE HYDRANTS SHALL HAVE BODY AND CAPS PAINTED YELLOW. ALL BONNETS (DOMES) SHALL BE PAINTED TO MEET THE FOLLOWING COLOR SCHEME:
   * 4" AND 6" WATER MAINS SHALL HAVE "RED" BONNETS (DOMES)
   * 8", 10" AND 12" WATER MAINS SHALL HAVE "GREEN" BONNETS (DOMES)
   * 16" AND LARGER WATER MAINS SHALL HAVE "BLUE" BONNETS (DOMES)

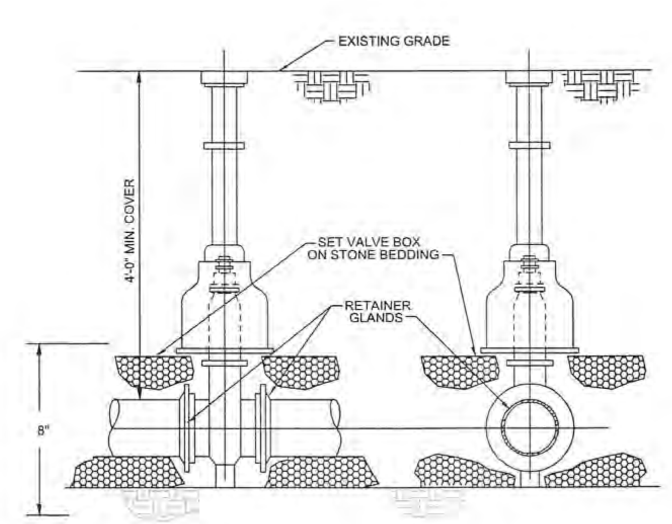
TYPICAL FIRE HYDRANT PIPING AND RESTRAINT DETAIL

N.T.S.



TRENCH DETAIL FOR PVC PIPE

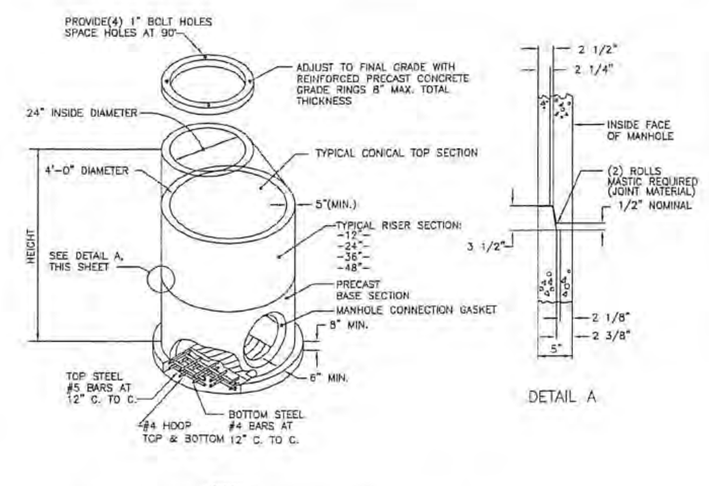
N.T.S.



NOTES:
1. RETAINER GLANDS REQUIRED ON ALL MECHANICAL JOINT FITTINGS.
2. VALVE BOX SHALL BE 2 PIECE SCREW TYPE.

GATE VALVE INSTALLATION

N.T.S.



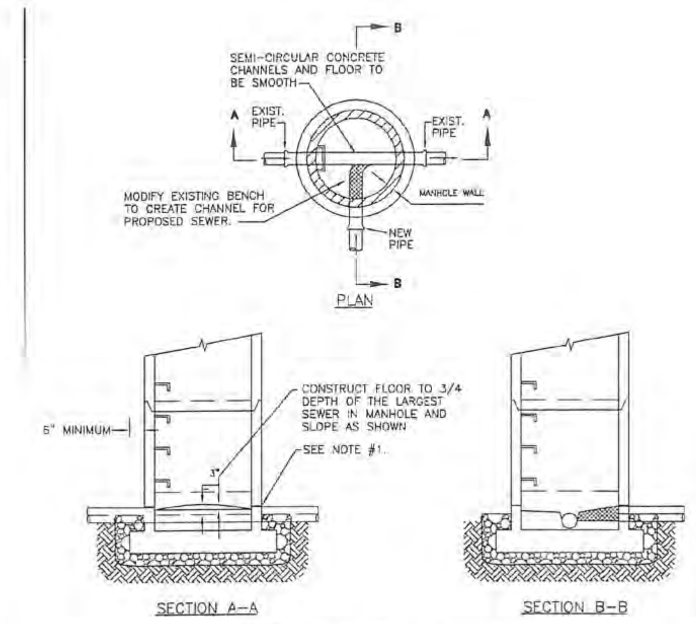
NOTES

1) CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 408 CURRENT EDITION SECTION 714; AND ASTM C-478M CURRENT EDITION. STANDARD SPECIFICATION FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS AS MODIFIED HEREIN.
2) MINIMUM CONCRETE COMPRESSIVE STRENGTH:
   CAST IN PLACE 4000 PSI
   PRECAST 4000 PSI
3) PROVIDE STEEL REINFORCEMENT IN ACCORDANCE WITH ASTM A-185.
4) MANHOLE COATINGS: EXTERIOR COATING; COOPER BLACK NO. 760 TOP SERVICE BLACK AS MANUFACTURED BY COOPERS CREEK CHEMICAL CORP.OR APPROVED EQUAL. AT LEAST THREE (3) COATS SHALL BE APPLIED GIVING A TOTAL DRY FILM THICKNESS OF A MINIMUM 32.0 MILS. INTERIOR COATING: SHERWIN WILLIAMS MACRO POXY-646 WHITE (FAST CURE EPOXY). AT LEAST TWO (2) COATS SHALL BE APPLIED GIVING A TOTAL DRY THICKNESS OF A MINIMUM 10-14 MILS.
5) FLOW CHANNEL TO BE PRECAST INTO MANHOLE BASE.
6) MANHOLE CONNECTION GASKETS: ECONOSEAL AS MANUFACTURED BY PRESS SEAL GASKET CORP. (SPEC. ASTM C-923) OR APPROVED EQUAL.
7) MANHOLES SHALL BE CONSTRUCTED WITH STEPS. REFER TO WHITPAIN TOWNSHIP DETAIL #15 FOR SPEC. OF STEPS.
8) WATERSAVING DISH TO BE INSTALLED BENEATH MH COVER.

MANHOLE SIZE	PIPE SIZE
4'ø	≤ 20"
5'ø	21-30"
6'ø	33-42"

PRECAST SANITARY MANHOLE

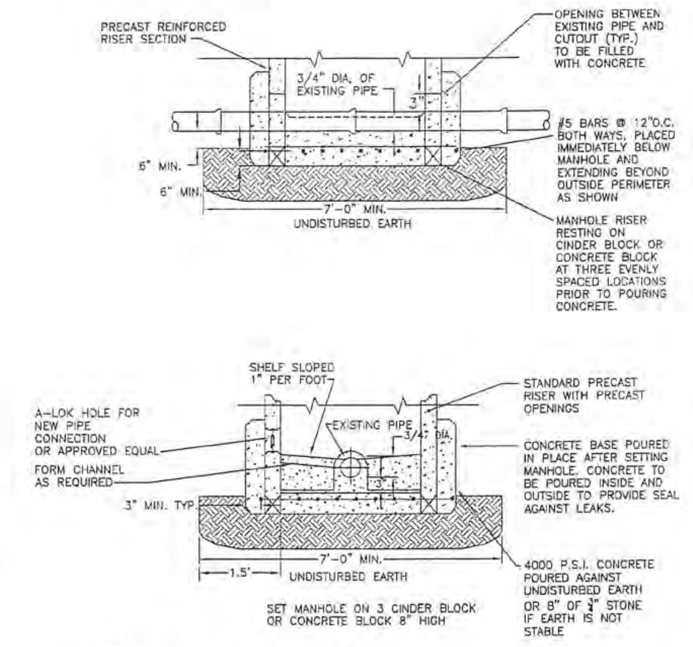
N.T.S.



NOTES:
1) CORE DRILL HOLE INTO EXISTING MANHOLE WALL.
2) IF PVC OR D.I.P., INSTALL PSX: POSITIVE SEAL (PRESS-SEAL GASKET CORP.) OR APPROVED EQUAL.
3) RESHAPE AND OR RECONSTRUCT EXISTING CHANNEL FOR NEW FLOW PATTERN.
4) CUT OPENING IN EXISTING MANHOLE WALL EQUAL TO PROPOSED SANITARY SEWER O.D. PLUS 2" A WATERSTOP (FERNCO OR APPROVED EQUAL) SHALL BE PLACED AROUND THE PROPOSED SEWER CENTERED IN THE MANHOLE WALL AND EMBEDDED IN NON SHRINK GROUT WHICH SHALL BE USED TO SEAL THE ANNULAR OPENING.

CONNECTION TO EXISTING MANHOLE

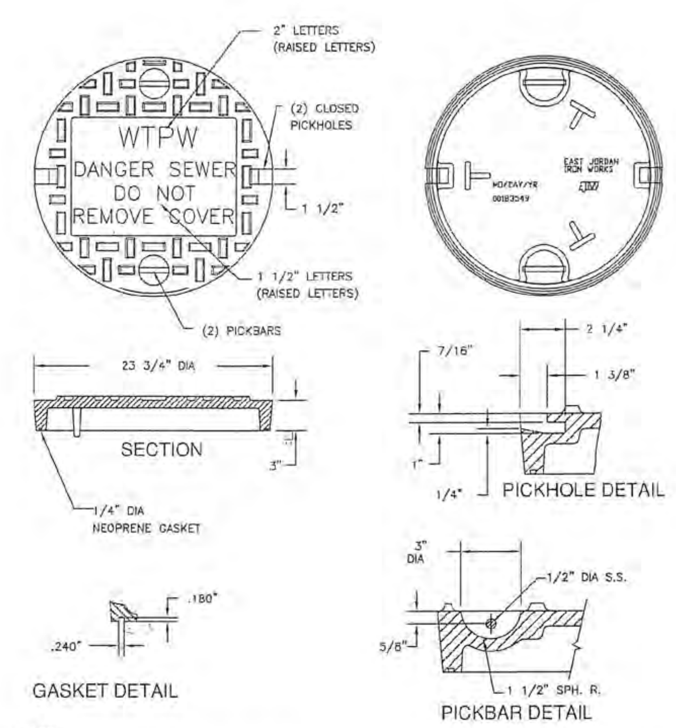
N.T.S.



NOTE:
1. EXISTING PIPE TO REMAIN UNTIL SATISFACTORY COMPLETION OF MANHOLE TESTING
2. REMOVE CROWN OF EXISTING PIPE FLUSH WITH CONCRETE SHELF.

DOGHOUSE MANHOLE

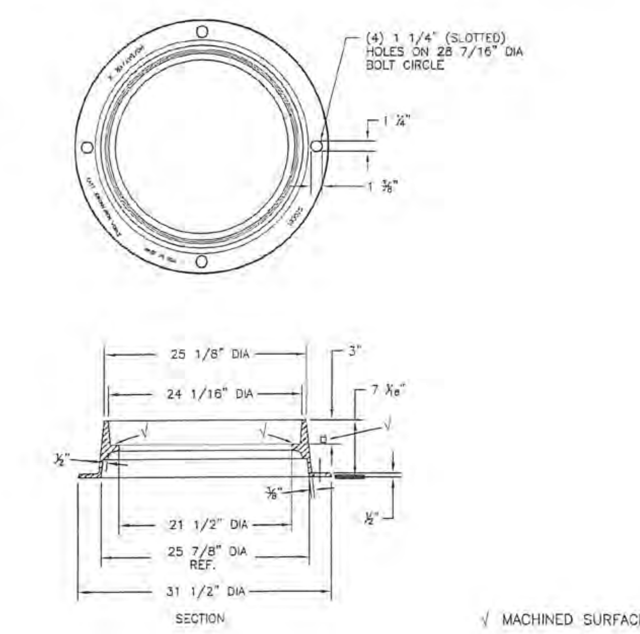
N.T.S.



NOTE:
MANHOLE COVERS SHALL NOT BE COATED
√ MACHINED SURFACE
EAST JORDAN IRON WORKS PRODUCT NO. 00183549

24" CAST IRON MANHOLE COVER

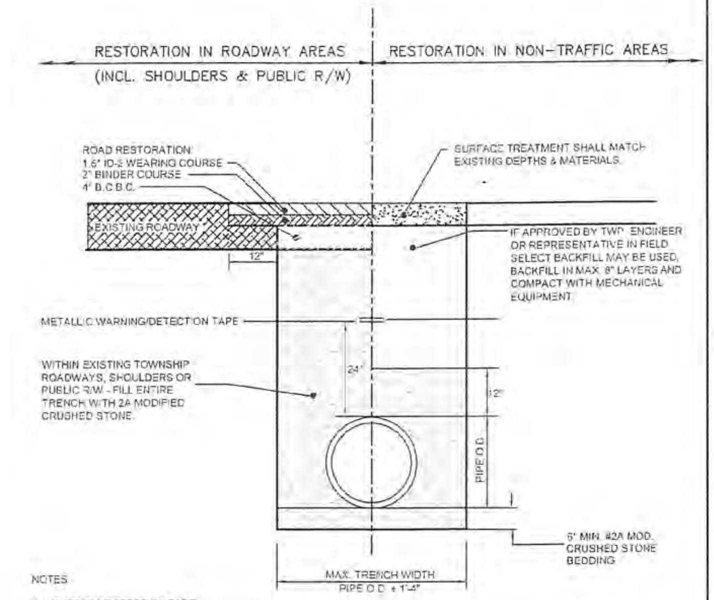
N.T.S.



EAST JORDAN IRON WORKS PRODUCT NO. 00183515

SANITARY MANHOLE FRAME

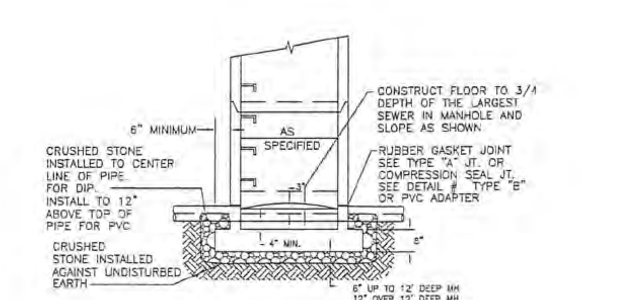
N.T.S.



NOTES
1. WARNING/DETECTION TAPE:
   A. THREE (3) INCHES WIDE METALLIC LINED, STENCILED EVERY TWO (2) FEET.
   B. TAPE SHALL BE GREEN IN COLOR WITH "CAUTION BURIED SEWER LINE BELOW" ON IT.
   C. TAPE IS TO BE PLACED APPROXIMATELY 24" ABOVE PIPE.
   D. TAPE SHALL BE SET AT ALL MAINS AND LATERALS.
2. ROAD RESTORATION IN STATE ROADS SHALL COMPLY REQUIREMENTS OF W/HIGHWAY OCCUPANCY PERMIT

SANITARY BACKFILL DETAIL

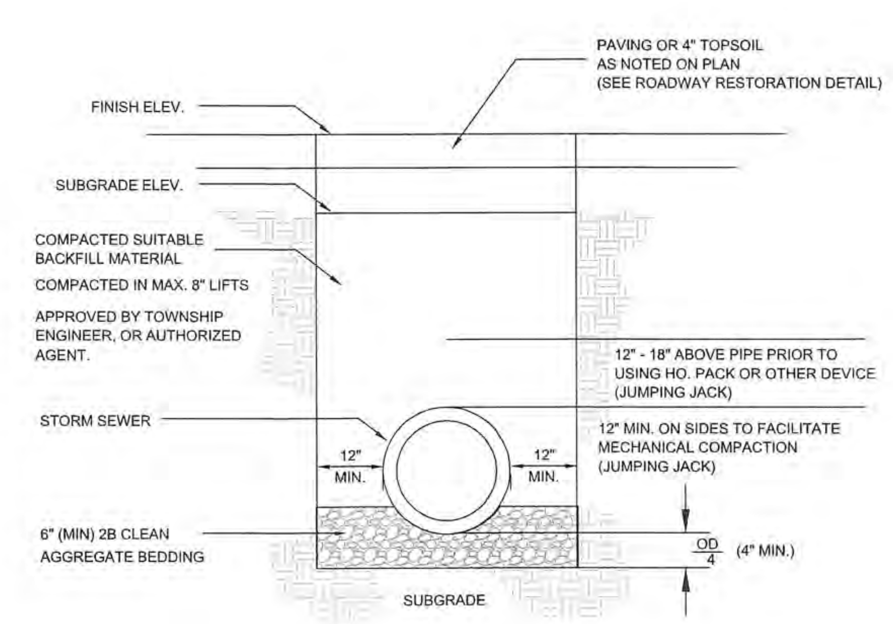
N.T.S.



NOTES:
1) CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 408 CURRENT EDITION SECTION 714. AND ASTM C-478M CURRENT EDITION AND PENNDOT RC STANDARDS CURRENT EDITION.
2) MINIMUM STRENGTH OF CONCRETE
   CAST-IN-PLACE 4000 PSI(MIN.)
   PRECAST 4000 PSI(MIN.)
3) PROVIDE STEEL REINFORCEMENT MEETING THE REQUIREMENTS OF PENNDOT PUBLICATION 408 CURRENT EDITION SEC. 709. REINFORCE PER PENNDOT 408 CURRENT EDITION AND RC STANDARD RC-39M CURRENT EDITION.

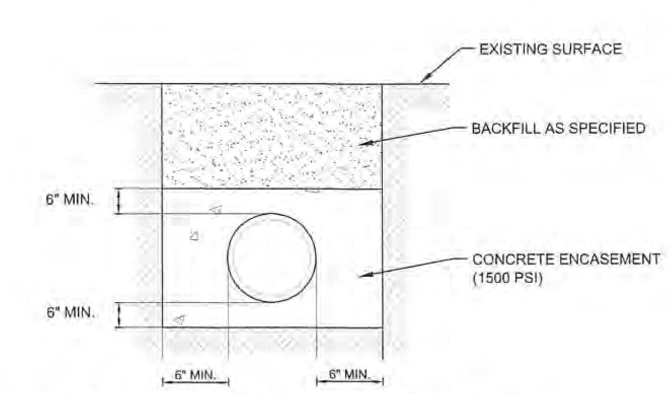
PRECAST MANHOLE BASE

N.T.S.



TRENCH DETAIL FOR STORM SEWER

N.T.S.



CONCRETE ENCASEMENT

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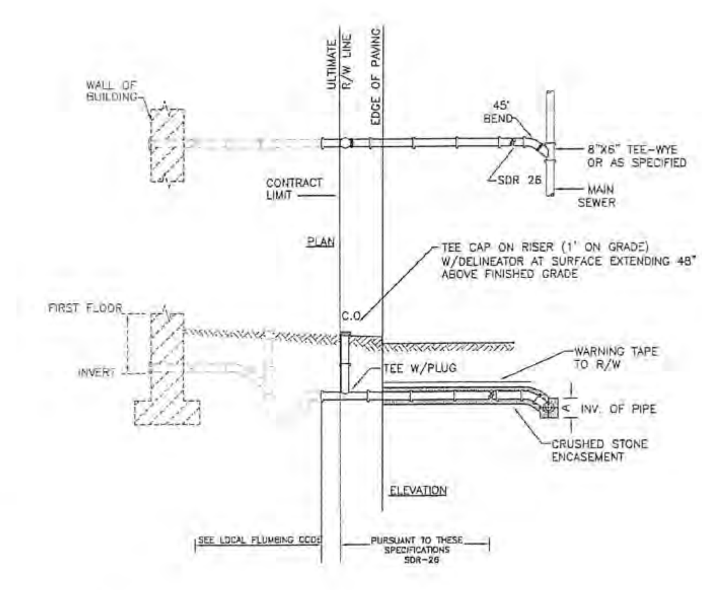

NOTES:
1. MINIMUM GRADE OF LATERAL = 1/4" IN 1'-0", EXCEPT AS APPROVED OTHERWISE BY TOWNSHIP.
2. 36" MINIMUM COVER.

TYPICAL LATERAL CONNECTION

N.T.S.

ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI WITH 6% AIR-ENTRAINMENT

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1	09/11/15	CJR	REVISED PER MCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER - LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

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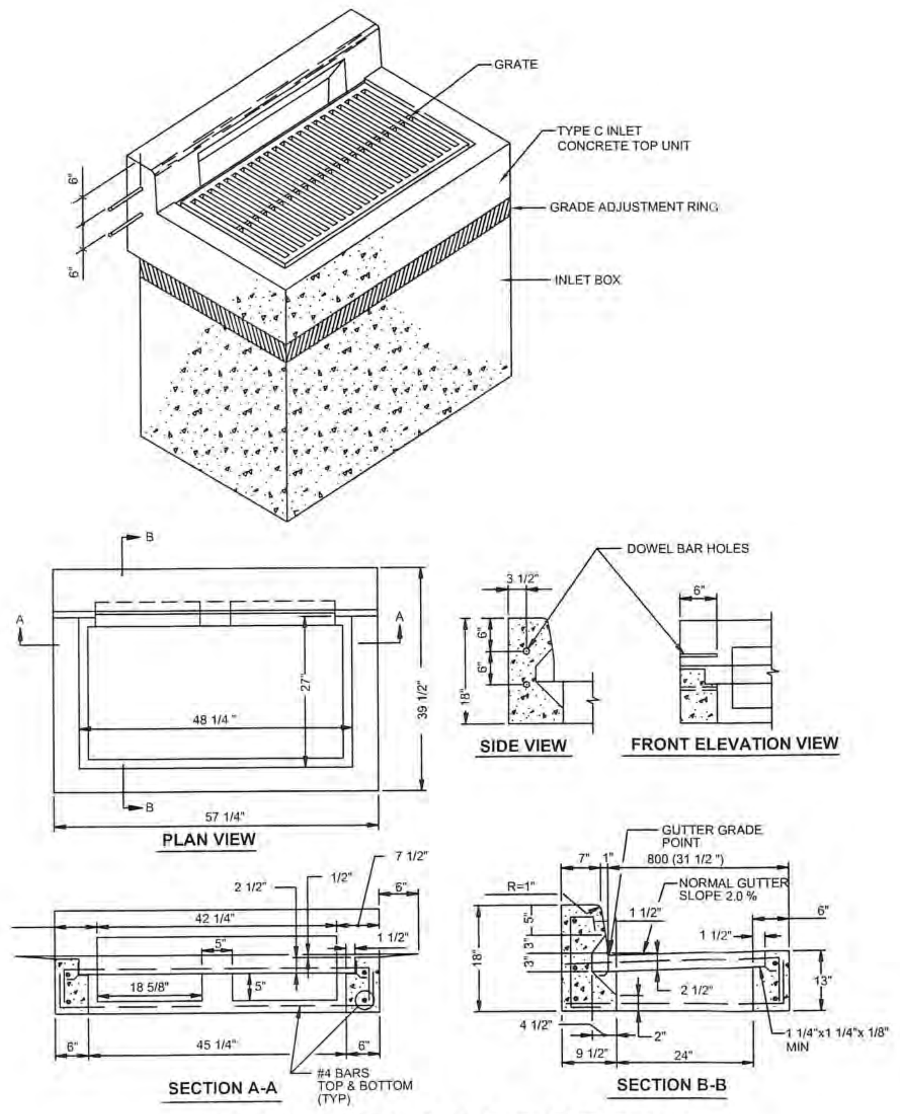
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-DTLS		

SHEET TITLE: UTILITY DETAILS

12000830A\Engineering\C-DTLS.dwg\C-22-UTILITY-DETAILS By: JDUMKE



TYPE "C" INLET DETAIL

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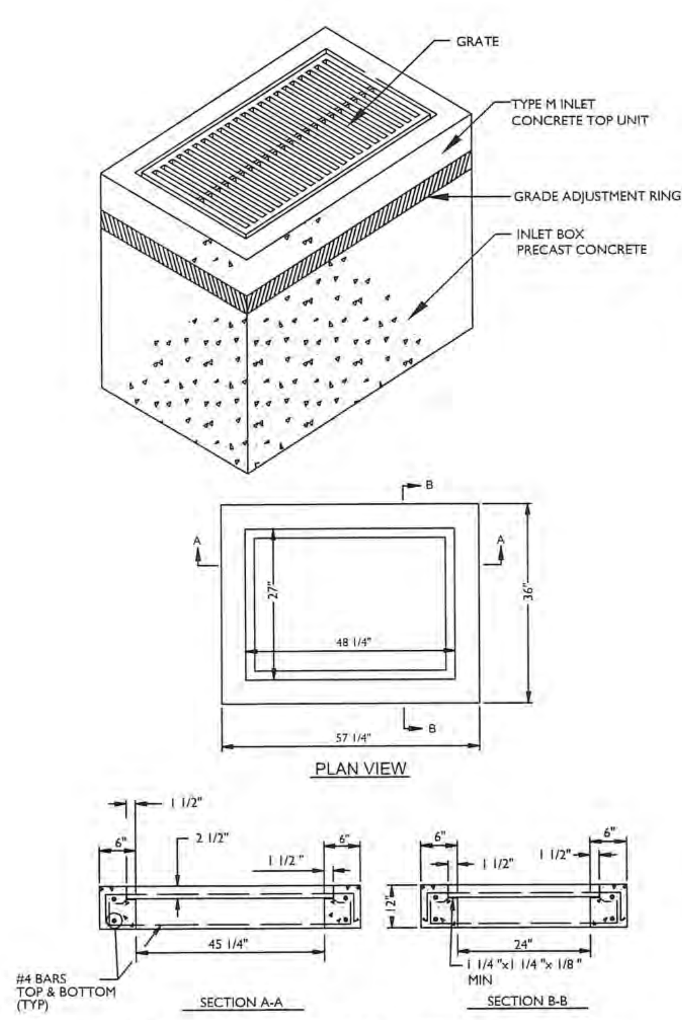

TYPE "M" INLET DETAIL

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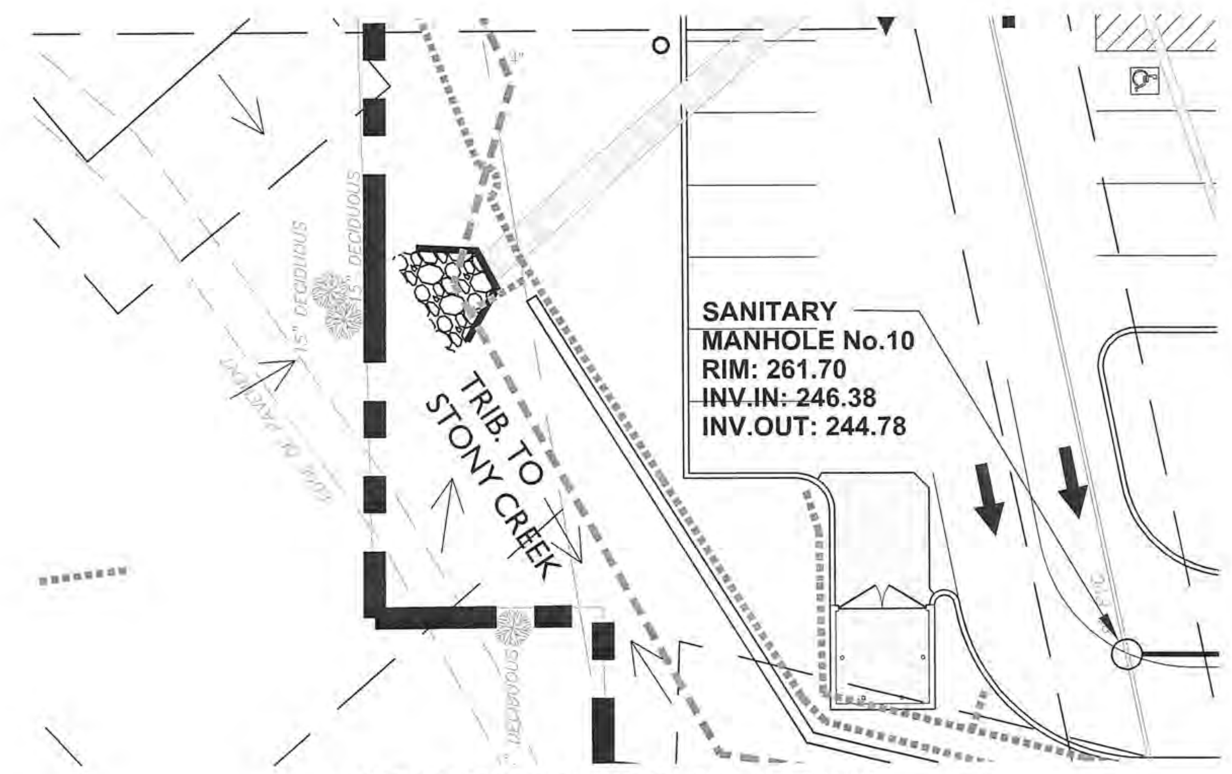
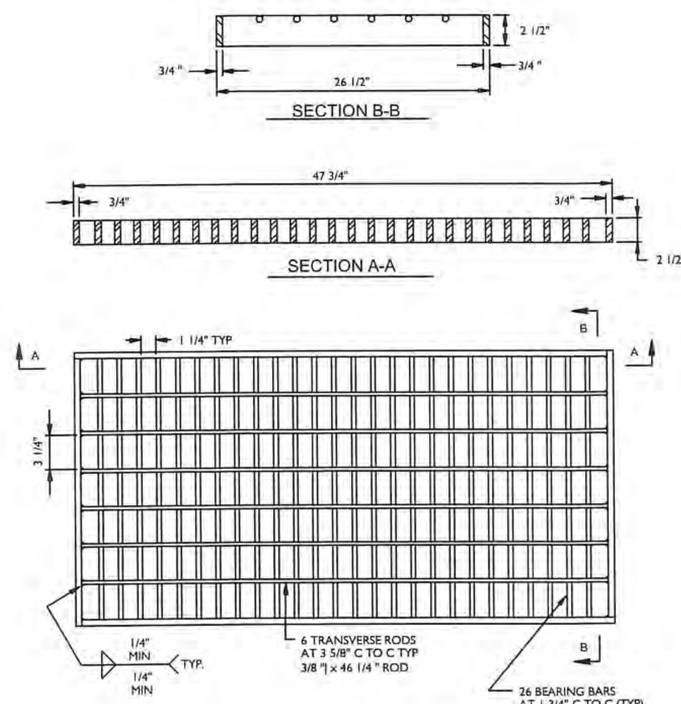


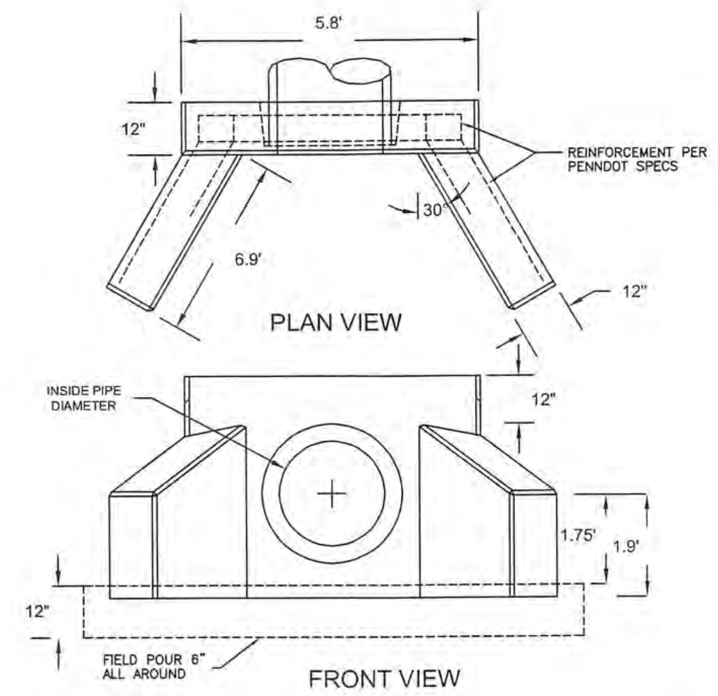
HEADWALL (GP-4) DETAIL

1"=20'



STRUCTURAL STEEL GRATE BICYCLE SAFE

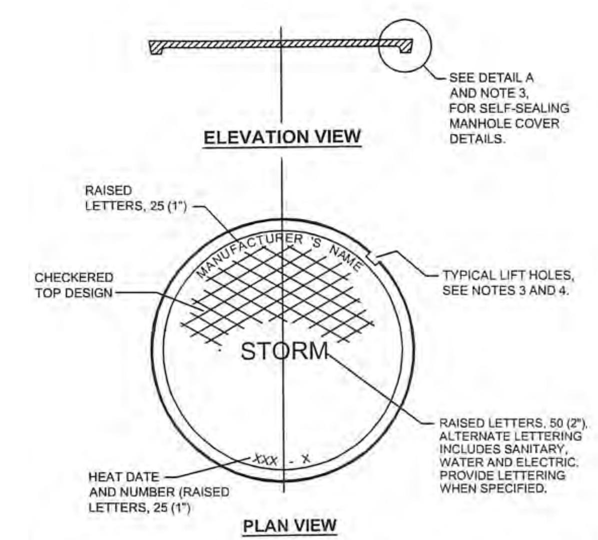
N.T.S.



NOTE:
1. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATIONS AS OUTLINED IN PENNDOT PUBLICATION 408, SECTION 605.
2. PROVIDE REINFORCEMENT IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 709.
3. USE CLASS A CONCRETE OR BETTER.

TYPE D-W ENDWALL DETAIL

NTS



CAST IRON MANHOLE COVER

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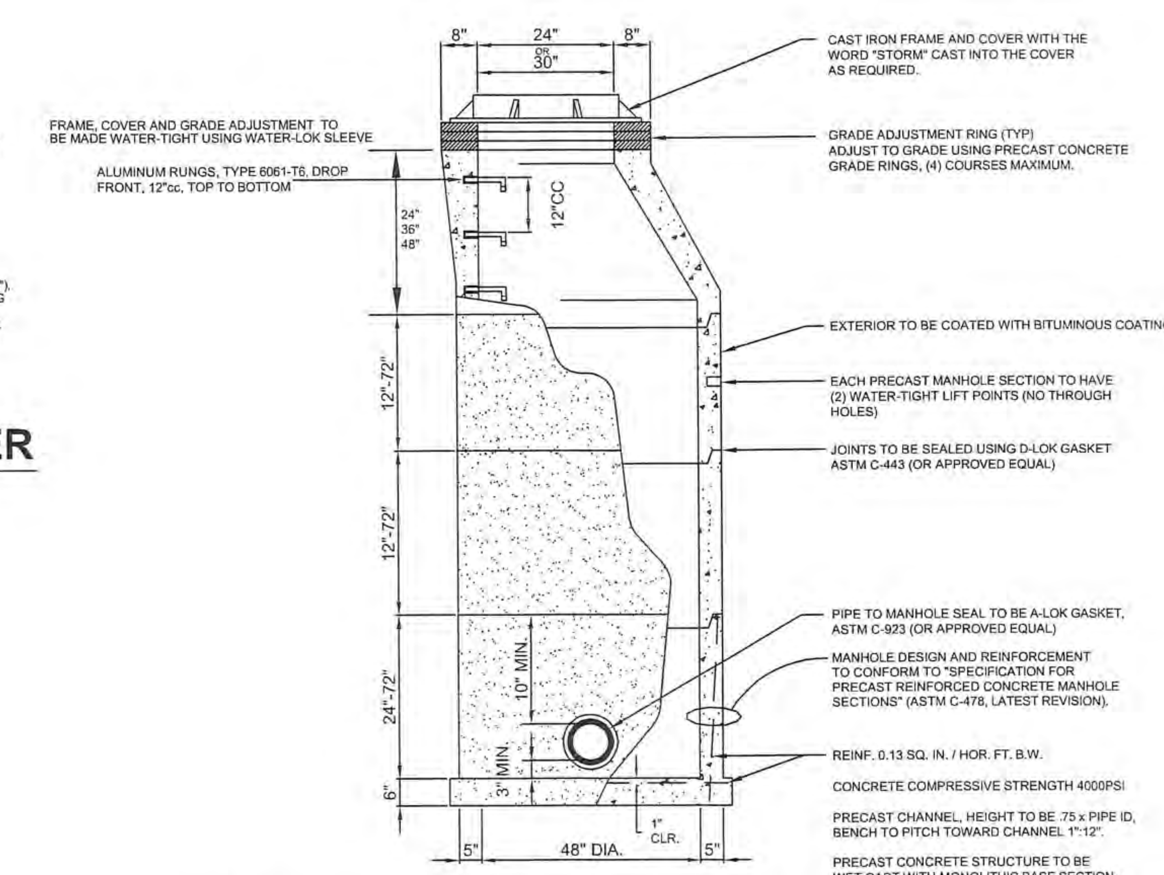

48" DIAMETER STORM MANHOLE DETAIL

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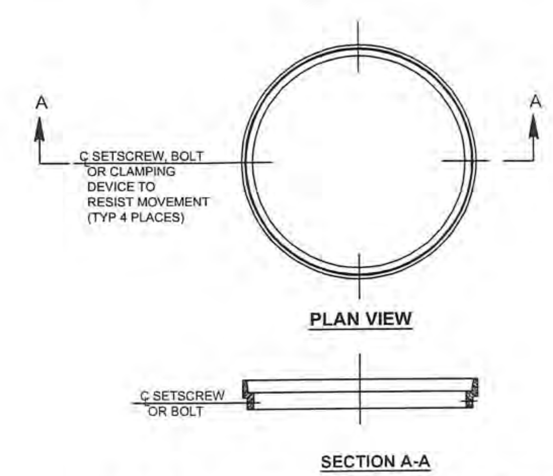
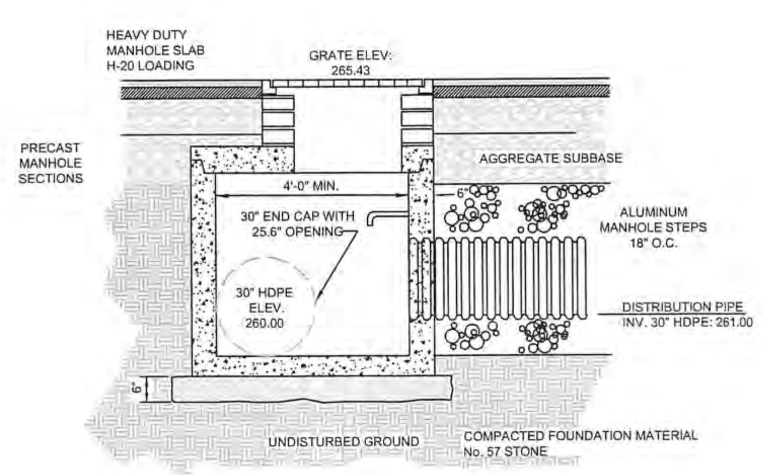


ADJUSTMENT RISERS

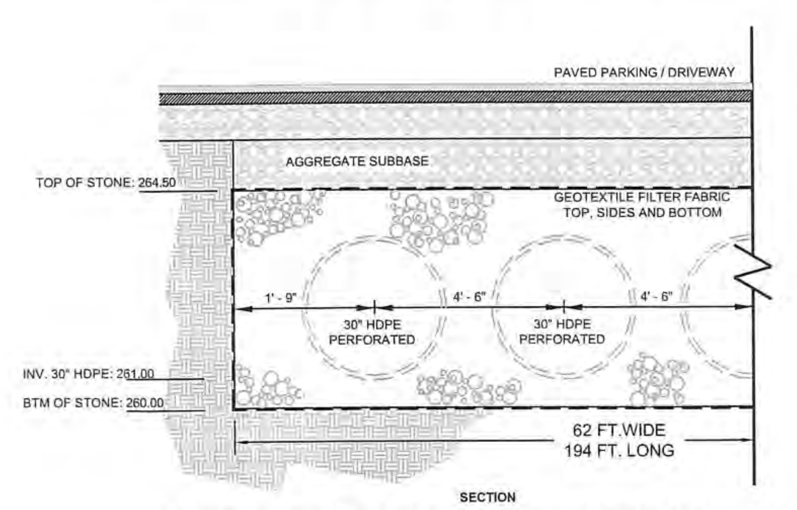
N.T.S.



NOTES
1. STRUCTURE SHALL BE DESIGNED TO H-20 HIGHWAY LOADING.
2. ALL PRE-CAST CONCRETE TO BE IN ACCORDANCE WITH LATEST A.S.T.M. DESIGNATION C-478, MIN. COMPRESSIVE STRENGTH TO BE 4,000 PSI
3. ALL MANHOLES NOT IN PAVED AREAS SHALL HAVE LOCKING COVERS.

BASIN 2 DISCHARGE STRUCTURE DETAIL

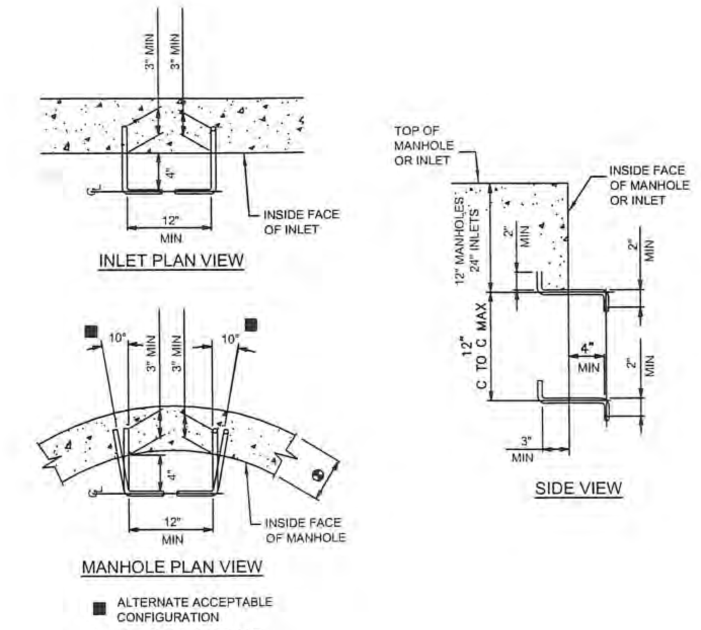
NO SCALE



13 ROWS OF 30" PERFORATED HDPE PIPE @ 0.000 FT/FT

UNDERGROUND STORMWATER MANAGEMENT BASIN 2

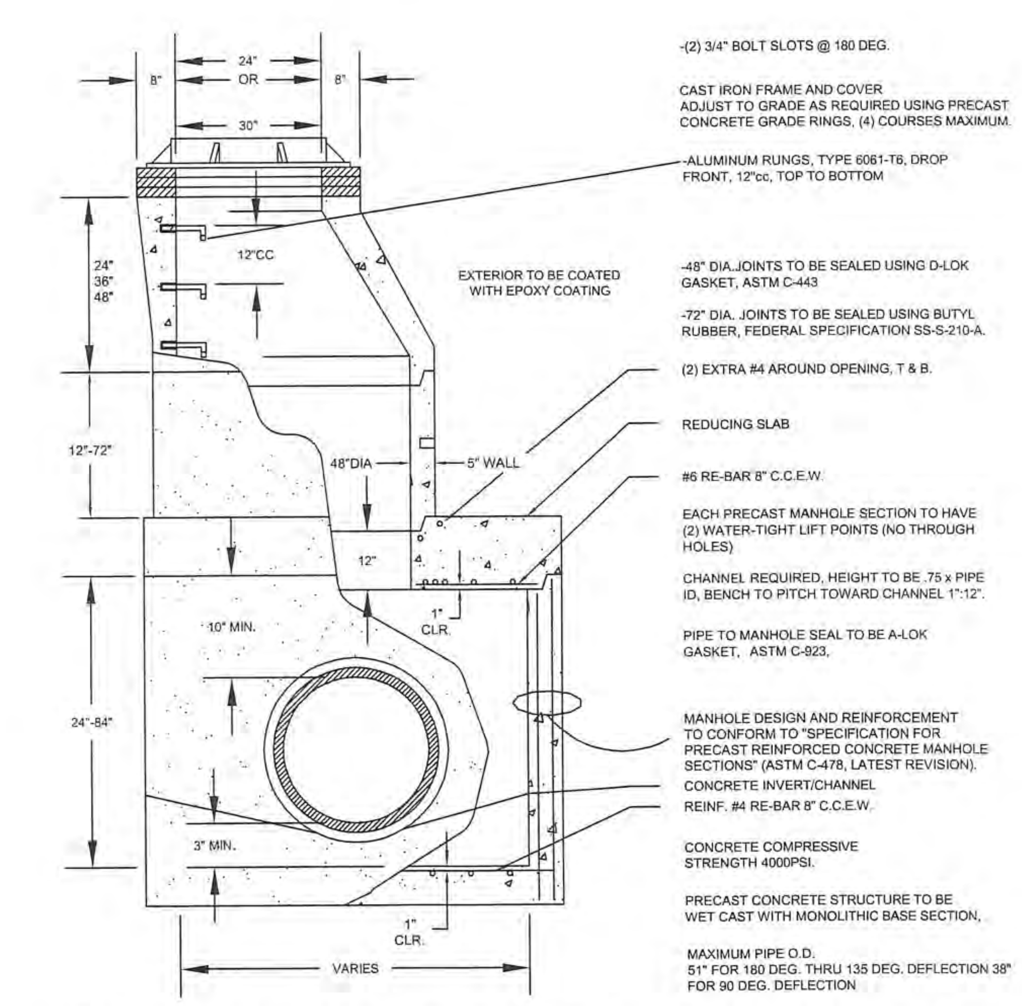
NO SCALE



NOTES:
1. PROVIDE POLYPROPYLENE PLASTIC COATED 1/2" DIAMETER GRADE 60 STEEL REINFORCED STEPS 12" CENTER TO CENTER IN ALL INLETS AND BOXES OVER 4 FEET IN DEPTH.
2. PROVIDE MANHOLE STEPS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 605.2(c). ALTERNATE CONFIGURATIONS AND DIMENSIONS, AS APPROVED BY THE ENGINEER, MAY BE USED.
3. PROVIDE MINIMUM 1" SECTION DIMENSION FOR METAL STEPS. PROVIDE MINIMUM 3/4" SECTION DIMENSION FOR NON-DETERIORATING MATERIAL STEPS.

TYPICAL STEP CONFIGURATION MANHOLE AND INLET STEPS

N.T.S.



48"/60"/72" DIAMETER STORM MANHOLE DETAIL

NO SCALE

UNDERGROUND BASIN PCSM NOTES (BASINS 1 AND 2):

PURPOSE: REDUCE STREAM BANK EROSION BY CONTROLLING 2 YR TO 1 YR YR STORM (RATE CONTROL)

DRAINAGE AREA: 17.73 ACRES

MAINTAINED BY: PROPERTY OWNER

MAINTENANCE SCHEDULE: SEE BELOW

MAINTENANCE NOTES:

1. ALL STORMWATER COMPONENTS MUST BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST TWO (2) TIMES ANNUALLY AND AFTER MAJOR RAINFALL EVENTS (EVENTS IN EXCESS OF 4)".
2. ALL STRUCTURAL COMPONENTS (STORM INLETS, MANHOLES AND PIPING) ARE TO BE INSPECTED FOR CRACKING, SUBSIDENCE, SPALLING, EROSION AND DETERIORATION BI-ANNUALLY.
3. SEDIMENT REMOVAL IS TO TAKE PLACE DURING DRY CONDITIONS. DISPOSAL OF DEBRIS, TRASH, SEDIMENT AND OTHER WASTE MATERIAL IS TO BE DONE AT SUITABLE DISPOSAL/RECYCLING SITES AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WASTE REGULATIONS.

STREET SWEEPING NOTES:

PURPOSE: REDUCE POLLUTANTS FROM ENTERING ANY SURFACE WATERS OR STORMWATER SYSTEM

DRAINAGE AREA: 6.13 ACRES

MAINTAINED BY: PROPERTY OWNER

MAINTENANCE SCHEDULE: ALL IMPERVIOUS DRIVES AND PARKING FIELDS TO BE SWEPT WITH A VACUUM STREET SWEEPER BIWEEKLY.(7.1 ACRES)

ALL INLETS AND MANHOLES SHALL CONFORM TO CURRENT PENNDOT RC STANDARDS AND IN ACCORDANCE WITH WHITPAIN TOWNSHIP DESIGN STANDARDS.

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1	09/11/15	CJR	REVISED PER MCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. McFALL II NO. PE060408

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

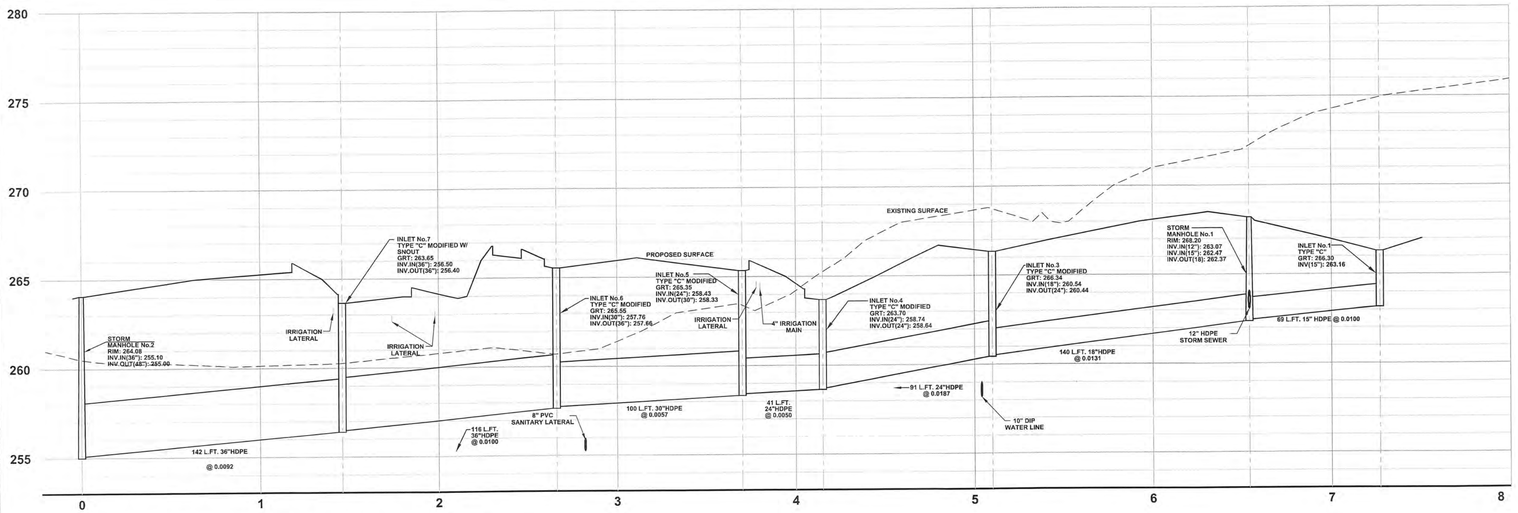
DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
Phone: 610.254.9140
Fax: 610.254.9141
email: solutions@maserconsulting.com

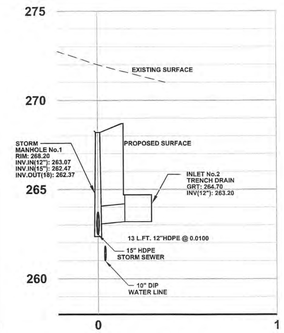
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-GRAD		

SHEET TITLE: PCSM DETAILS



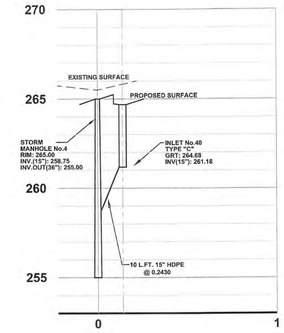
STORM SEWER: MANHOLE 2 TO INLET 1

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



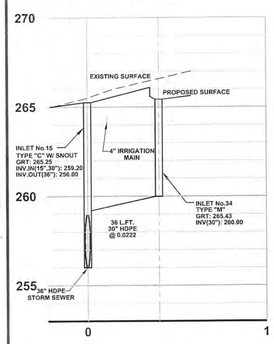
STORM SEWER: MANHOLE 1 TO INLET 2

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



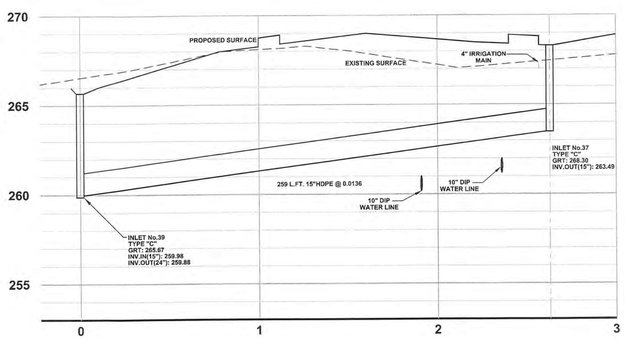
STORM SEWER: MANHOLE 4 TO INLET 40

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



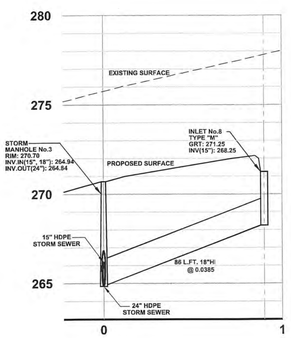
STORM SEWER: INLET 15 TO INLET 34

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



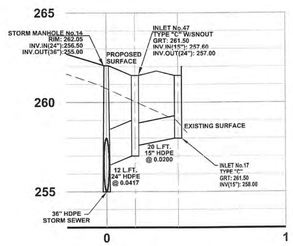
STORM SEWER: INLET 39 TO INLET 37

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



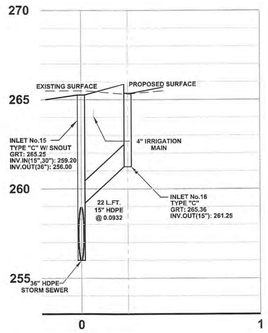
STORM SEWER: MANHOLE 3 TO INLET 8

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



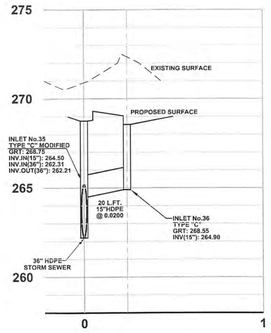
STORM SEWER: MANHOLE 14 TO INLET 17

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



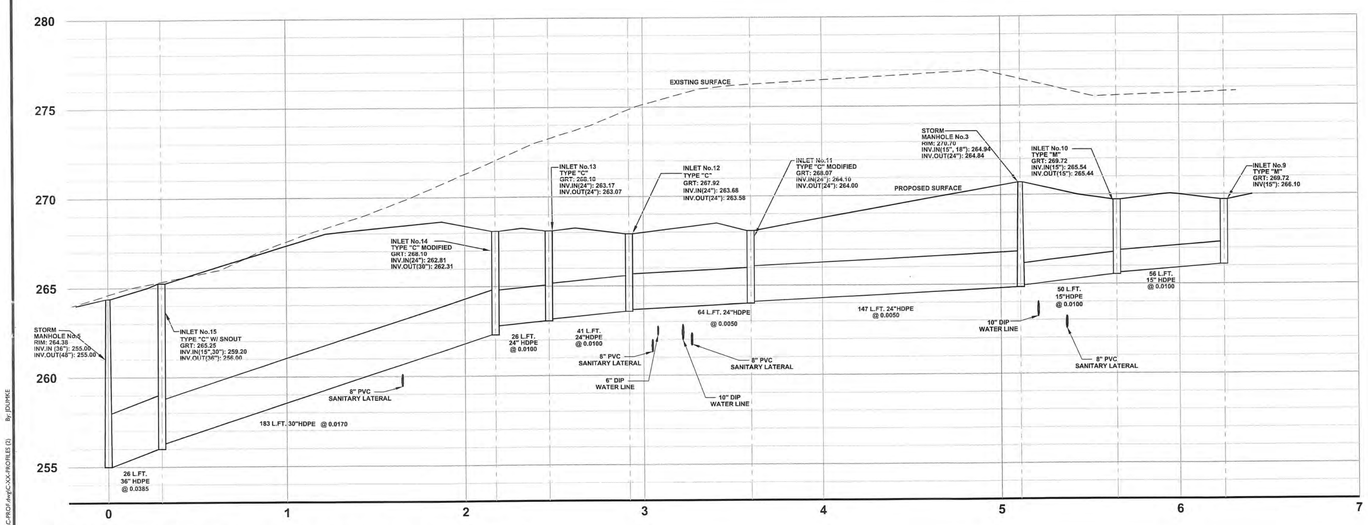
STORM SEWER: INLET 15 TO INLET 16

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



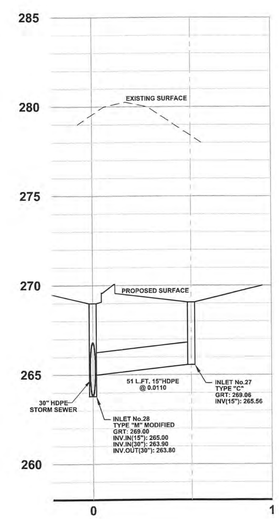
STORM SEWER: INLET 35 TO INLET 36

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



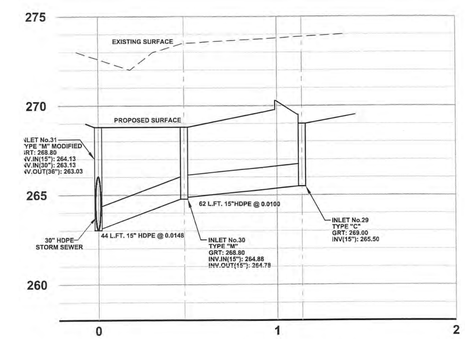
STORM SEWER: MANHOLE 5 TO INLET 9

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



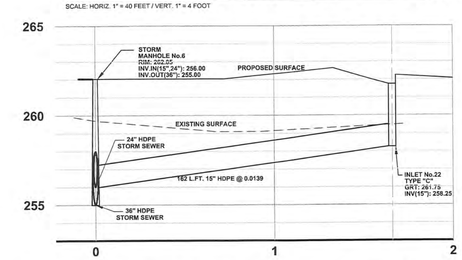
STORM SEWER: INLET 28 TO INLET 27

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



STORM SEWER: INLET 31 TO INLET 29

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



STORM SEWER: MANHOLE 6 TO INLET 22

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT

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1	08/11/15	CJR	REVISED PER PCCD REVIEW
2	10/20/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE084408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
410 Eagleview Boulevard
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Fax: 610.254.9141
email: solutions@maserconsulting.com

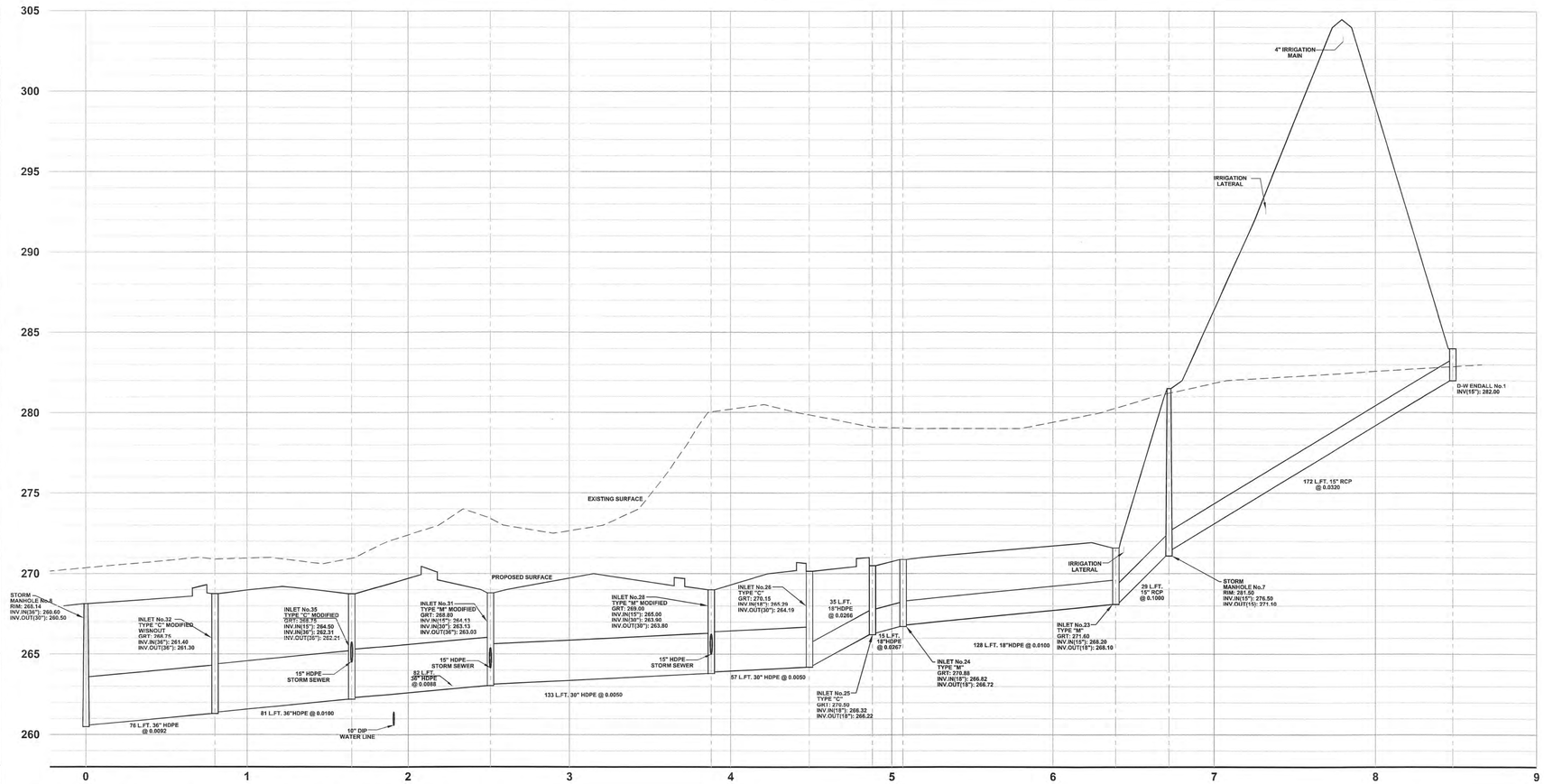
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM

PROJECT NUMBER: 12000830A
DRAWING NAME: C-PROF

SHEET TITLE:
STORM SEWER PROFILES

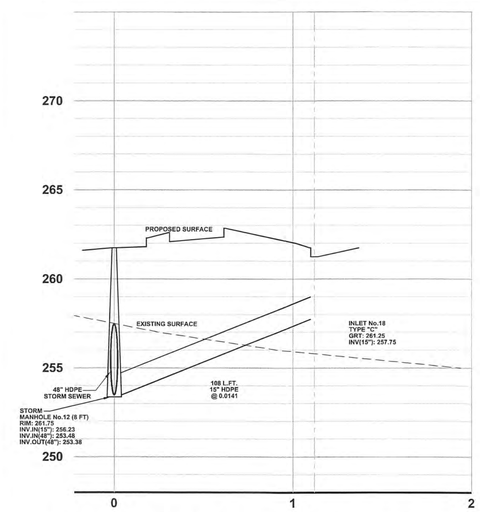
SHEET NUMBER:

12000830A/Engineering/C-PROF.dwg/C-XX-PROFILES (3) By: jbURKE



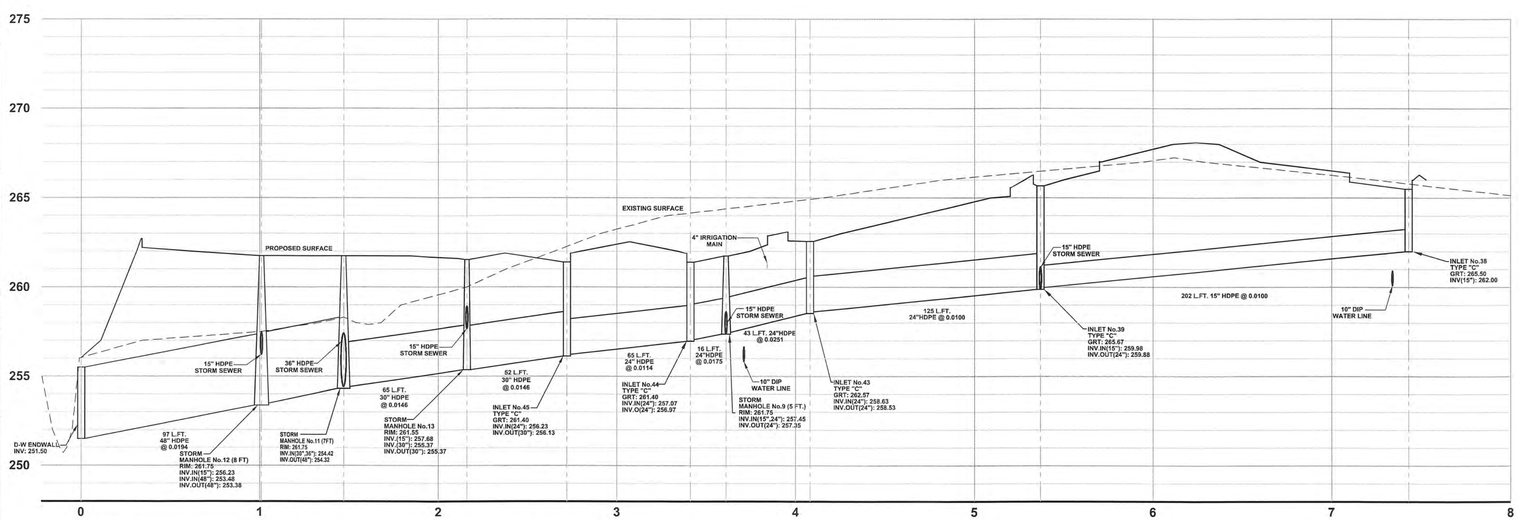
STORM SEWER: MANHOLE 8 TO ENDWALL 1

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



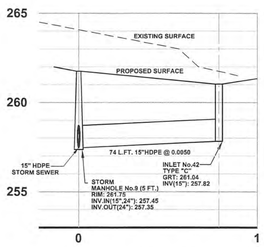
STORM SEWER: MANHOLE 12 TO INLET 18

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



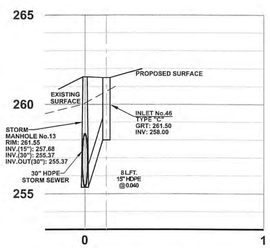
STORM SEWER: MANHOLE D-W ENDWALL TO INLET 38

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



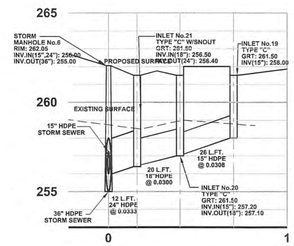
STORM SEWER: MANHOLE 13 TO INLET 46

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



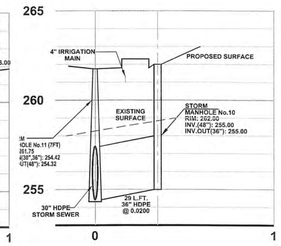
STORM SEWER: MANHOLE 13 TO INLET 46

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



STORM SEWER: MANHOLE 6 TO INLET 19

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



STORM SEWER: MANHOLE 11 TO MANHOLE 10

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT

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3	11/23/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA
RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER PE60408

FINAL LAND DEVELOPMENT PLANS
FOR
MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
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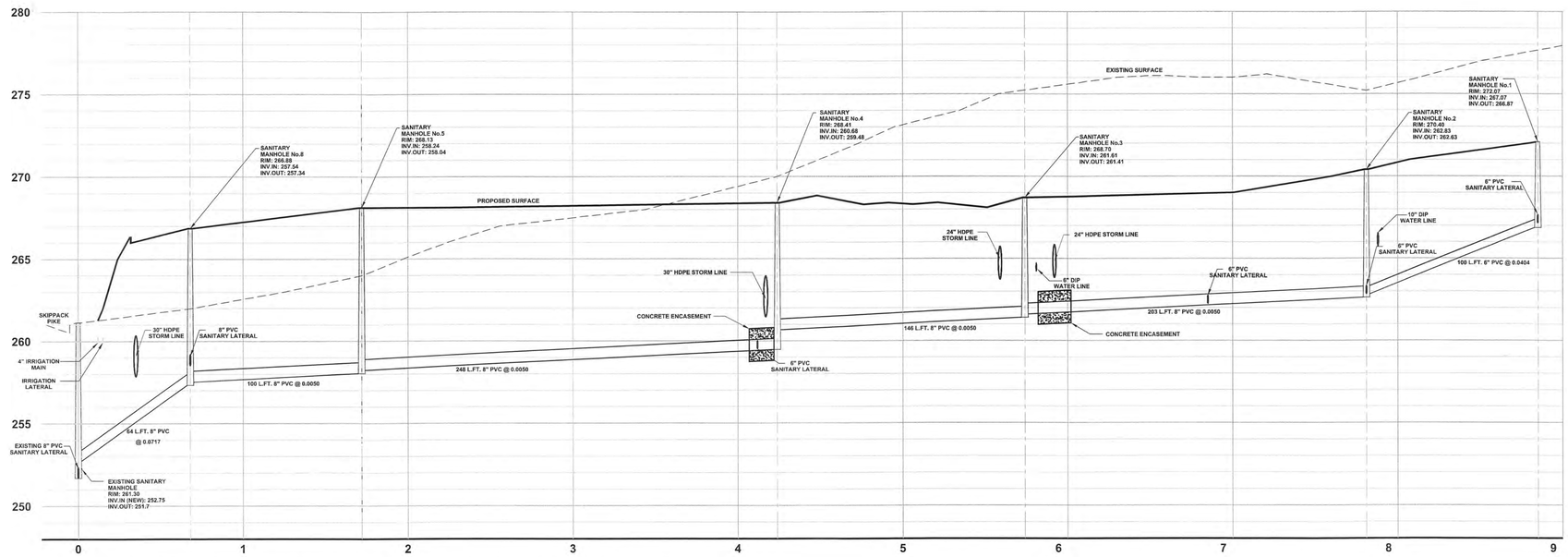
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	KTM

PROJECT NUMBER: 12000830A
DRAWING NAME: C-PROF

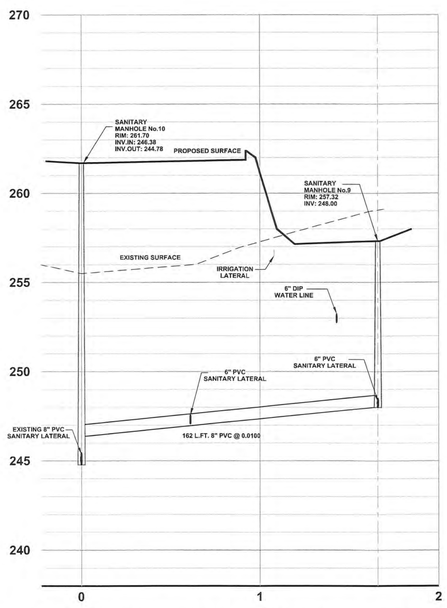
SHEET TITLE:
STORM SEWER PROFILES (CONT.)

SHEET NUMBER:



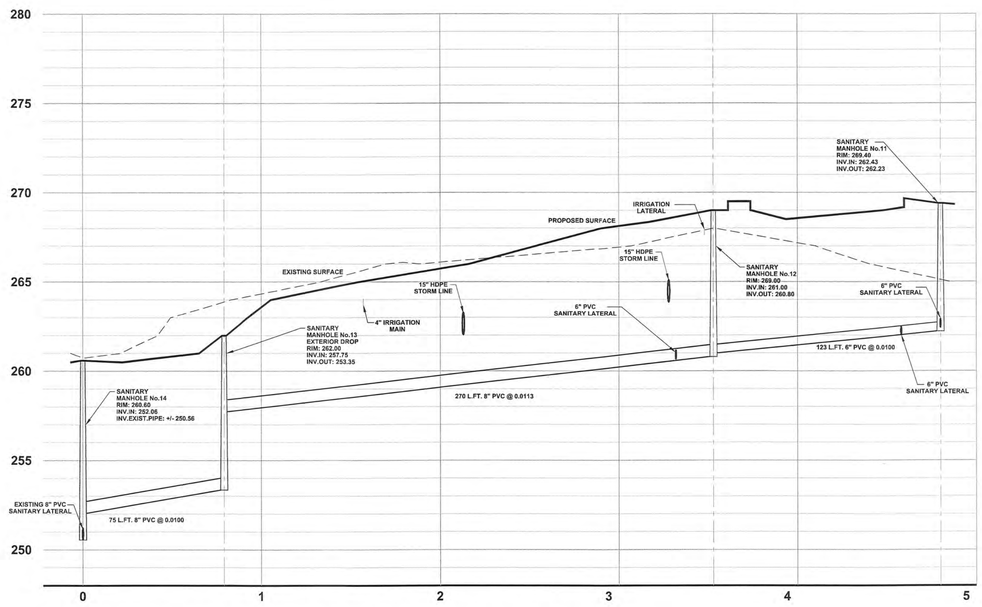
SANITARY SEWER: SKIPPACK PIKE TO SANITARY MANHOLE 1

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



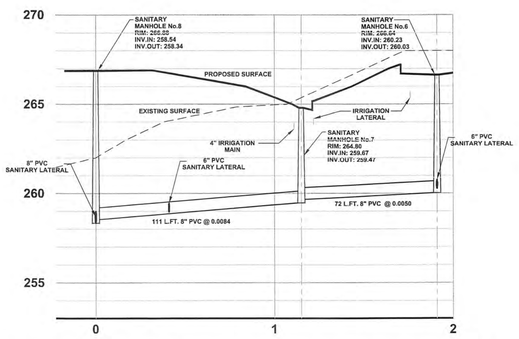
SANITARY SEWER: MANHOLE 10 TO MANHOLE 9

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



SANITARY SEWER: MANHOLE 14 TO MANHOLE 11

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT



SANITARY SEWER: MANHOLE 8 TO MANHOLE 6

SCALE: HORIZ. 1" = 40 FEET / VERT. 1" = 4 FOOT

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2	10/09/15	EXTON	FINAL PLANS SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA
RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NO. 076408

FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

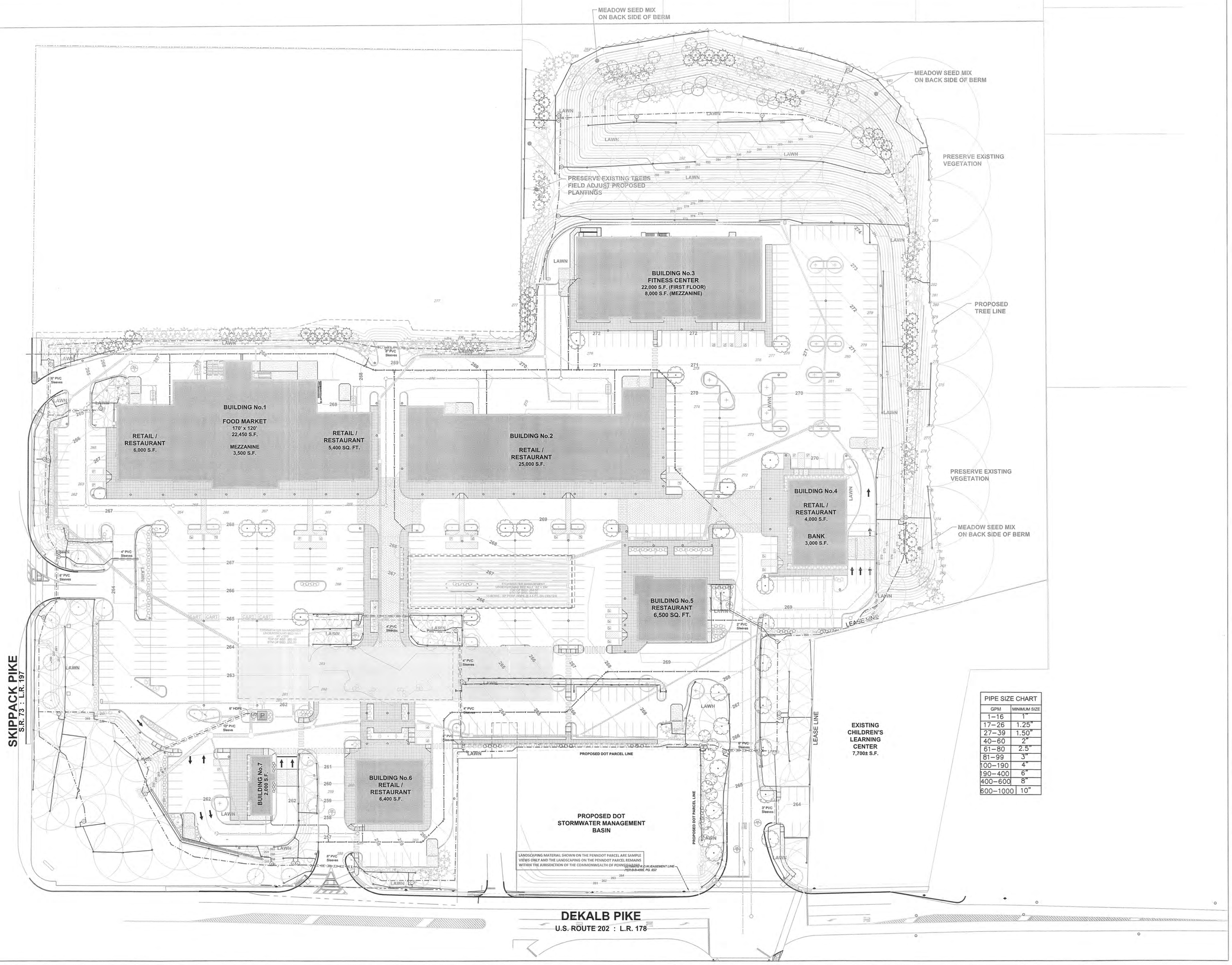
EXTON OFFICE
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
Phone: 610.254.9140
Fax: 610.254.9141
email: solutions@maserconsulting.com

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A		DRAWING NAME: C-PROF	

SHEET TITLE:
SANITARY SEWER PROFILES

SHEET NUMBER:

12000830A/C-Drawing/C-PROF.dwg/C-SX-PROFILES By: JSOARES



PIPE SIZE CHART	
GPM	MINIMUM SIZE
1–16	1"
17–26	1.25"
27–39	1.50"
40–60	2"
61–80	2.5"
81–99	3"
100–190	4"
190–400	6"
400–600	8"
600–1000	10"

AQUA MIST IRRIGATION

28 James Street
South Hackensack, NJ 07606

201-488-2057 NJ LIC # 15036

Project Title:

CENTER SQUARE COMMONS

WHITPAIN TOWNSHIP

Montgomery County Pennsylvania

Legend:

- Rainbird 5500 Rotary Head w/ # 12 Nozzle
- Rainbird 5004 Rotary Head w/ #4 Nozzle
- Rainbird 5004 Rotary Head w/ # 3 Nozzle
- Rainbird 5004 Rotary Head w/ # 2 Nozzle
- Rainbird 1800 Series Spray w/ 10' Nozzle
- Rainbird 1800 Series Spray w/ 12' Nozzle
- Rainbird 1800 Series Spray w/ 15' Nozzle
- Rainbird 1800 Series Spray w/ SST Nozzle
- Rainbird PESB Electric Valve w/Decoder
- Rainbird Pump Station
- Rainbird Site Control
- Rainbird Rain Sensor
- 4" Rainbird Flow Meter
- 4" Rainbird Master Valve
- Communication Cable in 1"conduit
- Class 200, SDR21 PVC Main Line size as noted
- 6" HDPE Main Line as noted
- 100psi Polyethylene Lateral Pipe
- Line Size Isolation Valve
- PVC Sleeves (size as noted)
- Blow out port

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RUSSELL T. McFALL II
ENGINEER
No. PE-061078

REVISIONS:

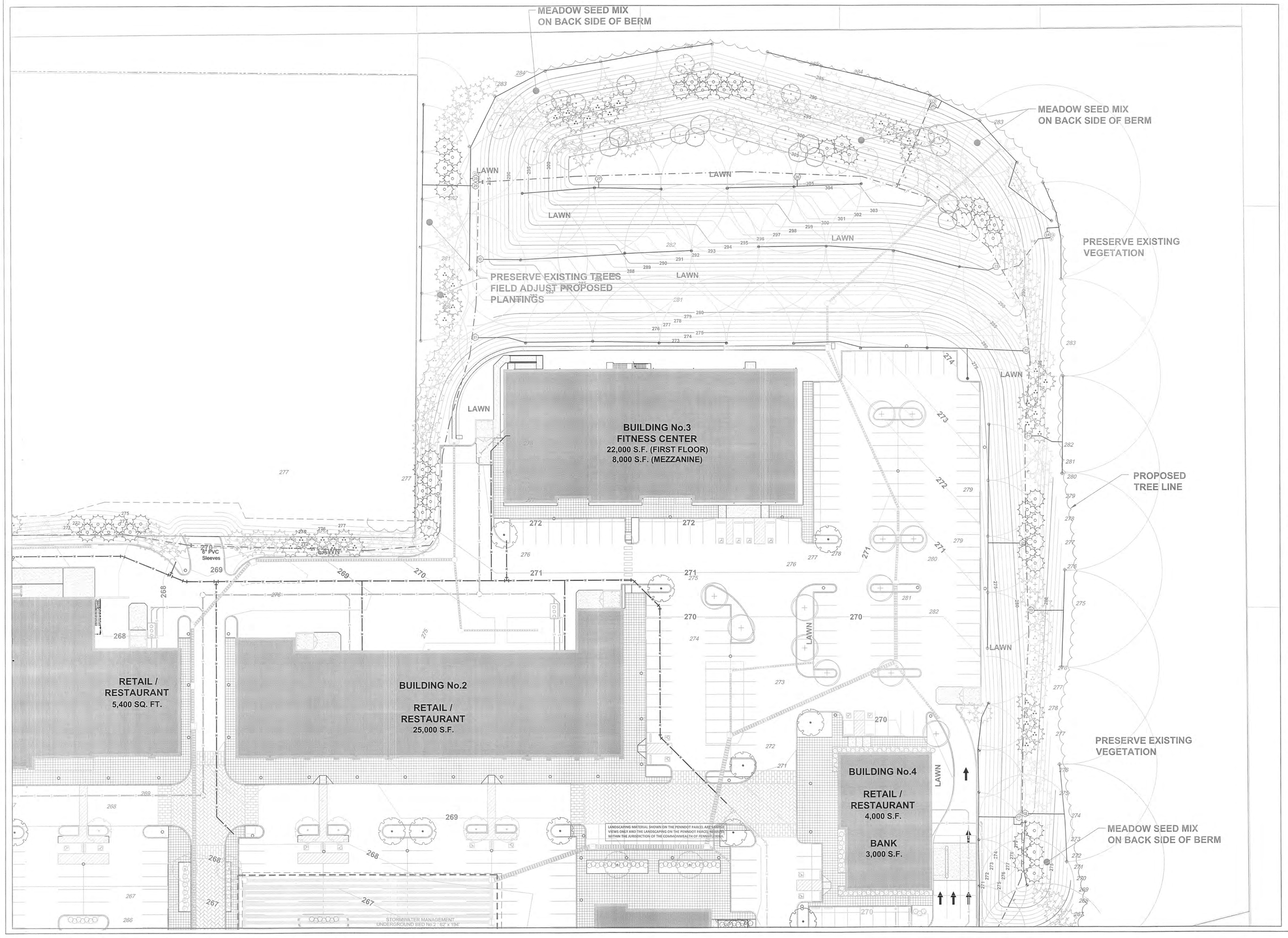
06-09-15 Landscpae Modifications
09-09-15 Pump Re-location, Landsc Modifications
09-29-15 Tank Re-location, Landsc Modifications

Project:

Center Square Commons

Post Construction Stormwater Management System

Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: 1" = 50'	Sheet #: 27 of 38



AQUA MIST IRRIGATION

28 James Street
South Hackensack, NJ 07606

201-488-2057 NJ LIC # 15036

Project Title:

CENTER SQUARE COMMONS

WHITPAIN TOWNSHIP

Montgomery County Pennsylvania

Legend:

- Rainbird 5500 Rotary Head w/ # 12 Nozzle
- Rainbird 5004 Rotary Head w/ #4 Nozzle
- Rainbird 5004 Rotary Head w/ # 3 Nozzle
- Rainbird 5004 Rotary Head w/ # 2 Nozzle
- Rainbird 1800 Series Spray w/ 10' Nozzle
- Rainbird 1800 Series Spray w/ 12' Nozzle
- Rainbird 1800 Series Spray w/ 15' Nozzle
- Rainbird 1800 Series Spray w/ SST Nozzle
- Rainbird PESB Electric Valve w/Decoder
- Rainbird Pump Station
- Rainbird Site Control
- Rainbird Rain Sensor
- 4" Rainbird Flow Meter
- 4" Rainbird Master Valve
- Communication Cable in 1"conduit
- Class 200, SDR21 PVC Main Line size as noted
- 6" HDPE Main Line as noted
- 100psi Polyethylene Lateral Pipe
- Line Size Isolation Valve
- PVC Sleeves (size as noted)
- Blow out port

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RUSSELL T. McFELL II
No. PE-065218

REVISIONS:

06-09-15 Landscpae Modifications
09-09-15 Pump Re-location, Landsc Modifications
09-29-15 Tank Re-location, Landsc Modifications

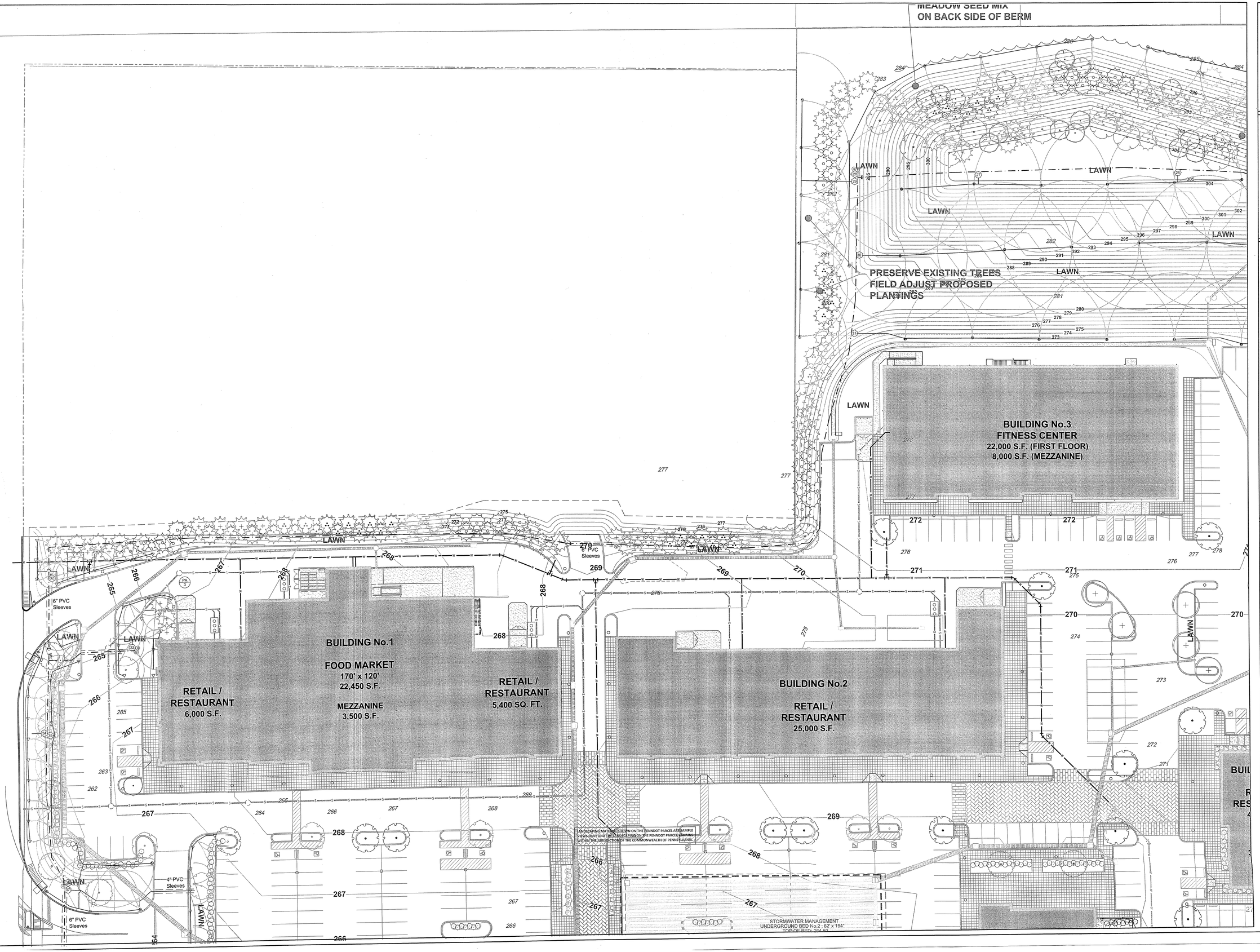
Project:

Center Square Commons

Post Construction
Stormwater Management
System

ENLARGED SE

Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: 1" = 30'	Sheet #: 28 of 38



AQUA MIST IRRIGATION

28 James Street
South Hackensack, NJ 07606

201-488-2057 NJ LIC # 15036

Project Title:

CENTER SQUARE COMMONS

WHITPAIN TOWNSHIP

Montgomery County Pennsylvania

Legend:

- Rainbird 5500 Rotary Head w/ # 12 Nozzle
- Rainbird 5004 Rotary Head w/ #4 Nozzle
- Rainbird 5004 Rotary Head w/ # 3 Nozzle
- Rainbird 5004 Rotary Head w/ # 2 Nozzle
- Rainbird 1800 Series Spray w/ 10' Nozzle
- Rainbird 1800 Series Spray w/ 12' Nozzle
- Rainbird 1800 Series Spray w/ 15' Nozzle
- Rainbird 1800 Series Spray w/ SST Nozzle
- Rainbird PESB Electric Valve w/Decoder
- Rainbird Pump Station
- Rainbird Site Control
- Rainbird Rain Sensor
- 4" Rainbird Flow Meter
- 4" Rainbird Master Valve
- Communication Cable in 1"conduit
- Class 200, SDR21 PVC Main Line size as noted
- 6" HDPE Main Line as noted
- 100psi Polyethylene Lateral Pipe
- Line Size Isolation Valve
- PVC Sleeves (size as noted)
- Blow out port

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
Robert T. McFALL II
NO. PE-067408

REVISIONS:

06-09-15 Landscpae Modifications
09-09-15 Pump Re-location, Landsc Modifications
09-29-15 Tank Re-location, Landsc Modifications

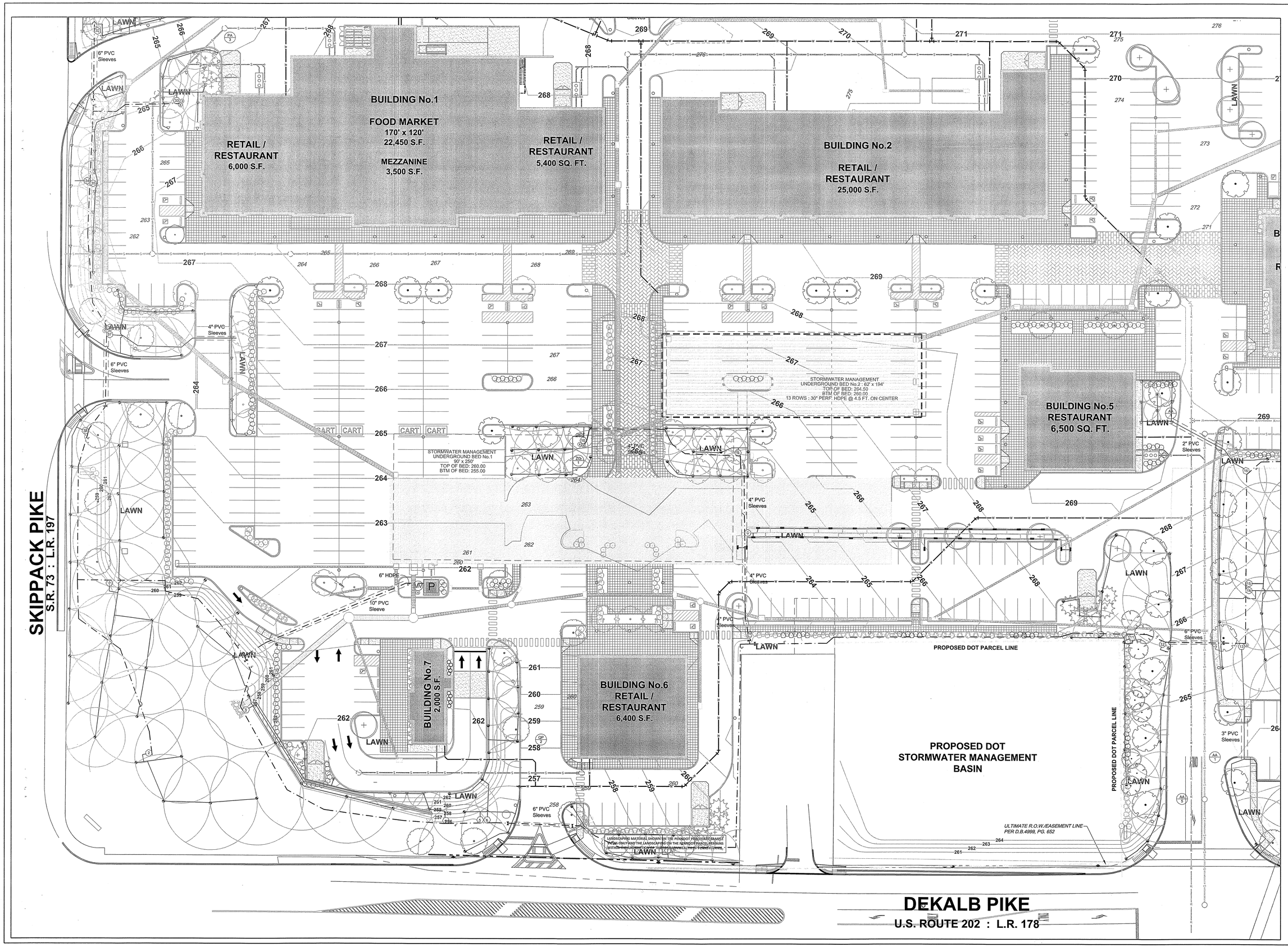
Project:

Center Square Commons

Post Construction
Stormwater Management
System

ENLARGED NE

Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: 1" = 30'	Sheet #: 29 of 38



AQUA MIST IRRIGATION

28 James Street
South Hackensack, NJ 07606

201-488-2057 NJ LIC # 15036

Project Title:

CENTER SQUARE COMMONS

WHITPAIN TOWNSHIP

Montgomery County Pennsylvania

Legend:

- Rainbird 5500 Rotary Head w/ # 12 Nozzle
- Rainbird 5004 Rotary Head w/ #4 Nozzle
- Rainbird 5004 Rotary Head w/ # 3 Nozzle
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- Rainbird 1800 Series Spray w/ 10' Nozzle
- Rainbird 1800 Series Spray w/ 12' Nozzle
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- Class 200, SDR21 PVC Main Line size as noted
- 6" HDPE Main Line as noted
- 100psi Polyethylene Lateral Pipe
- Line Size Isolation Valve
- PVC Sleeves (size as noted)
- Blow out port

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RUSSELL A. McFALL II
ENGINEER
NO. PE-043028

REVISIONS:

06-09-15 Landscpae Modifications
09-09-15 Pump Re-location, Landsc Modifications
09-29-15 Tank Re-location, Landsc Modifications

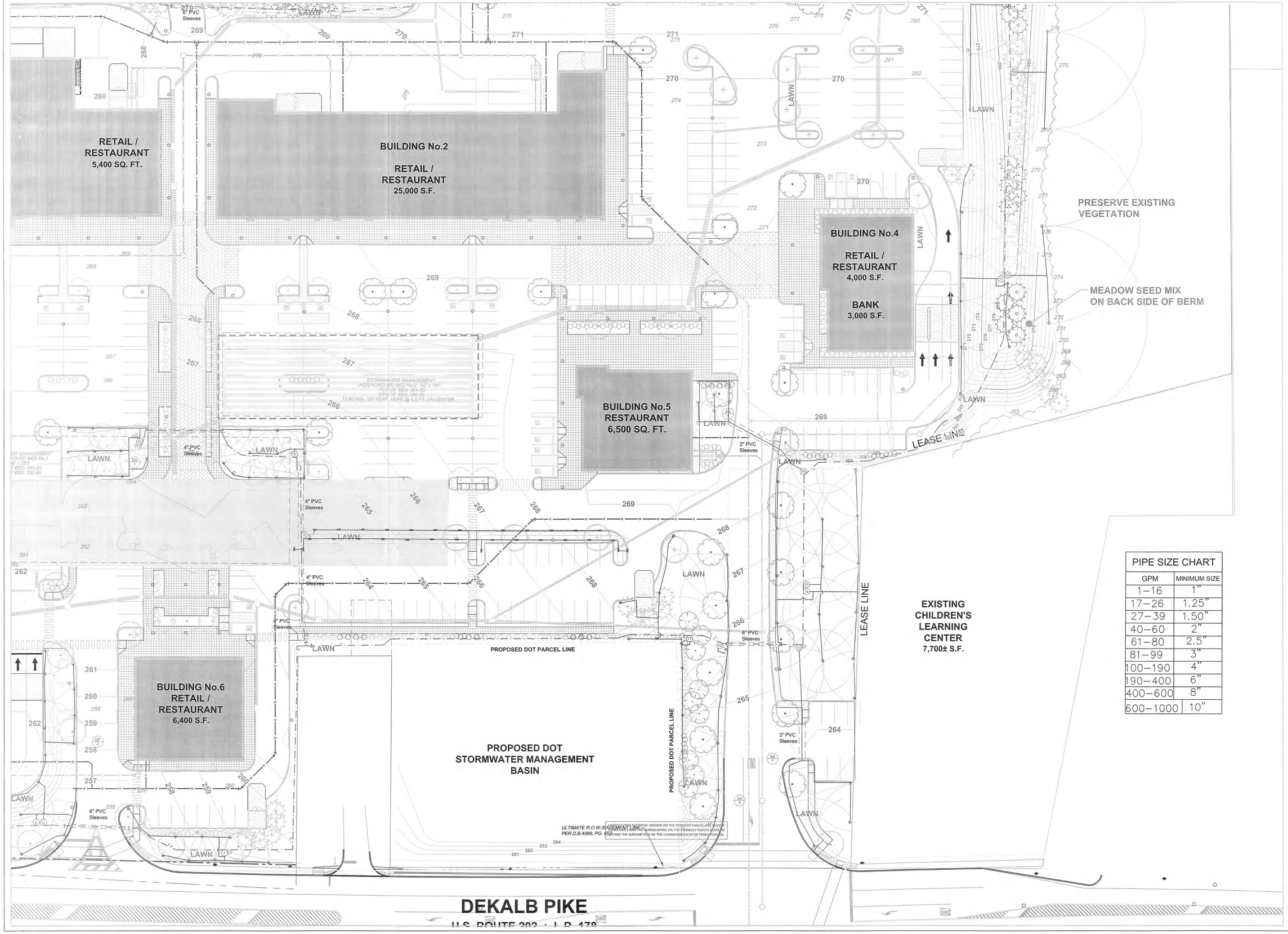
Project:

Center Square Commons

Post Construction Stormwater Management System

ENLARGED NW

Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: 1" = 30'	Sheet #: 30 of 38



PIPE SIZE CHART	
GPM	MINIMUM SIZE
1–16	1"
17–26	1.25"
27–39	1.50"
40–60	2"
61–80	2.5"
81–99	3"
100–190	4"
190–400	6"
400–600	8"
600–1000	10"

AQUA MIST IRRIGATION

28 James Street
South Hackensack, NJ 07606

201-488-2057 NJ LIC # 15036

Project Title:

CENTER SQUARE COMMONS

WHITPAIN TOWNSHIP

Montgomery County Pennsylvania

Legend:

- Rainbird 5500 Rotary Head w/ # 12 Nozzle
- Rainbird 5004 Rotary Head w/ #4 Nozzle
- Rainbird 5004 Rotary Head w/ # 3 Nozzle
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- Rainbird 1800 Series Spray w/ 10' Nozzle
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- Rainbird Site Control
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- 4" Rainbird Flow Meter
- 4" Rainbird Master Valve
- Communication Cable in 1"conduit
- Class 200, SDR21 PVC Main Line size as noted
- 6" HDPE Main Line as noted
- 100psi Polyethylene Lateral Pipe
- Line Size Isolation Valve
- PVC Sleeves (size as noted)
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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. McFALL II

REVISIONS:
06-09-15 Landscpae Modifications
09-09-15 Pump Re-location, Landsc Modifications
09-29-15 Tank Re-location, Landsc Modifications

Project:

Center Square Commons

Post Construction Stormwater Management System

ENLARGED SW

Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: 1" = 30'	Sheet #: 31 of 38

Chart # 1

5004 Series Rotary Heads @ 55 psi

Station	2	3	4	12	26	Total	AVG
	2.3	3.47	4.44	12.3	26.7		
1		10				10	
		34.70				34.70	3.47
2		10				10	
		34.70				34.70	3.47
3		9				9	
		31.23				31.23	3.47
5		4				4	
		13.88				13.88	3.47
6	12					12	
	27.60					27.60	2.30
7	11					11	
	25.30					25.30	2.30
9		11				11	
		38.17				38.17	3.47
10		11				11	
		38.17				38.17	3.47
11	4	6				10	
	9.20	20.82				30.02	3.00
12	3	7				10	
	6.90	24.29				31.19	3.12
13		3				3	
		10.41				10.41	3.47
14		12				12	
		41.64				41.64	3.47
15		4				4	
		13.88				13.88	3.47
17		6				6	
		20.82				20.82	3.47
18					2	2	
					53.40	53.40	26.70
19					2	2	
					53.40	53.40	26.70
20			5			5	
			22.20			22.20	4.44
21					2	2	
					53.40	53.40	26.70
22				4		4	
				49.20		49.20	12.30
23				4		4	
				49.20		49.20	12.30
24					2	2	
					53.40	53.40	26.70
25			7			7	
			31.08			31.08	4.44
26				3		3	
				36.90		36.90	12.30
27				3		3	
				36.90		36.90	12.30
28			7			7	
			31.08			31.08	4.44
29		6				6	
		20.82				20.82	3.47
30				3		3	
				36.90		36.90	12.30
31			6			6	
			17.76			17.76	4.44
36	6					6	
	20.82					20.82	3.47
38	12					12	
	41.64					41.64	3.47
						195	

Chart # 6

1800 Series Spray W/ MPR Nozzles @ 30psi

Station	10	12	15	50T	Total	AVG
	0.79	1.1	1.85	1.21		
4		8			8	
		7.80			7.80	0.98
8				30	30	
				48.40	48.40	1.61
16	2	6			8	
	1.58	13.20			14.68	1.59
31		12			12	
		7.40			7.40	0.62
32		9			9	
		16.65			16.65	1.85
33		14	4		18	
		7.40			7.40	0.41
34		11			11	
		20.35			20.35	1.85
35		14			14	
		25.90			25.90	1.85
37		5			5	
		14.45			17	1.85
					133	

Chart # 7

Pressure Loss Chart				Static Pressure		75
	Flow/GPM	Size	Length/ft	Multiplier	Loss/100'	Press Loss
Pump PSI						75.00
Main Line	300	6"	40	0.4	0.27	0.11
Main Line	150	4"	1880	18.8	0.49	9.21
Loss						9.32
Dynamic Pressure at Station # 24						65.68
Pump PSI						75.00
Main Line	300	6"	40	0.4	0.27	0.11
Main Line	150	4"	1360	13.6	0.49	6.66
Loss						6.77
Dynamic Pressure at Station # 28						68.23

GENERAL PCSM / IRRIGATION:

System will be active from March 15th to November 15th

WARRANTY & MAINTENANCE:

1. CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN GOOD OPERATING CONDITION AND COORDINATE THE OPERATION OF THE SYSTEM WITH THE ON SITE MANAGER THROUGH MONTHLY INSPECTIONS OF SYSTEM COMPONENTS AND MAKE REPAIRS OR REPLACEMENTS OF PARTS AS NECESSARY. THIS INCLUDES CHECKING AND VERIFYING OPERATION IN EACH STATION, ALIGNMENT OF HEADS, RAIN SENSORS, FREEZE SENSOR AND CENTRAL CONTROL.

WINTERIZATION:

WHEN COLD WEATHER APPROACHES AND CHANCE FOR FREEZING CONDITIONS EXIST, THE IRRIGATION SYSTEM SHALL BE DRAINED AFTER EACH USE

WINTERIZATION PROCEDURE SHALL INCLUDE THE FOLLOWING:

1. OPERATE SYSTEM TO DRAIN BASINS TO LOWEST POSSIBLE LEVEL
2. BLOW OUT EACH STATION TWICE WITH COMPRESSED AIR.
3. CLOSE DISCHARGE VALVE AT PUMP
4. OPEN WINTER BYPASS VALVE TO OUTFLOW STRUCTURE
5. SET INTERNAL HEATER FOR PUMP ENCLOSURE
6. ACTIVATE WINTER PROGRAM ON SITE CONTROL

SPRING START UP:

1. OPEN SPRING GATE VALVES
2. CHECK POND LEVEL SENSORS
3. SLOWLY FILL MAIN LINE
4. CHECK FOR LEAKS AND PROPER ALIGNMENT OF HEADS
5. REPAIR AND ADJUST SYSTEM AS REQUIRED FOR PROPER OPERATION

NO FAULT REPAIR AND CORRECTION:

NO FAULT REPAIR AND CORRECTION WORK SHALL CONSIST OF WORK TO CORRECT FAULTS OR REPAIR DAMAGE EXISTING THROUGH NO FAULT OF THE CONTRACTOR BUT WHICH IS NECESSARY FOR THE CONTINUED PROPER MAINTENANCE AND OPERATION OF THE IRRIGATION SYSTEM INCLUDING CORRECTION OF SPRINKLER SYSTEM. NO FAULT REPAIR AND CORRECTION SHALL NOT INCLUDE WORK AS OTHERWISE DEFINED WITHIN THE SCOPE OF WARRANTY. THE OWNER WILL AGREE TO PAY FOR THESE REPAIRS.THE SYSTEM AND ALL IT'S COMPONENTS ARE GUARANTEED FOR ONE (1) YEAR FROM INSTALLATION.

Chart # 2

Station #	Zone #	Head Type	Flow	Run Time	Gals/Cycle
1	1	5004 Rotary	34.70	23	798.10
2	1	5004 Rotary	17.35	23	399.05
3	1	5004 Rotary	38.17	23	877.91
5	1	5004 Rotary	13.88	23	319.24
6	1	5004 Rotary	27.60	23	634.80
7	1	5004 Rotary	25.30	23	581.90
9	1	5004 Rotary	38.17	23	877.91
10	1	5004 Rotary	38.17	23	877.91
11	1	5004 Rotary	30.02	23	690.46
12	1	5004 Rotary	31.19	23	717.37
13	1	5004 Rotary	10.41	23	239.43
14	1	5004 Rotary	41.64	23	957.72
15	1	5004 Rotary	13.88	23	319.24
16	1	5004 Rotary	20.82	23	478.86
18	1	5004 Rotary	41.64	23	957.72
					9,727.62

Station #	Zone #	Head Type	Flow	Run Time	Gals/Cycle
3	1	1800 Spray	7.80	10	78.00
8	1	1800 Spray	48.40	10	484.00
16	1	1800 Spray	12.68	5	63.40
31	1	1800 Spray	7.40	10	74.00
32	1	1800 Spray	16.65	10	166.50
33	1	1800 Spray	7.40	10	74.00
34	1	1800 Spray	20.35	10	203.50
35	1	1800 Spray	25.90	10	259.00
37	1	1800 Spray	17.00	10	170.00
					1,572.40
TOTAL	1				11,300.02

	Zone #	Head Type	Flow	Run Time	Gals/Cycle
17	2	5004 Rotary	20.82	15	312.30
18	2	8005 Rotary	53.40	11	587.40
19	2	8005 Rotary	53.40	11	587.40
20	2	5500 Rotary	22.20	15	333.00
21	2	8005 Rotary	53.40	11	587.40
22	2	5500 Rotary	49.20	15	738.00
23	2	5500 Rotary	49.20	15	738.00
24	2	8005 Rotary	53.40	12	640.80
25	2	5500 Rotary	31.08	15	466.20
26	2	8005 Rotary	53.40	11	587.40
27	2	8005 Rotary	53.40	11	587.40
28	2	5500 Rotary	31.08	15	466.20
29	2	5004 Rotary	20.82	15	312.30
30	2	5500 Rotary	36.90	15	553.50
31	2	5500 Rotary	17.76	15	266.40
TOTAL	2				7,763.70

Chart # 3

SPRAY IRRGATION DESIGN
Center Square Commons — Zone 1

STORM INFORMATION		ACRE FT	CUBIC FT	GALLONS
VOLUME TO BE IRRIGATED:	REQUIRED	1.607	70,000.00	523,600.00
7 Days	PROVIDED	0.485	21,148.77	158,250
	1 ACRE FT=	325,900 Gallons	1 CUBIC FT =	7.48 GALLONS

DOSAGE INFORMATION			Cycle & Soak	
NO. OF DOSES =		3	2	
VOLUME PER CYCLE =		11,300.02	22,600.04	
PROVIDED RATE OF IRRIGATION =		18,000 GAL / HR	18,000 GAL / HR	
TOTAL REQUIRED HOURS OF IRRIGATION =		0.63	1.26	
MAX RATE OF IRRIGATION (ET) =	IN/DAY	ACRE INCH	SQ FT /ACRE	GAL / SF / HR
	0.5	27,154	43,560	0.31
SEASONAL SCHEDULE	MARCH 15TH TO NOVEMBER 15TH			

ZONE	LENGTH OF DOSE HOUR	MINUTES	TIME OF DAY FOR DOSING		CYCLE & SOAK WAIT TIME
1		37	1:00 AM	1:37 AM	4 Hours
1		37	5:00 AM	5:37 AM	
DAILY DOSAGE:	22,600.04 GALLONS		DAILY RUN TIME:	4.63 HOURS	

SOIL INFORMATION:
SOIL TYPE:

MAXIMUM RATE OF IRRIGATION:

ZONE	ABSORPTION AREA PROVIDED FOR IRRIGATION SQ FT	MAX ALLOWABLE RATE OF IRRIGATION BASED ON ABSRPTION AREA PROVIDED GAL / DAY
1	96,573.00	30,723.73
PROVIDED	96,573.00	30,723.73

ZONE	TOTAL # OF SPRINKLERS	REQUIRED FLOW GPM	PROVIDED IRRIGATION RATE BASED ON SPRINKLER DESIGN GAL / DAY	PERCENT OF MAXIMUM ALLOWABLE IRRIGATION RATE
1	171	300	22,600.04	73.6%
PROVIDED				

Total Square Feet:	96,573.00	Total Gallons Per Day:	22,600.04	Inches Per Day:	0.368
		Cu Ft per Day:	3,021.40		

Chart # 4

SPRAY IRRGATION DESIGN
Center Square Commons — Zone 2

STORM INFORMATION		ACRE FT	CUBIC FT	GALLONS
VOLUME TO BE IRRIGATED:	REQUIRED	1.734	75,545.00	565,076.60
7 Days	PROVIDED	1.167	50,858.46	380,421
	1 ACRE FT=	325,900 Gallons	1 CUBIC FT =	7.48 GALLONS

DOSAGE INFORMATION			Cycle & Soak	
NO. OF DOSES =		1	2	
VOLUME PER CYCLE =		7,763.70	54,345.90	
PROVIDED RATE OF IRRIGATION =		18,000 GAL / HR	18,000 GAL / HR	
TOTAL REQUIRED HOURS OF IRRIGATION =		0.43	3.02	
MAX RATE OF IRRIGATION (ET) =	IN/DAY	ACRE INCH	SQ FT /ACRE	GAL / SF / HR
	0.5	27,154	43,560	0.31
SEASONAL SCHEDULE	MARCH 15TH TO NOVEMBER 15TH			

ZONE	LENGTH OF DOSE HOUR	MINUTES	TIME OF DAY FOR DOSING		CYCLE & SOAK WAIT TIME
2		25	9:00 PM	9:25 PM	2 Hours
2		25	11:00 PM	11:25 PM	2 Hours
2		25	1:00 AM	1:25 AM	2 Hours
2		25	3:00 AM	3:25 AM	2 Hours
2		25	5:00 AM	5:25 AM	2 Hours
2		25	7:00 AM	7:25 AM	2 Hours
2		25	9:00 AM	9:25 AM	
DAILY DOSAGE:	54,345.90 GALLONS		DAILY RUN TIME:	4.43 HOURS	

SOIL INFORMATION:
SOIL TYPE:

MAXIMUM RATE OF IRRIGATION:

ZONE	ABSORPTION AREA PROVIDED FOR IRRIGATION SQ FT	MAX ALLOWABLE RATE OF IRRIGATION BASED ON ABSRPTION AREA PROVIDED GAL / DAY
1	175,408.00	54,672.05
PROVIDED	175,408.00	54,672.05

ZONE	TOTAL # OF SPRINKLERS	REQUIRED FLOW GPM	PROVIDED IRRIGATION RATE BASED ON SPRINKLER DESIGN GAL / DAY	PERCENT OF MAXIMUM ALLOWABLE IRRIGATION RATE
1	137	300	54,345.90	99.4%
PROVIDED				

Total Square Feet:	175,408.00	Total Gallons Per Day:	54,345.90	Inches Per Day:	0.497
		Cu Ft per Day:	7,265.40		

Chart # 5

SPRAY IRRGATION DESIGN
Center Square Commons — Summary

STORM INFORMATION		ACRE FT	CUBIC FT	GALLONS
VOLUME TO BE IRRIGATED:	REQUIRED	1.653	72,000.00	538,560.00
7 Days	PROVIDED	1.653	72,006.23	538,621.58
	1 ACRE FT=	325,900 Gallons	1 CUBIC FT =	7.48 GALLONS

DOSAGE INFORMATION			Cycle & Soak	
NO. OF DOSES =		1	2	3
VOLUME PER CYCLE =		19,663.72	38,127.44	38,828.50
PROVIDED RATE OF IRRIGATION =		18,000 GAL / HR	18,000 GAL / HR	
TOTAL REQUIRED HOURS OF IRRIGATION =		1.06	2.12	76,945.94
MAX RATE OF IRRIGATION (ET) =	IN/DAY	ACRE INCH	SQ FT /ACRE	GAL / SF / HR
	0.5	27,154	43,560	0.31
SEASONAL SCHEDULE	MARCH 15TH TO NOVEMBER 15TH			

ZONE	LENGTH OF DOSE HOUR	MINUTES	TIME OF DAY FOR DOSING		CYCLE & SOAK WAIT TIME
2		25	9:00 PM	9:25 AM	2 Hours
2		25	11:00 PM	11:25 AM	2 Hours
1 & 2	1	2	1:00 AM	2:02 AM	2 Hours
2		25	3:00AM	3:25 AM	2 Hours
1 & 2	1	2	5:00 AM	6:02 AM	2 Hours
2		25	7:00 AM	7:25 AM	2 Hours
2		25	9:00 AM	9:25 AM	
DAILY DOSAGE:	38,127.44 GALLONS		DAILY RUN TIME:	12.06 HOURS	

SOIL INFORMATION:
SOIL TYPE:

MAXIMUM RATE OF IRRIGATION:

ZONE	ABSORPTION AREA PROVIDED FOR IRRIGATION SQ FT	MAX ALLOWABLE RATE OF IRRIGATION BASED ON ABSRPTION AREA PROVIDED GAL / DAY
1	86,573.00	30,723.73
2	175,408.00	54,672.05
PROVIDED	273,981.00	85,395.78

ZONE	TOTAL # OF SPRINKLERS	REQUIRED FLOW GPM	PROVIDED IRRIGATION RATE BASED ON SPRINKLER DESIGN GAL / DAY	PERCENT OF MAXIMUM ALLOWABLE IRRIGATION RATE
1	308	300	76,945.94	90.1%
PROVIDED				

Total Square Feet:	273,981.00	Total Gallons Per Day:	76,945.94	Inches Per Day:	0.451
		Cu Ft per Day:	10,286.89		

Chart # 8

PIPE SIZE CHART	
GPM	MINIMUM SIZE
1-16	1"
17-26	1.25"
27-39	1.50"
40-60	2"
61-80	2.5"
81-99	3"
100-190	4"
190-400	6"
400-600	8"
600-1000	10"

PCSM/Irrigation Spray Construction Sequence:

Contractor Shall make themselves familiar with all aspects of the construction of the PCSM system.
Prior to any trenching construction or installation, the Contractor shall flag out area to ensure the best location of pipe, sprinkler heads, valves, etc.
Any deviations in layout shall be brought to the Owners representative before proceeding.
The Contractor is expected to make minor adjustments of wire, pipe and valve locations as to not conflict with existing or future utilities.
Irrigation Sequence:
Installation of wet well and intake pipe and Screen
Installation of Pump Station
Installation of Road and Parking lot Sleeves
Installation of Main line, Valves and Communication Cable
Installation of Central Control System and Sensors
Installation of Lateral Lines
Installation of Sprinkler Heads
Testing of System
Adjustment of all sprinkler heads
Decoder Test
Flow Sensor Test
Completion of As-Built Drawings
Contact the Lehigh County Conservation District as to any changes in the Spray System and supply the LCCD with As-Built and impact of changes.

General Notes:

Contractor to provide 110v electric supply and Internet access to the Central Computer.

The Site Control Central Computer is installed in Pump House

Rainbird Site Control to be installed in order to complete the necessary communication and interaction between the pump station, pond level, and seasonal water schedule, or approved equal.
All Communication cable shall be installed in 1" PVC Conduit

All irrigation equipment to have Purple covers (non potable) Heads,Valve box covers, etc...

RAINBIRD SITE CONTROL:

THE INTERACTIVE CENTRAL CONTROL SYSTEM FOR LANDSCAPE VIA A 2 WIRE PATH AND DECODERS.

SMART SENSORS:

ALLOWS USE OF PULSE (FLOW) AND STATIC/SWITCH SENSORS TO MONITOR, ALARM AND TAKE ACTION ON MEASURED CONDITIONS

RAIN WATCH:

USES TIPPING BUCKET RAIN CAN TO DETECT AND SUSPEND IRRIGATION WHILE MEASURING RAINFALL.

FREEZE SENSOR:

WILL ACTIVATE OR DEACTIVATE SYSTEM AS PER SPECIFIED BY USER

DECODER HARDWARE:

LARGE DECODER INTERFACE (LDI) OR APPROVED EQUAL, SHALL SERVE AS AN INTERFACE BETWEEN THE CENTRAL CONTROLLER AND THE FIELD AND SENSOR DECODERS.
LDI CAN INTERFACE WITH UP TO 500 DECODER ADDRESSES AND CAN ACTIVATE UP TO 1000 SOLENOIDS.

LDI COMES WITH STANDARD TERMINALS FOR 4 WIRE PATHS

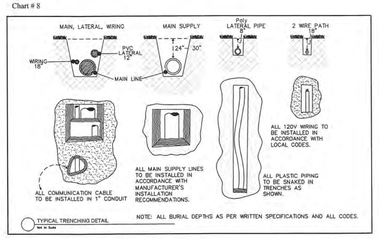
LDI SHALL BE GROUNDED TO LESS THAN 5 OHMS

WINTER PROGRAM:
CENTRAL CONTROL SYSTEM SHALL BE CAPABLE OF OPERATING DURING WINTER MONTHS
WINTER PROGRAM SHALL CONSIST OF THE FOLLOWING:
DEACTIVATE RAIN SENSOR
IF THE CONDITION EXISTS THAT THE LEVEL OF THE BASIN HAS RISEN TO ABOVE PERMANENT POOL LEVEL, THE PUMP WILL ACTIVATE AND UTILIZING THE WINTER BYPASS VALVE AND LINE TO DISBURSE THE EXCESS WATER TO THE OUTFLOW STRUCTURE ASSOCIATED WITH EACH PUMP STATION
THIS ACTION WILL BE ACTIVATED BY THE TRANSDUCER IN THE WET WELL MONITORING THE PERMANENT POOL LEVEL

When required, Pressure Regulated Electric Valves will be installed to insure that the stations operate at the desired pressure

All Rotary stations to operate at 65psi
All Spray stations to operate at 30psi

Chart # 8



Main Line & Lateral Notes:

10" PVC Main Line Depth of Burial:36"
8" PVC Main Line Depth of Burial: 36"
6" PVC Main Line Depth of Burial: 30"
4" PVC Main Line Depth of Burial: 28"
3" PVC Main Line Depth of Burial: 24"
2" - 2.5" PVC Main Line Depth of Burial: 24"
1.5" PVC Lateral Line Depth of Burial: 12"
All Polyethylene Lateral Lines Depth of Burial: 8"

Chart # 9

Hydraulic Datasheet

Customer: Lehigh Valley Hospital Network	: Rain Bird Corporation	Pump / Stages	: 10ELM / 6
Customer: Aqua Mist Irrigation	: Default	Based on curve no.	: IEC-2367
Item number	: -	Flowserve reference	: Default 0.1
Service	: -	Date	: October 14, 2012

Operating Conditions

Capacity	: 300.0 USgpm
Water capacity (CQ=1.00)	: -
Normal capacity	: -
Total Developed Head	: 300.00 ft
Water head (CH=1.00)	: -
NPSH available (NPSHa)	: Ample
NPSHa less NPSH margin	: -
Maximum suction pressure	: Not applicable
Rated suction pressure	: Not applicable

Liquid

Liquid type	: Other
Liquid description	:
Temperature / Spec. Gravity	: 60 F / 1.000
Viscosity / Vapor pressure	: 1.0 cSt / -

Materials / Specification

Material column code	: B30

Other Requirements

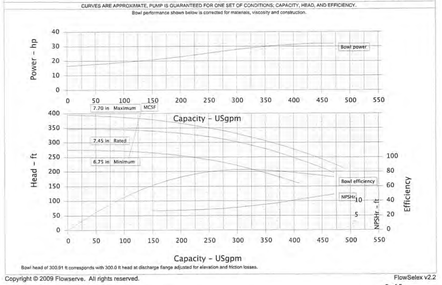
Hydraulic selection : No specification
Construction : No specification
Test tolerance : Hydraulic Institute Level A
Driver Sizing : Max Power(MCSF to EOC)with SF

Performance

Pump speed	: 1775 rpm	Impeller diameter	: Rated / Maximum / Minimum
NPSH required (NPSHr)	: 7.1 ft		: 7.45 in / 7.70 in / 6.75 in
Minimum submergence	: 21.00 in	Impeller dia ratio (rated/max)	: 96.8 %
Hydraulic power	: 22.8 hp	Maximum head @ rated dia	: 347.90 ft
Efficiency (CE=1.00)	: 82.2 %	Head rise to shut off	: 15.6 %
Power: (Rated / Max)	: 27.7 hp / 32.8 hp	Total head ratio (rated/max)	: 91.3 %
Driver power	: 40.0 hp / 29.8 kW	Flow at BEP	: 313.6 USgpm
Bowl Pressure	: 150.6 psig	Flow as % of BEP	: 95.7 %
(based on shut off and Rated specific gravity @ Cut dia)		Minimum continuous flow	: 122.4 USgpm
Maximum allowable	: 175.0 psig	Suction specific speed	: 7050 US units
Bowl & column hydrotest	: 195.4 psig	Rated thrust (at Rated flow)	: 921.5 lbf
Dischg Head Dischg Region MAWP	: 175.0 psig	Maximum thrust (at Shut off flow)	: 1046.1 lbf
		Minimum thrust (at Runout flow)	: 633.3 lbf

(A negative thrust value indicates an upthrust condition)

CURVES ARE APPROXIMATE. PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS: CAPACITY, HEAD, AND EFFICIENCY.
Bowl performance shown below is corrected for materials, viscosity and construction.



Bowl head of 300.91 ft corresponds with 300.0 ft head at discharge flange adjusted for elevation and friction losses.

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FlowSelex v2.2
2 of 5

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AQUA MIST IRRIGATION

28 James Street
South Hackensack, NJ 07606

201-488-2057 NJ LIC # 15036

Project Title:

CENTER SQUARE COMMONS

WHITPAIN TOWNSHIP

Montgomery County Pennsylvania

Legend:

- Rainbird 5500 Rotary Head w/ # 12 Nozzle
- Rainbird 5004 Rotary Head w/ #4 Nozzle
- Rainbird 5004 Rotary Head w/ # 3 Nozzle
- Rainbird 5004 Rotary Head w/ # 2 Nozzle
- Rainbird 1800 Series Spray w/ 10' Nozzle
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- Rainbird 1800 Series Spray w/ 15' Nozzle
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- Rainbird Pump Station
- Rainbird Site Control
- Rainbird Rain Sensor
- 4" Rainbird Flow Meter
- 4" Rainbird Master Valve
- Communication Cable in 1"conduit
- Class 200, SDR21 PVC Main Line size as noted
- 100psi Polyethylene Lateral Pipe
- Line Size Isolation Valve
- PVC Sleeves (size as noted)
- Blow out port

REVISIONS:
06-09-15 Landscape Modifications
09-09-15 Volume Correction
09-29-15 Re-Size Drawing

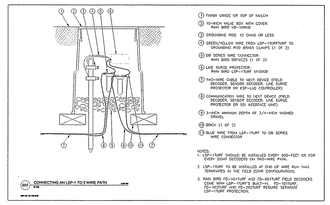
Project:

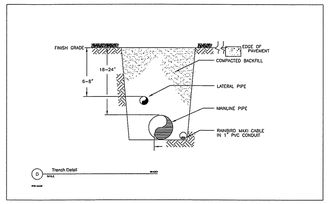
Center Square Commons

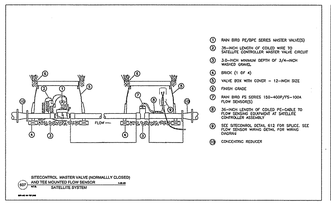
Post Construction Stormwater Management System

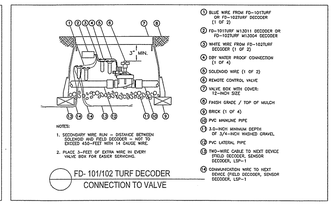
Data & Details

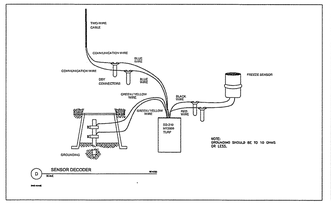
Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: NTS	Sheet #: 32 of 38

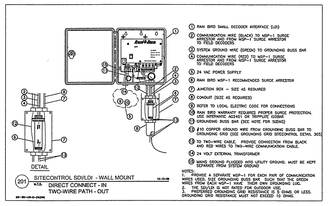


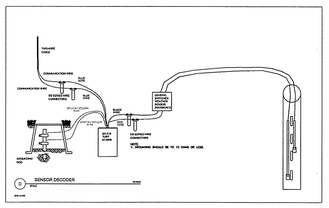


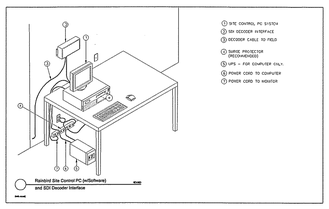


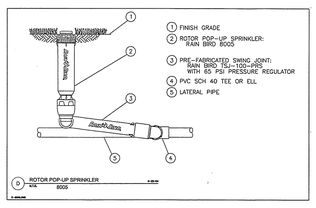












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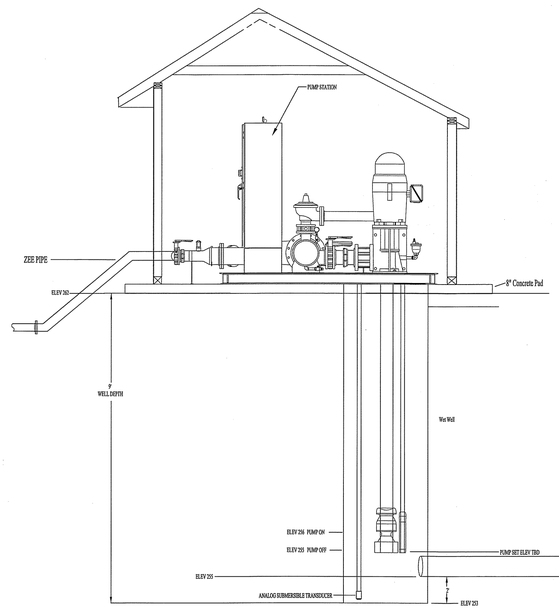

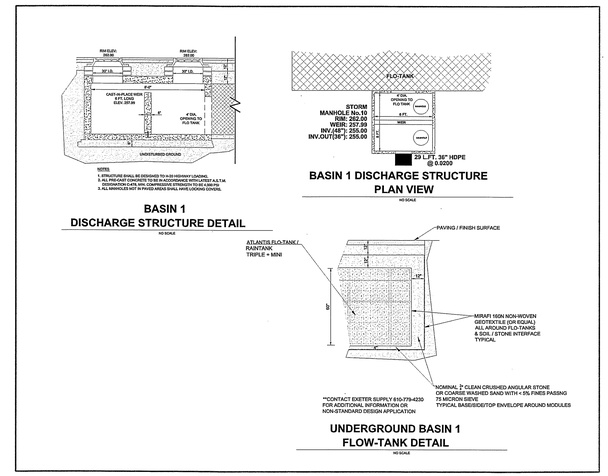

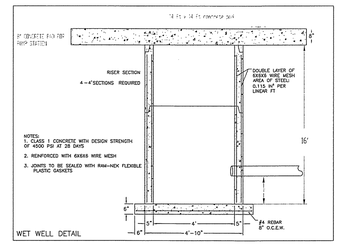

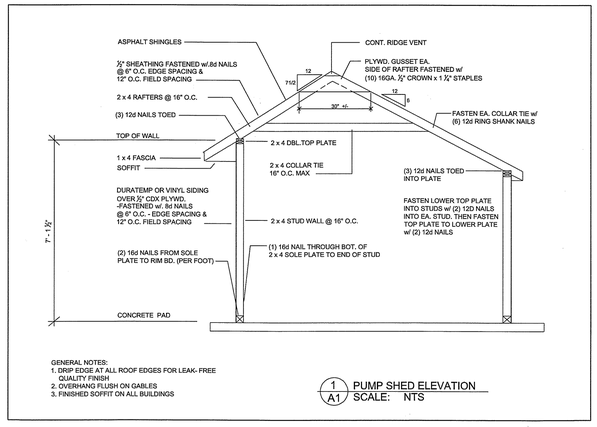

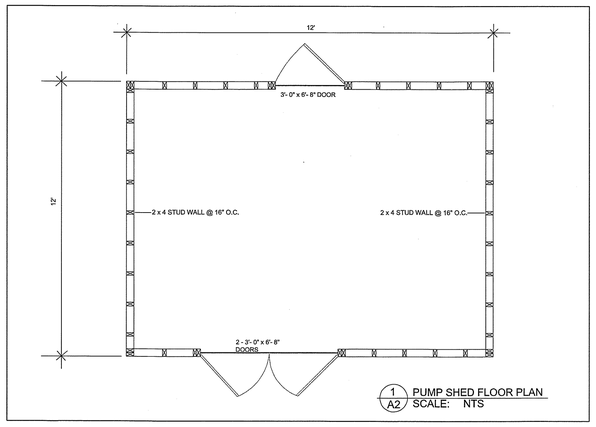

AQUA MIST IRRIGATION

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REVISIONS:
09-09-15 Pump Re-Location
09-29-15 Re-Size Drawing

Project:

Center Square Commons

Post Construction Stormwater Management System

Pump & Details

Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: NTS	Sheet #: 33 of 38

OPERATIONS AND MAINTENANCE SCHEDULE:

Page 1

- STORMWATER SPRAY IRRIGATION

The contractor's shall ensure the spray irrigation is in working order and remains so for the period of time specified in the Maintenance Agreement. Following the maintenance agreement period the owner shall contract with a qualified irrigation contractor to provide preventative maintenance, seasonal maintenance, and annual reporting. Maintenance practices include, but are not limited to the following:

1. The contractor shall visit the site once a month for the first season of operation following Final Acceptance. The contractor shall monitor the system, balance the system to function per the performance specification, provide maintenance and repair. He shall also provide on-site consultation with the Owner's operating personnel and assist in submitting the required reports to the Conservation District and DEP.
2. Prior to beginning installation, written Maintenance Agreement with Owner for period specified in said Agreement from date of Final Acceptance for the following:
   a. Costs for additional work required for repair of items not covered by warranty shall be negotiated between Owner and Contractor prior to initiation of any repairs.
   b. Costs for the Maintenance Agreement are over and above Contract Sum, and shall not be included in construction price. Payment for extended maintenance by Owner shall occur upon completion of scheduled service and additional work, if any, as it occurs on monthly basis throughout duration of the Maintenance Agreement.
3. Flushing
   a. Schedule
      1) Every 2 weeks for first 6 weeks
      2) Spring startup
      3) Every 2 months
      4) Following any repairs
   b. Flush until exiting water is clean
      1) If after a reasonable period of time water remains unclean determine source of contaminants and remediate
      2) Re-flush until water is clean
   c. Following flushing operation pressure at end of runs to assure the pressure is within normal operating range. If pressure is outside of normal operating ranges remediate condition.
4. Pump Station: The pump station shall be maintained per the manufacture's requirements. The following information is the "Rainbird -

Page 2

pump station user manual - section 5.1 preventative maintenance schedule." It represents an example of the requirements for pump station operation and maintenance. The actual requirements to be used shall be based on the specific requirements for the pump station installed.

5.1 PREVENTATIVE MAINTENANCE SCHEDULE

Warning: the following preventative maintenance items should only be performed by a service provider trained to repair and maintain electrical and rotating equipment.

Caution: immediately remove rust and corrosion from damaged areas and apply touch up paint in accordance with the powder coating touch-up procedure.
Failure to do so will result in reduced service life and possible unsafe conditions.

1. 90 days following initial pump station start-up:
   a. De-energize the pump station and check tight all terminal connections and all plumbing connections.
   b. Remove any debris from control panel interior.
2. Daily: perform a cursory visual inspection of the pump station/pump house.
3. Weekly: perform a detailed visual inspection of the pump station/pump house.
4. Monthly tasks:
   a. Check condition and security of all installed equipment.
   b. Check for leaks and blockage of drain lines and control tubes.
   c. Check for signs of rust and corrosion.
   d. Check for any alarm conditions.
   e. Wash down pump station skid and piping (do not wash down pump station motors or other electrical components).
   f. Vacuum control panel interior.
5. Semi-annual tasks:
   a. De-energize the pump station and check tight all terminal connections and all plumbingconnections.
   b. Clear control panel heat exchanger and heat exchanger intake and discharge lines with compressed air.
   c. Clean all y-strainers (heat exchanger, prv, self-cleaning intake flush line, etc).
   d. Change oil on vertical hollow-shaft motors.
   e. Clear vertical turbine wet-well return/drain lines with compressed air.
   f. Clean and inspect pressure transducer. Remove and clear the pressure transducer hydraulic signal line with

Page 3

compressed air.
   g. Apply power to station.
   h. Check status of surge arrestors. (Led's should be illuminated)
   i. Check packing gland for proper bleed rate on vertical turbine pumps equipped with mechanical seals).
   j. Verify pump motor ampere draws closely match nameplate
   k. Flow test station up to design flow rate and back to zero. Ensure pumps start/stop in sequence properly.
6. Annually:
   a. Perform the motor insulation test procedure on all pump motors. Record the values and keep record that allows year-to-year comparison.
   b. On pump stations equipped with automatic filtration:
      1) Close the main inlet/discharge isolation valve(s).
      2) De-energize and de-pressurize the pump station.
      3) Remove and power wash each filter screen.
      4) Inspect the filter components in accordance with the filter's manufacturer recommendations.
   c. Verify individual pump performance at specified duty point against pump curve.
   d. Install a rebuild kit on the prv and adjust relief set-point to 110% of system operating pressure.
   e. Inspect all contactors and relays. (power off)
   f. Inspect and tighten all electrical terminals and lugs. (power off)

Caution: do not store anything (equipment, rotors, painting supplies, food, clothing, etc.) on the pump station piping, skid or control panel. Stored items on the pump station may cause or contribute to corrosion and is a safety hazard.

Note: the above schedule outlines the minimum required maintenance to ensure a long service life and reliable performance. Additional inspections and more frequent cleaning cycles may be necessary depending on the water quality or as desired.

5. Control Valves:
   a. Control valves shall be inspected as part of preventative - scheduled maintenance, winterization and start up.
   b. Check for water puddles on the surface which may indicate that a drain is stuck in an open position. If so determined repair and or replace as necessary. Automatic control valves shall be repaired only by properly trained personnel.
6. Sprinkler Heads:

Page 4

   a. Visually inspect operation of sprinkler heads. Assure uniform distribution and proper range of motion.
   b. Common cause of issues
      1) Foreign objects in water - remove through flushing and cleaning.
      2) Oil or pipe dope - do not use oil, grease or pipe dope. Remove any of these items previously used. Use Teflon tape on connections.
      3) Improper pressure - check per manufacture's specifications.
      4) Damaged parts - repair or replace as necessary. Note that repairs to sprinkler heads should only be made by trained personnel. including:
         a) Broken arm spring
         b) Worn bearing or wear washers
         c) Worn bearings
         d) Trip mechanism on part circle models
   c. Reset part circle friction collars as necessary to provide proper coverage and prevent overspray into undesirable or unnecessary areas.
   d. If visual observation indicates water puddles or non-uniform application perform a calibration test (sometime referred to as a can or cup test) to verify that loading is uniform. Make necessary adjustments as necessary.
7. Scheduled maintenance - periodic maintenance shall be undertaken during operation. This should be done a minimum of 4 weeks after start-up and 8 weeks thereafter. This schedule should be modified based on climate and past operational conditions. This should include but not be limited to the following:
   a. Visual observation of all system components as mentioned above.
   b. Cleaning of intake and inline screens, filters, etc.
   c. Flushing of system
   d. Pressure tests as necessary
   e. Adjustment of sprinkler head coverage, pressures duration of application, etc.
   f. Repair and replace damaged components.
   g. Review of system operation reports to determine if permit requirements are being meet.
8. Repairs - following all repairs:
   a. Flush system.
   b. Check pressures on repaired line.
   c. Review operation and inspect all zones during operation.
   d. Make additional repairs as necessary.
9. Winterization - following the annual operating cycle, October 15th and

Page 5

before freezing temperatures winterize the system.
   a. Comply with manufacturer's instructions.
   b. Winterize the pump station per the winterization procedures in the manufacturers - pump station manual.
   c. Include valves, filters, backflow preventers, lines, emitters, etc.
   d. Blow out lines with compressed air. This includes sprinkler, drip and controlled application lines.
      1) Caution - do not exceed manufacturer's pressure limits. Check limits for all components.
      2) Close mainline shut-off valve.
      3) Relieve pressure by opening control valve.
      4) Slowly open all flush valves and drain ports on the mainline.
      5) Apply compressed air, gradually increase flow until no water exits ports. a compressor capable of producing 10 to 25 cfm of air volume with a pressure relief valve to assure pressure does not exceed manufacturer's limits shall be used.
      6) Limit time compressed air is applied to the manufacturer's requirements to prevent damage to system, use of a timer is recommended.
      7) Repeat this procedure on the each individual zone control valve. Start at farthest zone from air connection. Assure that at least one zone control valve is open while there is air flow from the compressor.
      8) All valves must be winterized using blown compressed air to remove water.
      9) To ensure the system is adequately drained, repeat this cycle 2 or more times until there is no longer any water flow.
      10) Manual valves and solenoids shall be left in open position throughout non- operating period.
   e. Winter Bypass
      1) After System has been winterized, open 4" gate valve to manually drain basin to outflow structure
   f. File the necessary reports on compliance of operation with the appropriate jurisdictional authorities (PADEP, County Conservation District, and Municipality).
10. Spring Startup
   a. Remove foreign material and debris from the irrigation system:
      1) Clean and/or replace screens, filters, etc. on intake lines and in-line per manufacturer's requirements.
      2) Flush lines per procedures in flushing section.

Page 6

   b. Sprinkler Heads
      1) Check clearance around each head
      2) Check to assure heads properly circulate
      3) Replace damaged nozzles (cracked, chipped, worn, etc.)
      4) Check application rates - see manufactures information on can/cup test.
   c. Valves
      1) Visually inspect operation of each valve
      2) Check any surface areas that appear to be overly wet.
   d. Controller (in addition to spring start-up check after each power outage)
      1) Re-program controller if settings were lost. check all settings
      2) Run through all cycles
      3) Check and replace back-up battery as necessary
   e. Pump Station
      1) Perform pump station annual maintenance per requirements above.
      2) Check and record operational criteria and compare to design criteria.
      3) If not within normal operating ranges, perform repair or replacement as necessary to operate within the design criteria.

F. Landscaping:

Inspect seeded areas for failure and if repairs or reseeding are necessary, do them immediately. Re-inspect the seeded areas after a year.

If an area is covered less than 70 percent, reevaluate the choice of plant materials and the quantities of lime and fertilizer used. Reestablish the stand after the seedbed is prepared. Follow the recommendations, and do not use lime and fertilizer if the results of a soil test are not available. If the season prevents re-sowing, mulch or erosion netting is an effective temporary cover. Contractors should be held responsible for meeting performance guarantee.

G. Outlet Structures:

The outlet structures should be inspected after heavy rains to see if any erosion around or below the structure has taken place or if stones have been dislodged. All needed repairs should be performed immediately to prevent further damage.

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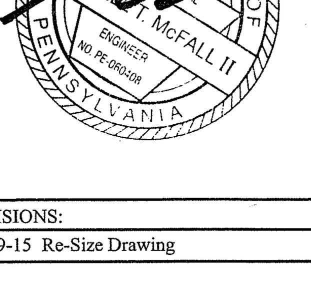


REVISIONS:
09-29-15 Re-Size Drawing

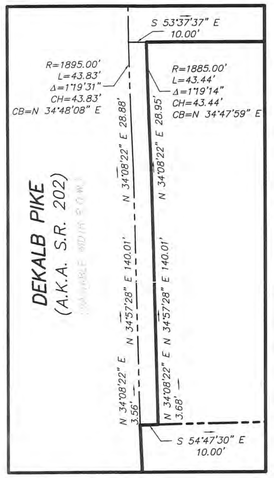
Project:

Center Square Commons

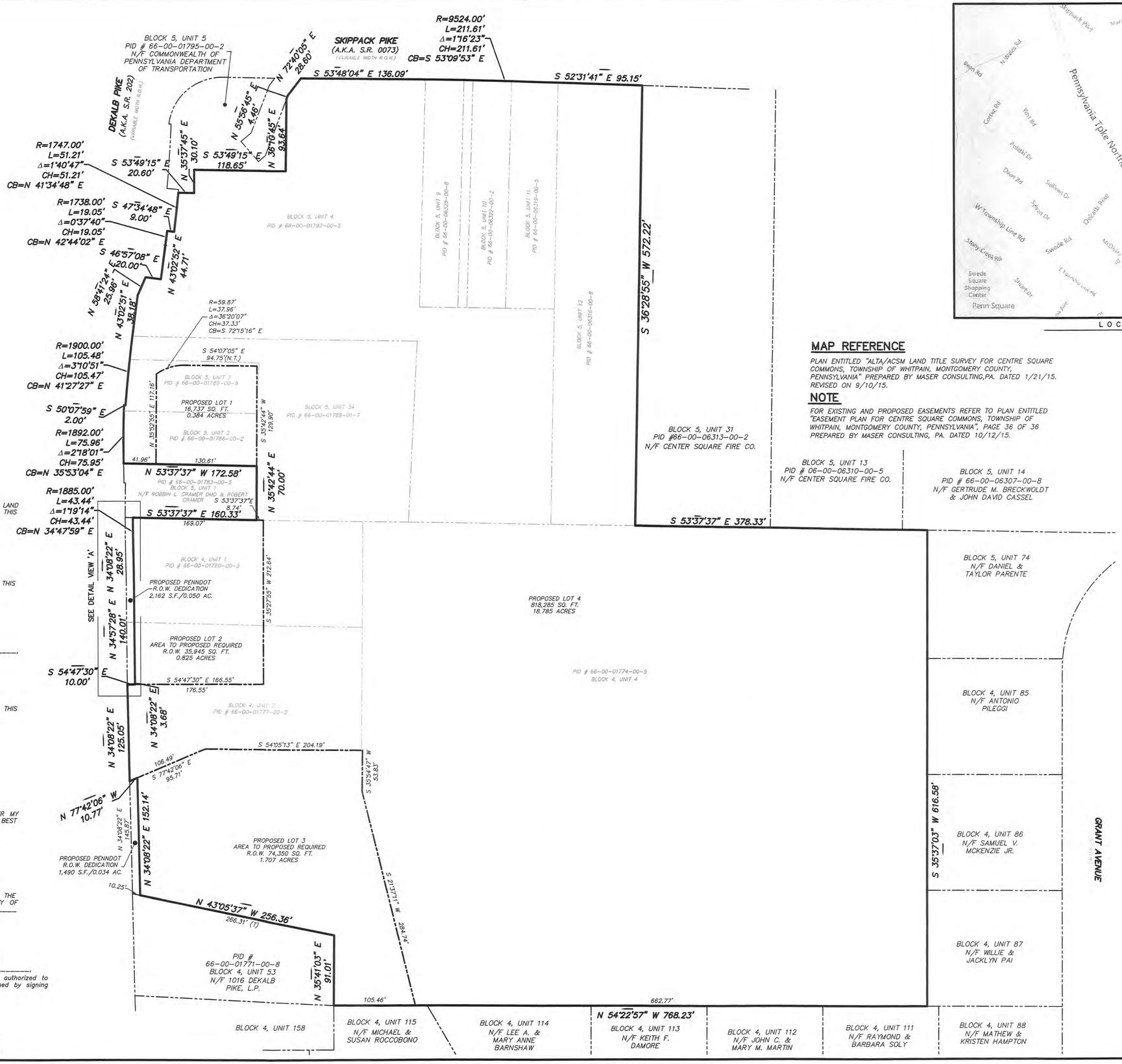
Post Construction Stormwater Management System

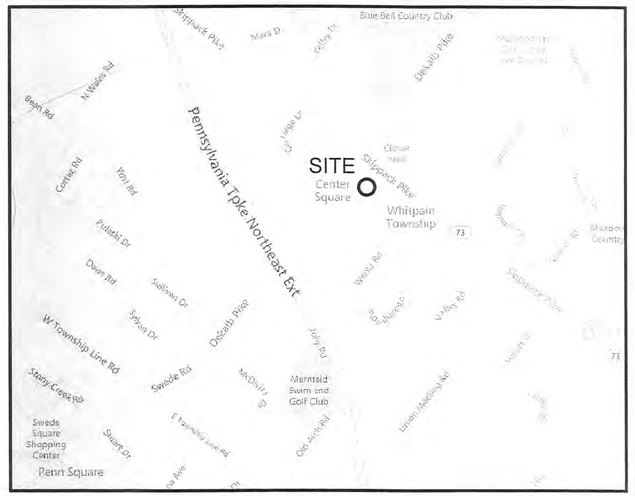
O & M Schedule

Date: 5-25-15	Design By: WJM
Drawn By: WJM	Checked By:
Scale: NTS	Sheet #: 34 of 38



DETAIL VIEW 'A'





LOCATION MAP

MAP REFERENCE

PLAN ENTITLED "ALTA/ACSM LAND TITLE SURVEY FOR CENTRE SQUARE COMMONS, TOWNSHIP OF WHITPAIN, MONTGOMERY COUNTY, PENNSYLVANIA" PREPARED BY MASER CONSULTING,PA. DATED 1/21/15. REVISED ON 9/10/15.

NOTE

FOR EXISTING AND PROPOSED EASEMENTS REFER TO PLAN ENTITLED "EASEMENT PLAN FOR CENTRE SQUARE COMMONS, TOWNSHIP OF WHITPAIN, MONTGOMERY COUNTY, PENNSYLVANIA", PAGE 36 OF 36 PREPARED BY MASER CONSULTING, PA. DATED 10/12/15.

APPLICANT/EQUITABLE OWNER

MADISON DEVELOPMENT GROUP, INC.
AND CENTER SQUARE COMMONS, LP.
ATTN: JOHN MCKENNA
P.O. BOX 507
SOUTHEASTERN, PA 19399

I HEREBY CERTIFY THAT _____ IS THE OWNER OF THE LAND HEREIN SUBDIVIDED OR TO BE DEVELOPED AND THAT I DO HEREBY ADOPT THIS PLAN.

(TITLE) DATE

APPROVED BY THE WHITPAIN TOWNSHIP PLANNING COMMISSION THIS _____ DAY OF _____, 20 _____.

SECRETARY DATE
WHITPAIN TOWNSHIP PLANNING COMMISSION

APPROVED BY THE TOWNSHIP ENGINEER ON THE DAY OF _____, 20____.

TOWNSHIP ENGINEER DATE

APPROVED BY THE BOARD OF SUPERVISORS OF WHITPAIN TOWNSHIP THIS _____ DAY OF _____, 20 _____.

CHAIRMAN DATE

SECRETARY DATE

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A SURVEY MADE UNDER MY SUPERVISION AND THAT ALL DIMENSIONAL DETAILS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

10/12/15
DATE

MICHAEL F. BURNS
PENNSYLVANIA PROFESSIONAL
LAND SURVEYOR LIC. NO. SU050063-E

RECORDED THIS _____ DAY OF _____, 20____, IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC., IN AND FOR THE COUNTY OF MONTGOMERY OF NORRISTOWN, PENNSYLVANIA, IN PLAN BOOK NO. _____ PAGE_____.

CORPORATE ACKNOWLEDGEMENT
COMMONWEALTH OF PENNSYLVANIA
COUNTY OF _____
On this, _____ day of _____, 20_____, before me, _____, the undersigned officer, personally appeared _____, who acknowledged himself (herself) to be the _____, being authorized to do so, executed th foregoing instrument for the purpose therein contained by signing the name of the corporation by himself(herself) as
IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

_____ Notary Public
My Commission Expires:
_____,20_____

PA. STATE PLANE COORDINATE SYSTEM
(NAD83)

60 0 60 120
SCALE IN FEET
(1"=60')

REV.	DATE	DRAWN BY	DESCRIPTION

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL LAND SURVEYOR
MICHAEL F. BURNS
SU050063-E
10/12/15

MICHAEL F. BURNS
PENNSYLVANIA PROFESSIONAL
LAND SURVEYOR LIC. NO. SU050063-E

MASER CONSULTING P.A.
Consulting, Municipal & Environmental Engineers
Planners * Surveyors * Landscape Architects

New Jersey New York Pennsylvania Virginia
Customer Loyalty *through* Client Satisfaction

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Mount Laurel Twp., NJ 08054
Phone: 856.797.0412
Fax: 856.772.1120
email: solutions @ maserconsulting.com

FINANCIAL SUBDIVISION PLAN

FOR

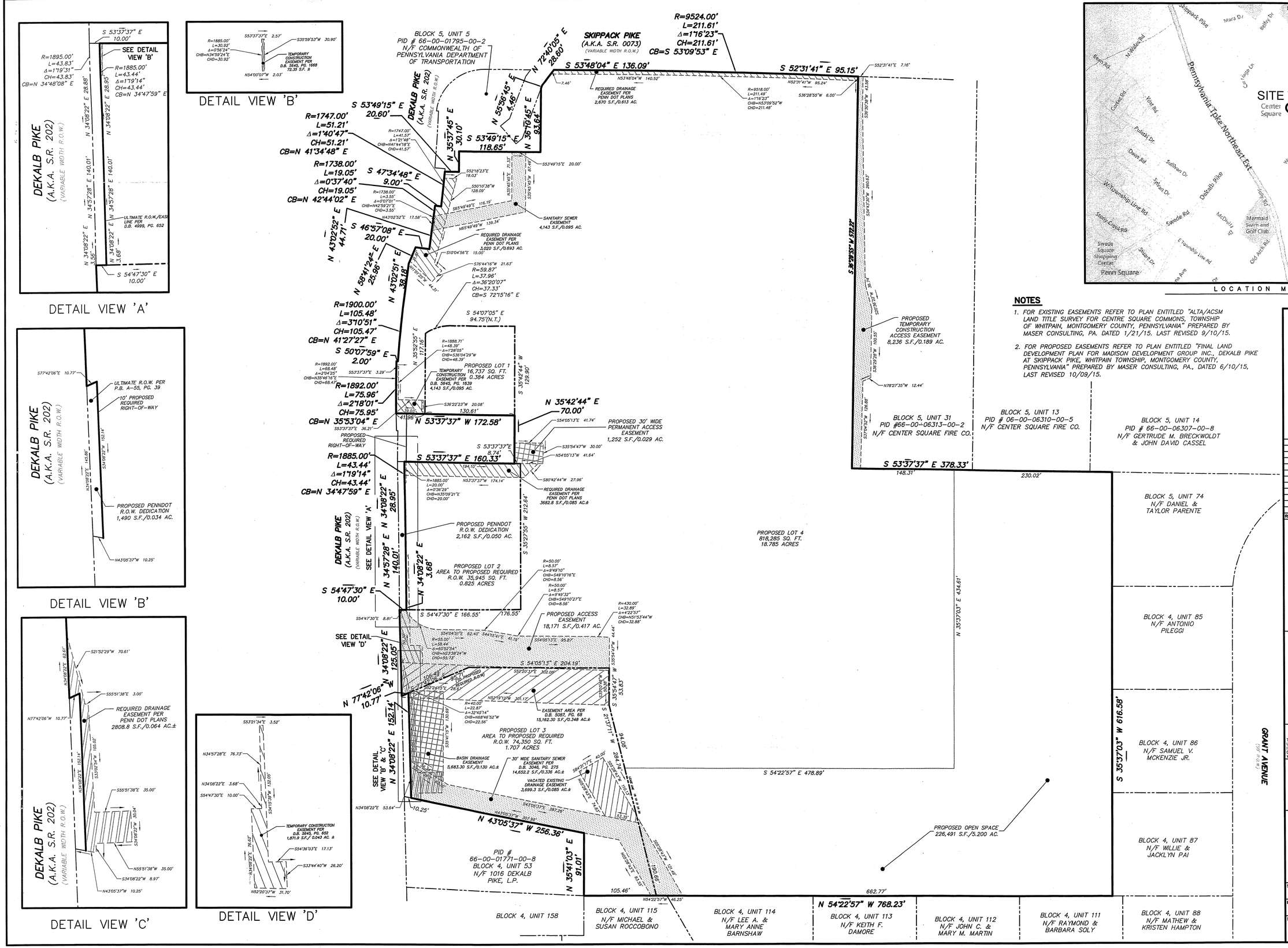
CENTRE SQUARE COMMONS

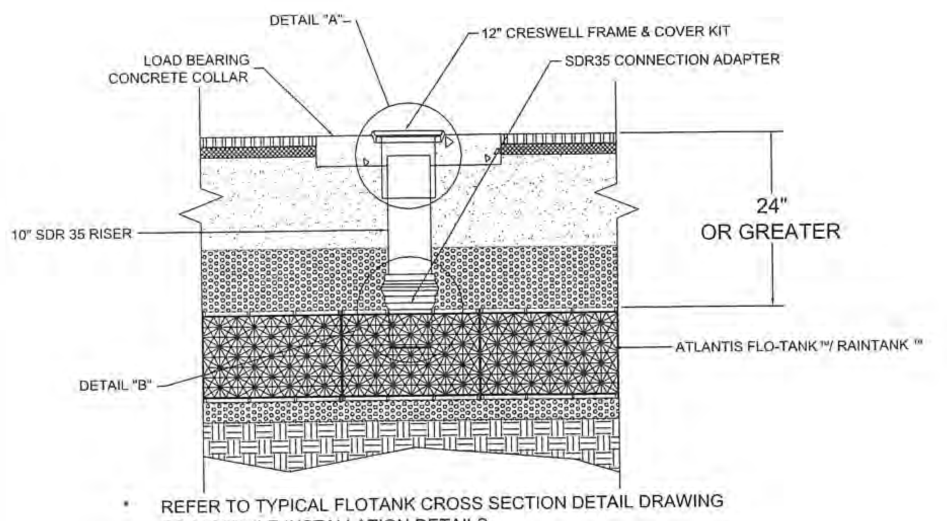
TOWNSHIP OF WHITPAIN
MONTGOMERY COUNTY PENNSYLVANIA

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
1"=60'	10/12/15	AJN	MB

PROJECT NUMBER: 12000830A V-SURV-RCRD-SUBD

SHEET NUMBER: 35 of 38


DETAIL VIEW 'A'
DETAIL VIEW 'B'
DETAIL VIEW 'C'
DETAIL VIEW 'D'
DEKALB PIKE (A.K.A. S.R. 202) (VARIABLE WIDTH R.O.W.)
SKIPPACK PIKE (A.K.A. S.R. 0073) (VARIABLE WIDTH R.O.W.)
BLOCK 5, UNIT 5 PID # 66-00-01795-00-2 N/F COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
PROPOSED LOT 1 16,737 SQ. FT. 0.384 ACRES
PROPOSED LOT 2 AREA TO PROPOSED REQUIRED R.O.W. 35,945 SQ. FT. 0.825 ACRES
PROPOSED LOT 3 AREA TO PROPOSED REQUIRED R.O.W. 74,350 SQ. FT. 1.707 ACRES
PROPOSED LOT 4 818,285 SQ. FT. 18.785 ACRES
PROPOSED OPEN SPACE 226,491 S.F./5.200 AC.
PID # 66-00-01771-00-8 BLOCK 4, UNIT 53 N/F 1016 DEKALB PIKE, L.P.
BLOCK 5, UNIT 31 PID #66-00-06313-00-2 N/F CENTER SQUARE FIRE CO.
BLOCK 5, UNIT 13 PID # 06-00-06310-00-5 N/F CENTER SQUARE FIRE CO.
BLOCK 5, UNIT 14 PID # 66-00-06307-00-8 N/F GERTRUDE M. BRECKWOLDT & JOHN DAVID CASSEL
BLOCK 5, UNIT 74 N/F DANIEL & TAYLOR PARENTE
BLOCK 4, UNIT 85 N/F ANTONIO PILEGGI
BLOCK 4, UNIT 86 N/F SAMUEL V. MCKENZIE JR.
BLOCK 4, UNIT 87 N/F WILLIE & JACKLYN PAI
BLOCK 4, UNIT 88 N/F MATHEW & KRISTEN HAMPTON
BLOCK 4, UNIT 158
BLOCK 4, UNIT 115 N/F MICHAEL & SUSAN ROCCOBONO
BLOCK 4, UNIT 114 N/F LEE A. & MARY ANNE BARNSHAW
BLOCK 4, UNIT 113 N/F KEITH F. DAMORE
BLOCK 4, UNIT 112 N/F JOHN C. & MARY M. MARTIN
BLOCK 4, UNIT 111 N/F RAYMOND & BARBARA SOLY
GRANT AVENUE (50' R.O.W.)
S 53°37'03" W 616.58'
S 53°37'37" E 378.33'
N 54°22'57" W 768.23'
S 54°22'57" E 478.89'
N 43°05'37" W 256.36'
N 35°41'03" E 91.01'
N 53°37'03" E 434.61'
S 35°27'55" W 572.22'
N 53°37'37" W 172.58'
S 53°37'37" E 160.33'
N 35°42'44" E 70.00'
PROPOSED 30' WIDE PERMANENT ACCESS EASEMENT 1,252 S.F./0.029 AC.
PROPOSED TEMPORARY CONSTRUCTION ACCESS EASEMENT 8,236 S.F./0.189 AC.
PROPOSED PENNDOT R.O.W. DEDICATION 2,162 S.F./0.050 AC.
PROPOSED PENNDOT R.O.W. DEDICATION 1,490 S.F./0.034 AC.
PROPOSED ACCESS EASEMENT 18,171 S.F./0.417 AC.
SANITARY SEWER EASEMENT 4,143 S.F./0.095 AC.
REQUIRED DRAINAGE EASEMENT PER PENN DOT PLANS 2,670 S.F./0.613 AC.
REQUIRED DRAINAGE EASEMENT PER PENN DOT PLANS 3,020 S.F./0.693 AC.
REQUIRED DRAINAGE EASEMENT PER PENN DOT PLANS 3682.8 S.F./0.085 AC.±
REQUIRED DRAINAGE EASEMENT PER PENN DOT PLANS 2808.8 S.F./0.064 AC.±
EASEMENT AREA PER D.B. 5087, PG. 68 15,162.30 S.F./0.348 AC.±
BASIN DRAINAGE EASEMENT 5,683.30 S.F./0.130 AC.±
30' WIDE SANITARY SEWER EASEMENT PER D.B. 3046, PG. 275 14,632.2 S.F./0.336 AC.±
VACATED EXISTING DRAINAGE EASEMENT 3,699.3 S.F./0.085 AC.±
TEMPORARY CONSTRUCTION EASEMENT PER D.B. 5845, PG. 1639 4,143 S.F./0.095 AC.
TEMPORARY CONSTRUCTION EASEMENT PER D.B. 5845, PG. 652 1,671.8 S.F./ 0.043 AC. ±
SEE DETAIL VIEW 'A'
SEE DETAIL VIEW 'B'
SEE DETAIL VIEW 'C'
SEE DETAIL VIEW 'D'
ULTIMATE R.O.W./EASE. LINE PER D.B. 4999, PG. 652
ULTIMATE R.O.W. PER P.B. A-55, PG. 39
10' PROPOSED REQUIRED RIGHT-OF-WAY
PROPOSED REQUIRED RIGHT-OF-WAY
PROPOSED PENNDOT R.O.W. DEDICATION 1,490 S.F./0.034 AC.
REQUIRED DRAINAGE EASEMENT PER PENN DOT PLANS 2808.8 S.F./0.064 AC.±
S 54°47'30" E 10.00'
N 34°08'22" E 125.05'
N 77°42'06" W 10.77'
N 34°08'22" E 152.14'
N 34°57'28" E 140.01'
N 34°08'22" E 28.95'
N 34°08'22" E 3.68'
S 53°49'15" E 20.60'
S 47°34'48" E 9.00'
S 46°57'08" E 20.00'
N 43°02'52" E 44.71'
N 56°41'24" E 23.96'
N 43°02'51" E 38.18'
S 50°07'59" E 2.00'
N 35°42'44" W 129.90'
N 35°52'55" E 117.18'
N 35°27'55" W 212.64'
S 54°47'30" E 166.55'
S 54°05'13" E 204.19'
S 35°54'47" W 93.63'
S 21°37'11" W 284.74'
S 54°05'13" E 41.74'
S 35°54'47" W 30.00'
N 54°05'13" W 41.64'
S 80°42'44" W 27.96'
N 35°42'44" W 70.00'
S 53°37'37" E 8.74'
S 53°37'37" E 130.61'
S 53°37'37" E 36.21'
S 53°37'37" E 3.29'
S 53°37'37" E 20.08'
S 53°37'37" E 194.10'
N 53°37'37" W 174.14'
S 53°37'37" E 2.57'
S 35°39'53" W 30.90'
N 54°00'07" W 2.03'
S 53°21'34" E 3.52'
N 34°57'28" E 76.73'
N 34°08'22" E 3.68'
S 54°47'30" E 10.00'
S 34°08'22" W 8.97'
N 43°05'37" W 10.25'
N 52°26'37" W 31.70'
S 54°36'03" E 17.13'
S 33°44'40" W 26.20'
N 34°08'22" E 53.64'
N 34°08'22" E 10.25'
S 53°49'15" E 118.65'
N 55°56'45" E 4.46'
N 36°16'45" E 93.64'
N 35°37'45" E 30.10'
S 52°31'41" E 95.15'
S 53°48'04" E 136.09'
N 72°40'05" E 28.60'
R=9524.00' L=211.61' Δ=1°16'23" CH=211.61' CB=S 53°09'53" E
R=1895.00' L=43.83' Δ=1°19'31" CH=43.83' CB=N 34°48'08" E
R=1885.00' L=43.44' Δ=1°19'14" CH=43.44' CB=N 34°47'59" E
R=1747.00' L=51.21' Δ=1°40'47" CH=51.21' CB=N 41°34'48" E
R=1738.00' L=19.05' Δ=0°37'40" CH=19.05' CB=N 42°44'02" E
R=1900.00' L=105.48' Δ=3°10'51" CH=105.47' CB=N 41°27'27" E
R=1892.00' L=75.96' Δ=2°18'01" CH=75.95' CB=N 35°53'04" E
R=1885.00' L=43.44' Δ=1°19'14" CH=43.44' CB=N 34°47'59" E
R=59.87' L=37.98' Δ=36°20'07" CH=37.33' CB=S 72°15'16" E
R=9518.00' L=211.49' Δ=1°16'23" CH=N53°09'52"W CHD=211.48'
R=430.00' L=32.89' Δ=4°22'37" CH=N51°33'44"W CHD=32.88'
R=50.00' L=8.57' Δ=9°49'10" CH=S49°10'16"E CHD=8.56'
R=50.00' L=8.57' Δ=9°49'32" CH=S49°10'27"E CHD=8.56'
R=55.00' L=58.44' Δ=60°93'54" CH=N23°38'24"W CHD=55.73'
R=40.00' L=22.87' Δ=33°45'14" CH=N56°16'52"W CHD=22.56'
R=1888.71' L=48.39' Δ=1°28'05" CH=S36°04'29"W CHD=48.39'
R=1892.00' L=68.48' Δ=2°04'25" CH=N35°46'16"E CHD=68.47'
R=1885.00' L=20.00' Δ=0°36'29" CH=N35°09'21"E CHD=20.00'
R=1747.00' L=41.57' Δ=1°21'48" CH=N41°14'18"E CHD=41.57'
R=1738.00' L=3.55' Δ=0°07'01" CH=N42°29'21"E CHD=3.55'
S77°42'06"E 10.77'
S21°52'29"W 70.61'
S55°51'38"E 3.00'
N77°42'06"W 10.77'
S55°51'38"E 35.00'
N55°51'38"W 35.00'
N43°05'37"W 10.25'
S 35°37'03" W 616.58'
S 53°37'37" E 148.31'
S 53°37'37" E 230.02'
S 53°37'37" E 662.77'
N 54°22'57" W 105.46'
N 54°22'57" W 46.25'
N 35°41'03" E 190.66'
S 35°27'55" W 101.67'
S 35°27'55" W 62.59'
S 35°27'55" W 40.00'
S 35°27'55" W 74.67'
S 35°27'55" W 10.13'
S 35°27'55" W 1.35'
N 35°27'55" E 1.35'
N 35°27'55" E 10.13'
N 35°27'55" E 74.67'
N 35°27'55" E 40.00'
N 35°27'55" E 62.59'
N 35°27'55" E 101.67'
N 35°27'55" E 190.66'
S 53°21'41" E 7.16'
S 53°48'04" W 140.52'
S 52°31'41" W 95.24'
S 36°28'55" W 6.00'
S 53°49'15" E 20.00'
S 52°18'23" E 18.03'
S 50°10'38" W 128.09'
S 55°49'49" E 116.19'
N 44°03'52" E 17.58'
N 65°49'49" W 139.34'
S 10°04'56" E 15.00'
S 76°44'16" W 21.63'
S 54°07'05" E 94.75'(N.T.)
S 36°22'23" W 20.08'
S 53°37'37" E 36.21'
S 53°37'37" E 3.29'
S 53°37'37" E 2.57'
S 35°39'53" W 30.90'
S 52°30'08" W 43.58'
S 53°30'08" W 43.58'
S 53°30'08" W 260.63'
S 34°42'50" W 260.63'
S 53°29'28" W 100.55'
S 53°29'28" W 36.74'
S 37°54'52" W 128.68'
N 78°27'35" W 12.44'
S 53°49'15" E 20.60'
S 53°49'15" E 118.65'
S 53°49'15" E 20.60'
S 53°49'15" E 20.60'
S 53°49'15" E 20.60



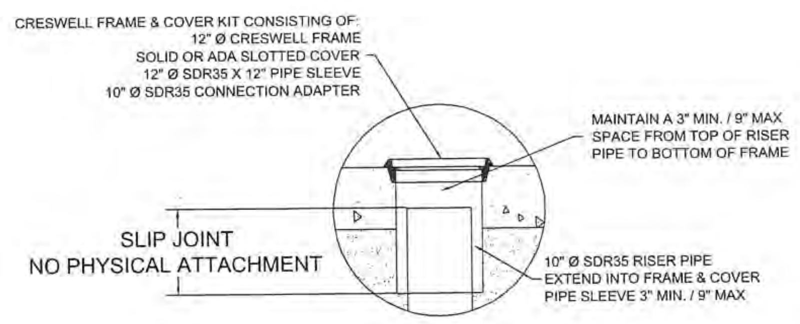
* REFER TO TYPICAL FLOTANK CROSS SECTION DETAIL DRAWING FOR MODULE INSTALLATION DETAILS

TYPICAL CROSS SECTION MAINTENANCE PORT CONNECTION VEHICULAR LOADING

INSTALLATION NOTES:

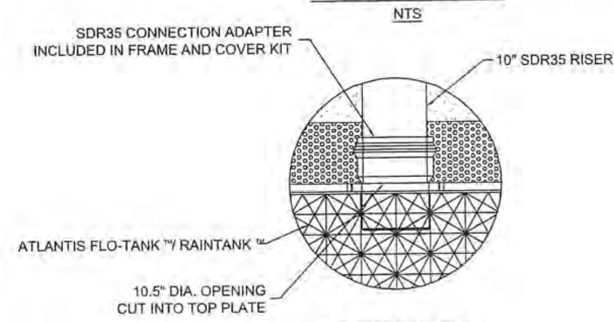
1. 10" Ø MAINTENANCE PORTS PROVIDE VISUAL INSPECTION CAPABILITY, FLUSH / VACUUM ACCESS AND SYSTEM VENTILATION.
2. MAINTENANCE PORTS ARE RECOMMENDED WITHIN THE FIRST 10'-15' OF AN INLET PIPE OR CATCH BASIN ABUTMENT TO SYSTEM AND 35'-50' SPACING THROUGHOUT THE SYSTEM. MAINTENANCE PORTS CAN SUBSTITUTE OBSERVATION PORTS.
3. LAYOUT AND CUT 10.5" HOLE IN THE TOP PLATE.
   - 3.1. POSITION THE HOLE CENTERED IN THE WIDTH OF THE LARGE PLATE
   - 3.2. POSITION THE HOLE BETWEEN INTERNAL PLATES IN THE LENGTH OF THE LARGE PLATE, BASED ON THE PLATE CONFIGURATION A PLATE MAY NEED TO BE OMITTED FOR THE MAINTENANCE PORT.
   - 3.3. USE A HOLE SAW, JIG SAW, OR SAZALL TO CUT A 10.5" Ø HOLE IN THE LARGE PLATE
4. PLACE THE SDR35 CONNECTION ADAPTER WITH THE SPIGOT END INTO THE LARGE PLATE, MAKING SURE THE ADAPTER DOESN'T FALL COMPLETELY THROUGH, IF SO DISCARD & CUT A NEW LARGE PLATE
5. CUT A PIECE OF SDR35 PIPE TO THE DESIRED HEIGHT. THE RISER PIPE MUST BE 3" MINIMUM AND 9" MAXIMUM LESS THAN THE BOTTOM OF THE COVER FRAME
6. INSTALL THE RISER PIPE INTO THE ADAPTER FITTING
7. INSTALL THE 12" LONG PIPE SLEEVE INTO THE FRAME & COVER
8. INSTALL THE FRAME & COVER WITH PIPE SLEEVE OVER THE RISER PIPE. DO NOT GLUE OR PHYSICALLY ATTACH THE PIPE SLEEVE TO THE RISER PIPE.
9. WHEN BACKFILLING KEEP THE FRAME WITH PIPE SLEEVE AT FINISH ELEVATION, CREATING A 3"-9" SPACE BETWEEN THE TOP OF THE RISER PIPE AND THE BOTTOM OF THE COVER FRAME
10. THE PIPE SLEEVE CREATES A SLIP JOINT OVER THE RISER PIPE AND WILL PREVENT ADVERSE VERTICAL LOADS FROM BEING TRANSFERRED TO THE TOP OF THE SYSTEM

** CONTACT EXETER SUPPLY 610-779-4230 FOR ADDITIONAL INFORMATION, ORDERING OR NON-STANDARD DESIGN APPLICATION



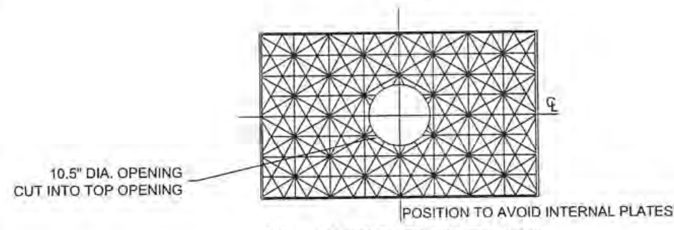
DETAIL "A" FRAME & COVER CONNECTION

NTS



DETAIL "B" LOCATING COUPLING CONNECTION

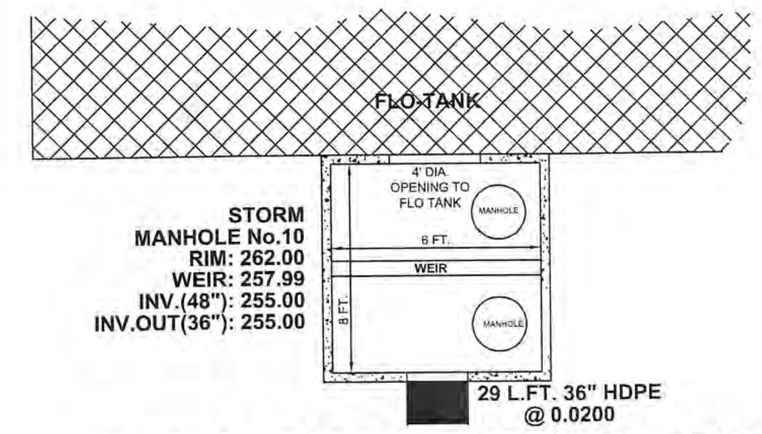
NTS



ATLANTIS FLO-TANK®

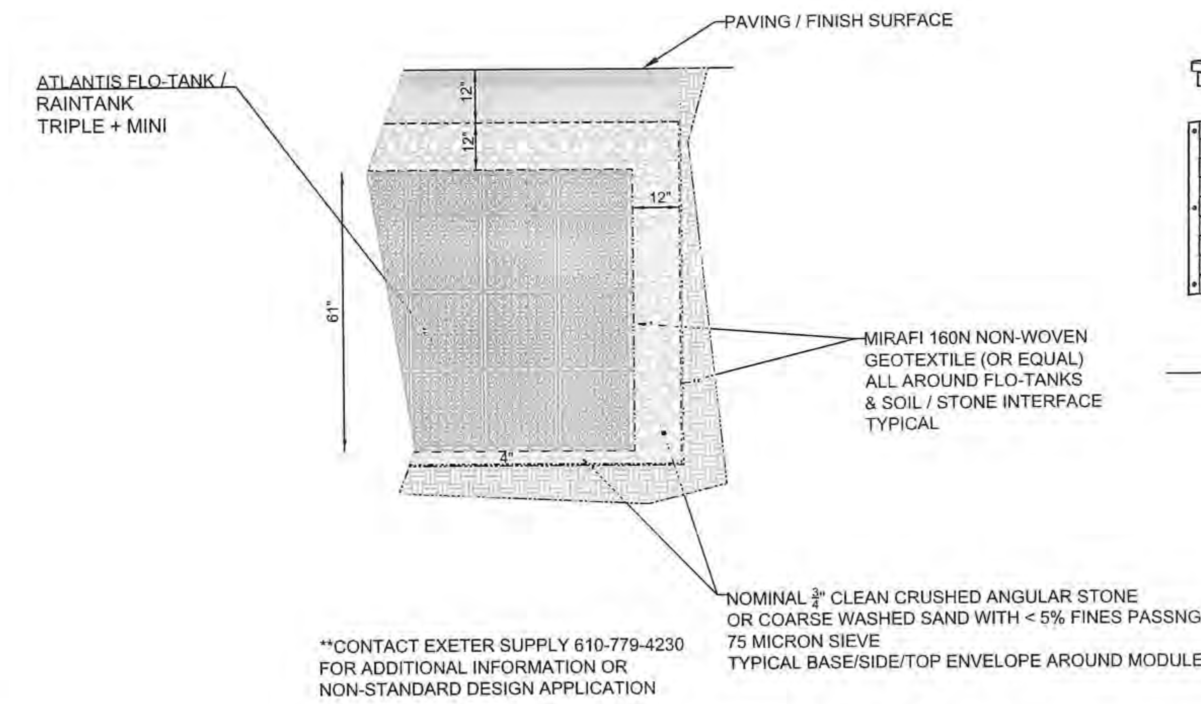
TOP VIEW

NTS



BASIN 1 DISCHARGE STRUCTURE PLAN VIEW

NO SCALE



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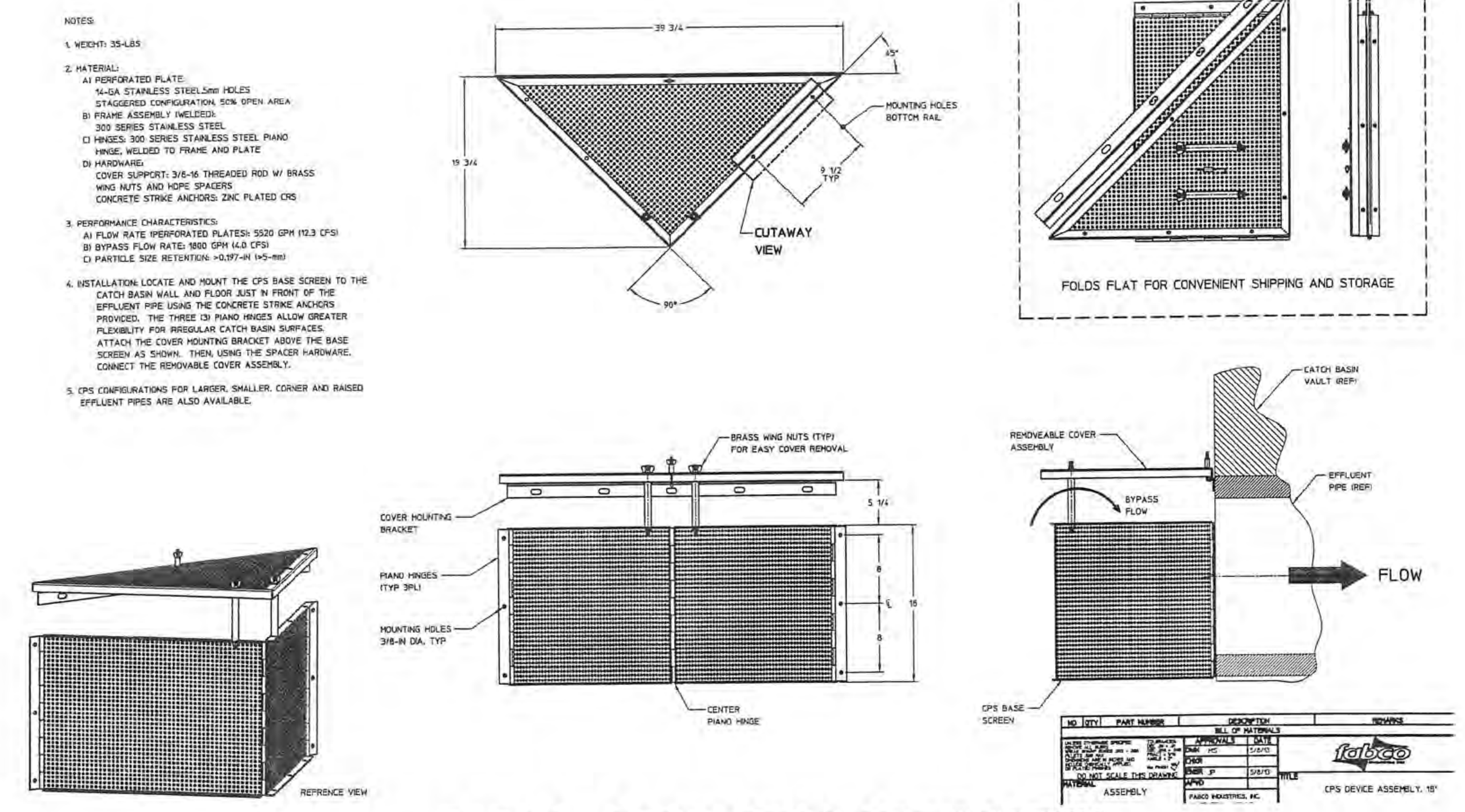
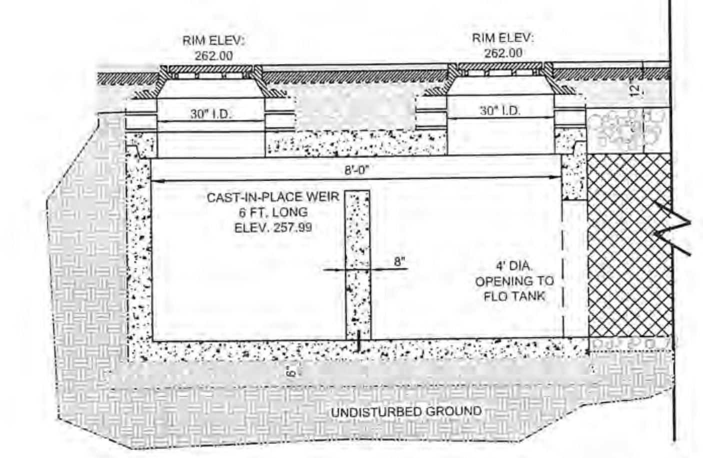
UNDERGROUND BASIN 1 FLOW-TANK DETAIL

NO SCALE



FABCO - CONNECTOR PIPE SCREEN

N.T.S.

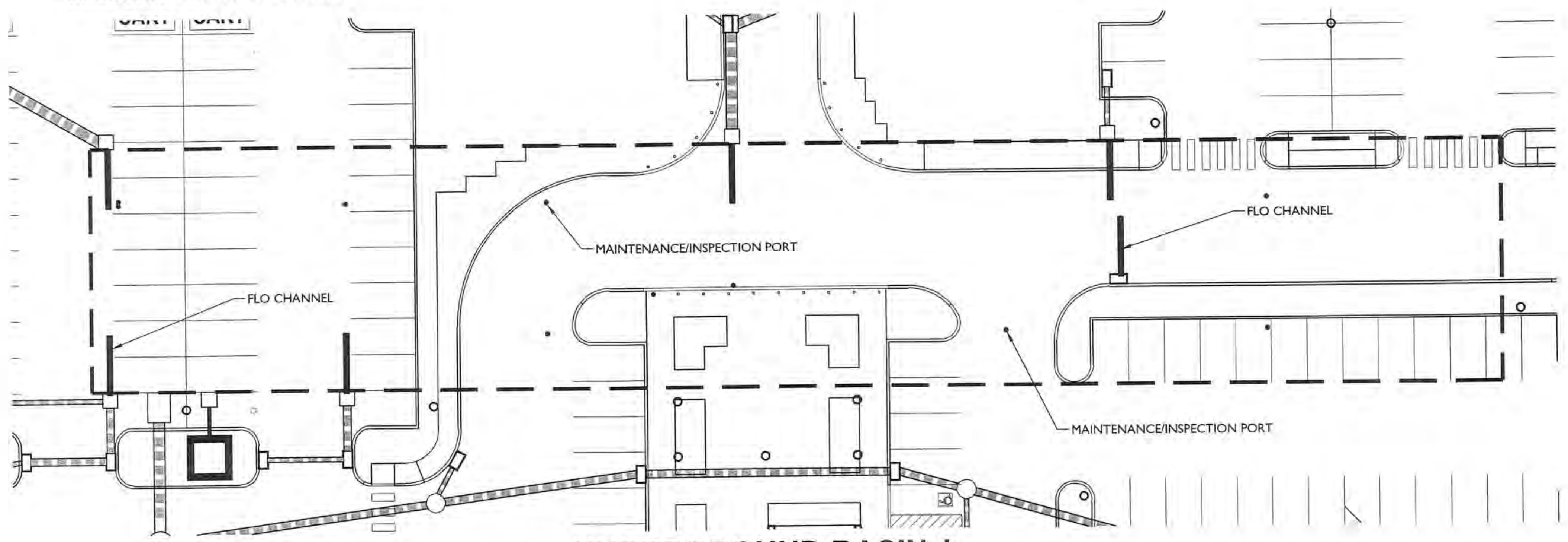


NOTES

1. STRUCTURE SHALL BE DESIGNED TO H-20 HIGHWAY LOADING.
2. ALL PRE-CAST CONCRETE TO BE IN ACCORDANCE WITH LATEST A.S.T.M. DESIGNATION C-478, MIN. COMPRESSIVE STRENGTH TO BE 4,000 PSI
3. ALL MANHOLES NOT IN PAVED AREAS SHALL HAVE LOCKING COVERS.

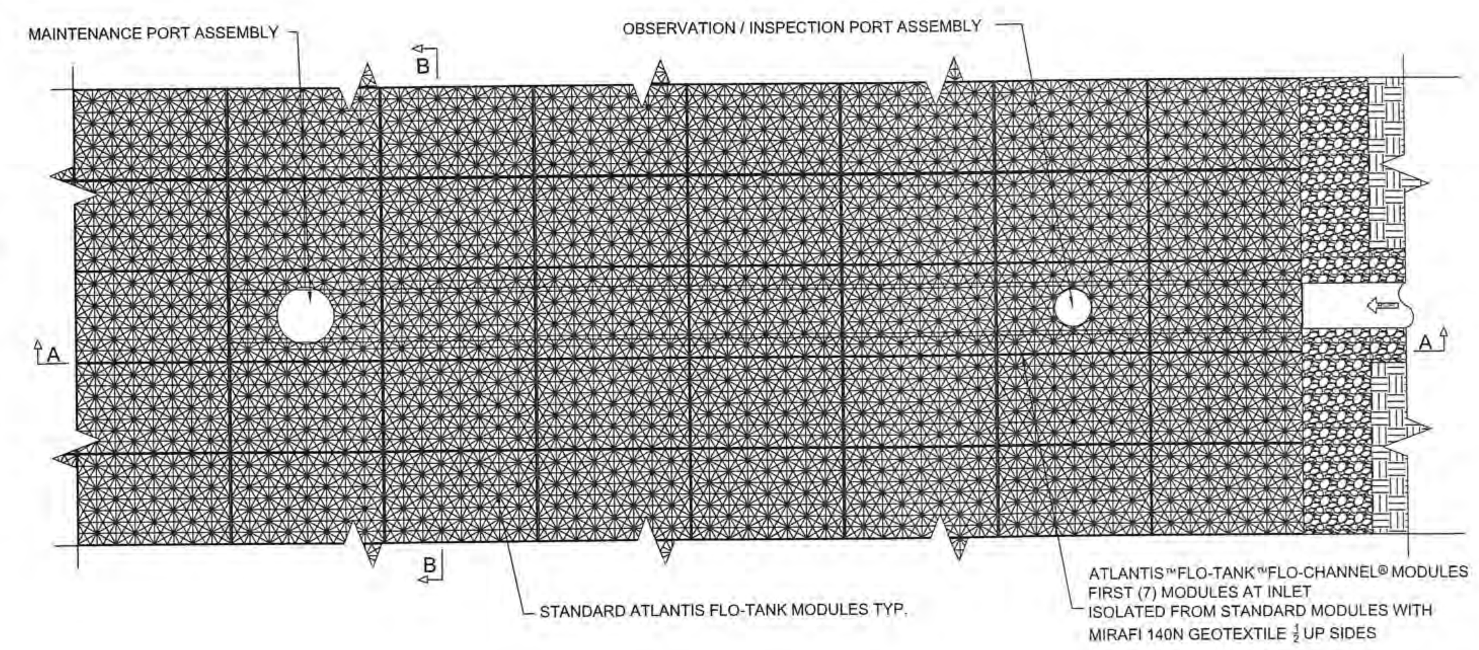
BASIN 1 DISCHARGE STRUCTURE DETAIL

NO SCALE

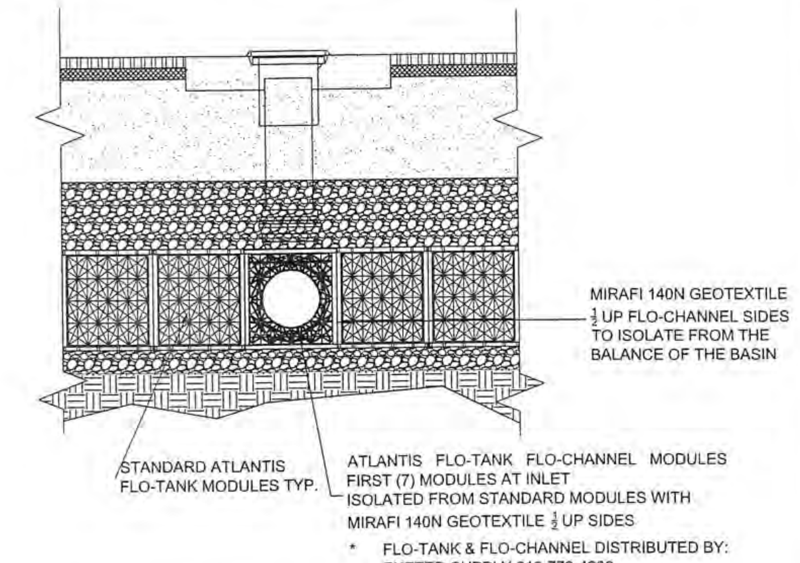


UNDERGROUND BASIN 1 ACCESSORIES DETAIL

SCALE: 1"=30'

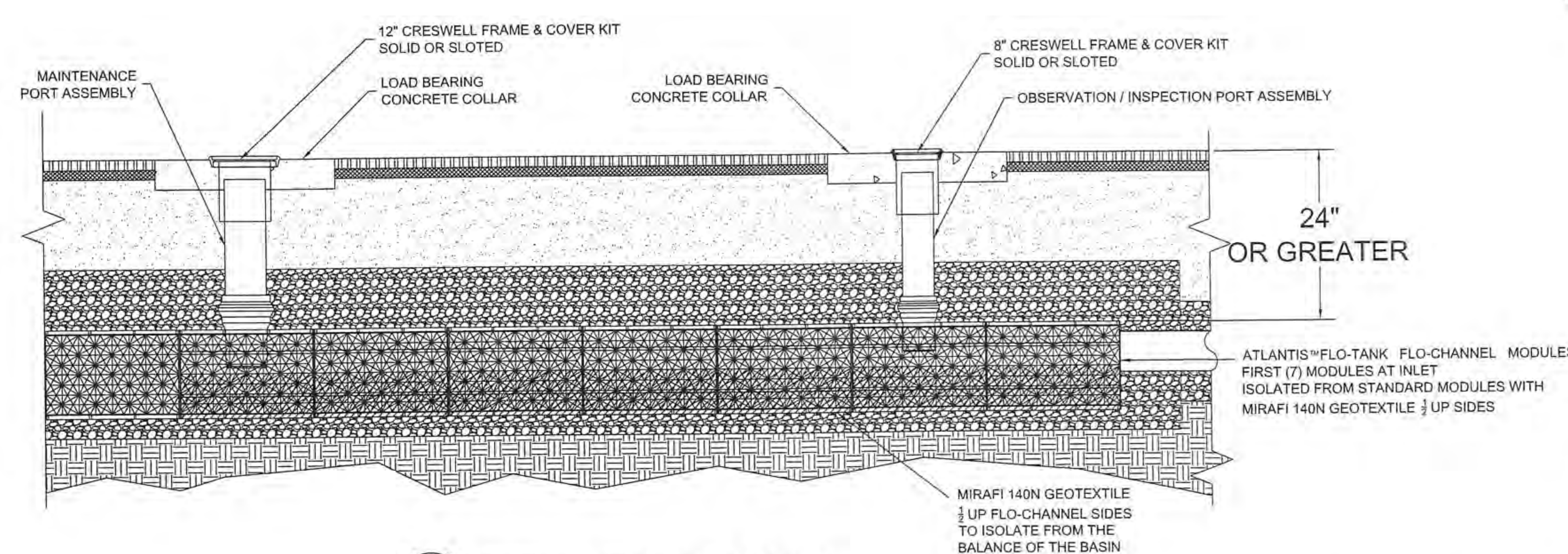


PLAN VIEW SECONDARY SEDIMENT CONTAINMENT CHANNEL



* FLO-TANK & FLO-CHANNEL DISTRIBUTED BY: EXETER SUPPLY 610-779-4230

B-B / SSC-1 TYPICAL CROSS SECTION SECONDARY SEDIMENT CONTAINMENT CHANNEL VEHICULAR LOADING

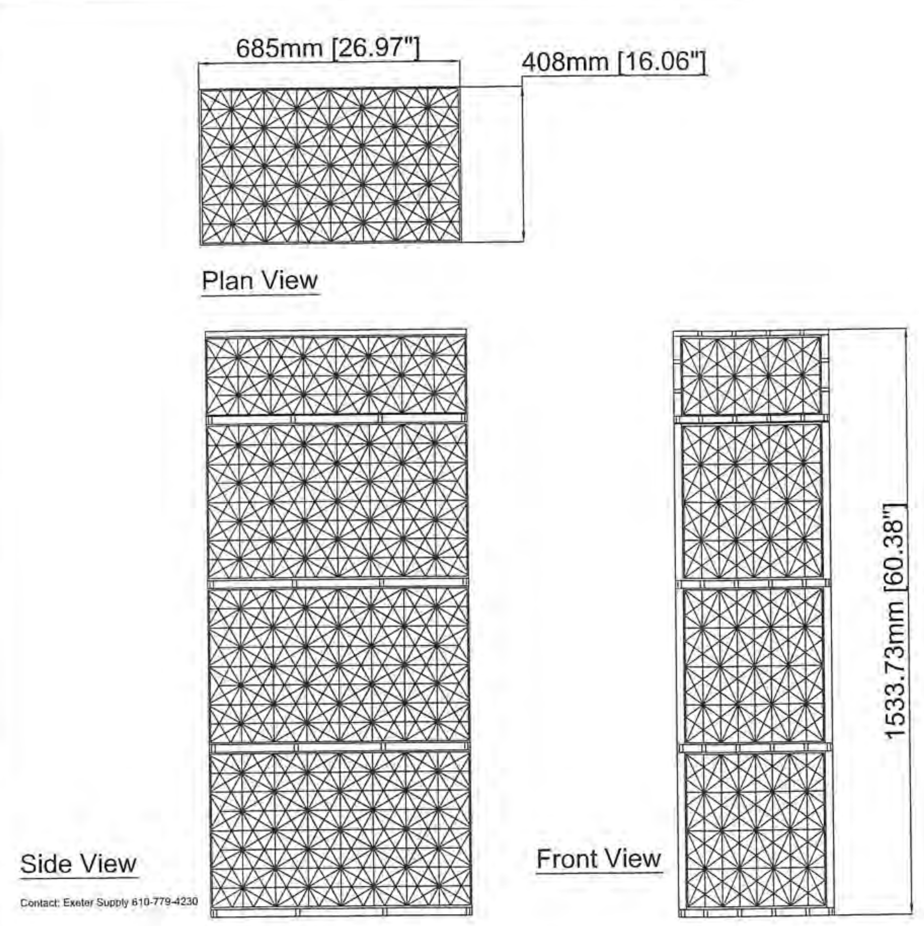


A-A / SSC-1 TYPICAL CROSS SECTION SECONDARY SEDIMENT CONTAINMENT CHANNEL VEHICULAR LOADING

** CONTACT EXETER SUPPLY 610-779-4230 FOR ADDITIONAL INFORMATION, ORDERING OR NON-STANDARD DESIGN APPLICATION

NOTES:

1. THE SECONDARY SEDIMENT CONTAINMENT CHANNEL MODULE MUST HAVE 10" DIAMETER OPENING THROUGH THE LENGTH OF THE MODULE FOR PROPER FLOW, INSPECTION AND MAINTENANCE
2. THE SECONDARY SEDIMENT CONTAINMENT CHANNEL IS TO BE USED IN CONJUNCTION WITH A PRIMARY TREATMENT DEVICE AND NOT AS THE PRIMARY TREATMENT UNIT
3. THE SECONDARY SEDIMENT CONTAINMENT CHANNEL IS DESIGNED TO MINIMIZE SEDIMENT FROM SPREADING THROUGHOUT THE BASIN SHOULD IT GET PAST THE PRIMARY TREATMENT DEVICE. THE CHANNEL CONTAINS SEDIMENT IN AN ISOLATED AREA FOR EASE OF MAINTENANCE
4. REFERENCE TYPICAL FLO-TANK CROSS SECTION DETAIL DRAWING FOR MODULE INSTALLATION DETAILS
5. REFERENCE TYPICAL OBSERVATION PORT & MAINTENANCE PORT CROSS SECTION DETAIL DRAWINGS FOR PROPER INSTALLATION



Contact: Exeter Supply 610-779-4230

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Drawing No: AOP 0023-M

Atlantis

Distributed by: Exeter Supply 610-779-4230

Atlantis® Matrix®/ Flo-Tank®/ D-Raintank® Module - *TRIPLE + MINI*

Dimensions (W x L x H)	408mm x 685mm x 1534mm	16.06" x 26.97" x 60.38"
Module Footprint	0.2795 m²	3.011 ft²
Gross Volume	0.428 m³	15.104 ft³
Storage Capacity	405 L	107 gal

September 2014 PLOT SHEET

12000830A\Engineering\C-GRAD.dwg\C-37-FLO TANK PCSM DETAILS By: JDUMKE

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REV	DATE	DRAWN BY	DESCRIPTION
1	09/11/15	CJR	REVISED PER MCCD REVIEW
2	10/09/15	EXTON	FINAL PLAN SUBMISSION
3	11/30/15	EXTON	REVISED PER FINAL PLAN REVIEW

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER RUSSELL T. McFALL II

RUSSELL T. McFALL II
PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER LICENSE NUMBER: PE60408

FINAL LAND DEVELOPMENT PLANS

FOR

MADISON DEVELOPMENT GROUP, INC.

DEKALB PIKE AT SKIPPACK PIKE

WHITPAIN TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

EXTON OFFICE
410 Eagleview Boulevard
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Exton, PA 19341
Phone: 610.254.9140
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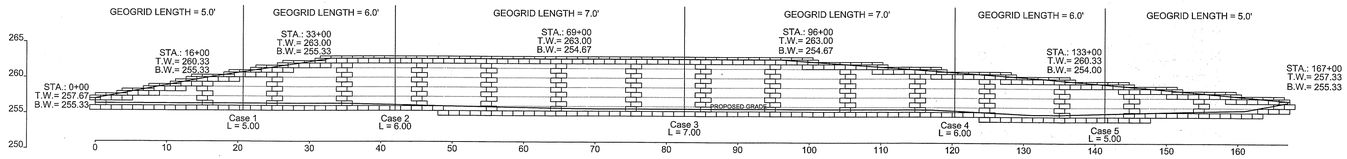
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	06/10/15	DIII	RTM
PROJECT NUMBER: 12000830A	DRAWING NAME: C-GRAD		

SHEET TITLE: FLO-TANK: PCSM DETAILS

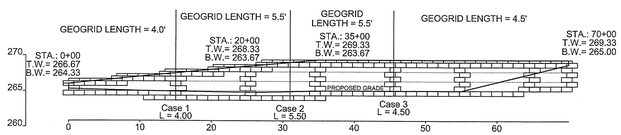
RETAINING WALL 1

SCALE: 1" = 10'



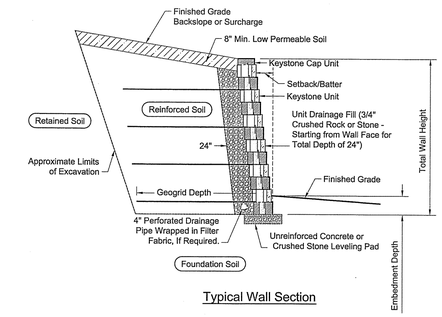
RETAINING WALL 2

SCALE: 1" = 10'



SEGMENTAL RETAINING WALL NOTES:

- RETAINING WALL DESIGN PROVIDED BY DOUG STATLER, ENGINEERED WALL CONSULTANT / SALES REPRESENTATIVE FOR YORK BUILDING PRODUCTS CO., INC. ADDITIONAL INFORMATION REGARDING RETAINING WALL TO BE PROVIDED BY YORK BUILDING PRODUCTS. DSTATLER@YORKBUILDING.COM; CELL - (301) 748-1220
- THE GEOTECHNICAL REPORT FOR THIS PROJECT (DATED 01.16.15 BY MASER CONSULTING) INDICATES THAT THE SOILS ON THE SITE VARY BETWEEN CLAY, SAND, SILT AND WEATHERED ROCK. AN INTERNAL ANGLE OF FRICTION OF 28 DEGREES WAS USED FOR ALL SOILS IN THE WALL DESIGN CALCULATIONS BASED ON WORST CASE "CL" (LEAN CLAY SOILS). NO ORGANIC SOILS ("OH" OR "OL") OR PLASTIC SOILS ("CH" OR "MH") MAY BE PERMITTED WITHIN THE FOUNDATION SOILS (WALL SUB-GRADE, INCLUDING UNDER THE REINFORCED GEOGRID ZONE) OR THE RETAINED SOILS (BEHIND THE REINFORCED GEOGRID ZONE). THE INFILL SOILS (REINFORCED GEOGRID ZONE) MUST MEET THESE SAME PARAMETERS BUT ADDITINOALLY MUST BE CLASSIFIED BY USCS AS ML (SANDY SILT) OR MORE GRANULAR. A UNIT WEIGHT OF 120 PCF WAS USED FOR ALL SOILS- THIS MAY BE +/- 5 PCF.
- WHERE ELEVATIONS ARE SHOWN, TOP OF WALL SHALL MEAN THE ELEVATION AT THE TOP OF THE CAP STONE AND BOTTOM OF WALL SHALL MEAN THE ELEVATION AT THE TOP OF THE LEVELING PAD.
- THE BEARING CAPACITY OF THE FOUNDATION SOILS MUST BE ≥ 2,000 PSF. THE HIGHEST BEARING PRESSURE EXERTED BY THESE WALLS IS 1,333 PSF (WALL 1- CASE 3).
- THE GEOGRID REINFORCING SHALL BE STRATA SG200 (AT LENGTHS SPECIFIED ON WALL PROFILE). MIRAFI 3XT IS AN ACCEPTABLE SUBSTITUTION.
- THE WALLS WERE DESIGNED WITH THE NEAR VERTICAL BATTER- FRONT PIN POSITION (1/8" SETBACK: 1 DEGREE BATTER), BUT THEY MAY ALSO BE BUILT USING THE BACK PIN POSITION (1-1/4" SETBACK: 8.8 DEGREE BATTER) IF DESIRED SINCE THE CALCULATIONS WERE DONE WITH THE MORE CONSERVATIVE FRONT PIN POSITION.
- THE ANGLE POINTS ON THESE WALLS (STATION 0+69 OF WALL #1 AND STATION 0+49 OF WALL #2) SHALL BE BUILT AS RADII (OUTSIDE CURVES) TO AVOID VERTICAL JOINTS.



Typical Wall Section

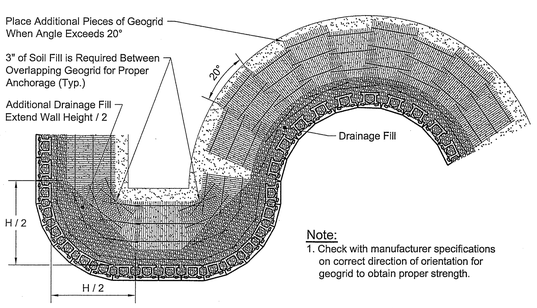
Copyright 2014 Keystone Retaining Wall Systems

Design is for internal stability of the KEYSTONE wall structure only. External stability, including but not limited to foundation and slope stability is the responsibility of the Owner. The design is based on the assumption that the materials within the retained mass, methods of construction, and quality of materials conform to KEYSTONE's specification for this project.

This drawing is being furnished for this specific project only. Any party accepting this document does so in confidence and agrees that it shall not be duplicated in whole or in part, nor disclosed to others without the consent of Keystone Retaining Wall Systems, Inc.

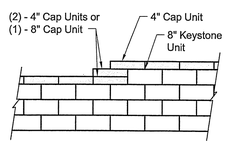
KEYSTONE® RETAINING WALL SYSTEMS A KEYSTON COMPANY
4444 West 76th Street
Minneapolis, MN 55435
952-897-1040

Designed By: DMT	Title: Typical Wall Section	Date: 11/2014
Checked By: CDM	Project: Wall Details	Project No: Det
Scale: No Scale		Drawing No: 1 of 1



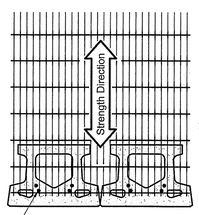
Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

Geogrid Installation on Curves



Note:
1. Secure all cap units with Keystone Kapseal or equal.

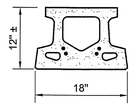
Top of Wall Steps



Geogrid is to be Placed on Level Backfill and Extended Over the Fiberglass Pins. Place Next Unit. Pull Grid Taught and Backfill. Stake as required.

Grid & Pin Connection

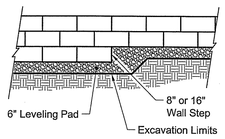
Compac III Elevation



Compac III Plan

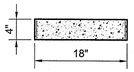
Compac III Unit

* Dimensions May Vary by Region

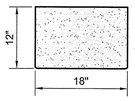


Elevation

Note:
1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.



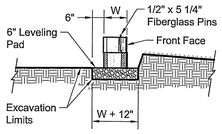
Cap Unit Elevation



Cap Unit Plan

Straight Split Cap Unit

* Dimensions & Availability Will Vary by Region



Section

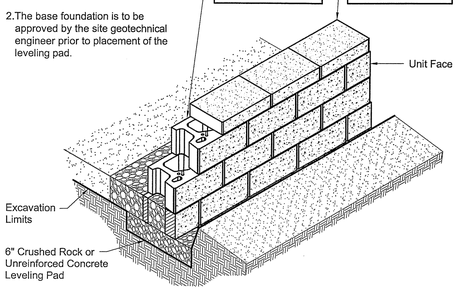
Leveling Pad Detail

Base Leveling Pad Notes:

1. The leveling pad is to be constructed of crushed stone or 2,000 psi± unreinforced concrete
2. The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

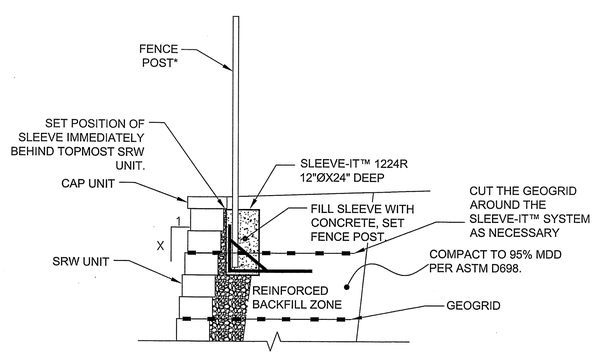
Compac III Unit	
Width:	18"
*Depth:	12"
Height:	8"
*Weight:	75 lbs

Cap Unit	
Width:	18"
*Depth:	12"
Height:	4"
*Weight:	67.5 lbs



Compac III Unit/Base Pad Isometric Section View

* Dimensions & Weight May Vary by Region



*FENCING SYSTEMS APPROVED FOR USE WITH SLEEVE-IT™ 1224R ARE LIMITED TO THE FOLLOWING HEIGHTS: CHAIN LINK - UP TO 8-FT, PRIVACY - UP TO 6-FT (WOODEN, PVC, METAL). POST SIZE 4"X4" MAX.

DETAIL OF FENCE POST INSTALLATION USING SLEEVE-IT™ 1224R

N.T.S.

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FOR MORE INFORMATION CONTACT:
STRATA SYSTEMS INC.,
1-800-680-7750
OR
strata@geogrid.com

DATE: 12/15/2007	SCALE: NTS	DWG NO. SLEEVE-IT™ 1224R SECTION

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PROJECT NUMBER: 12000830A	DRAWING NAME: C-GRAD		

SHEET TITLE:
RETAINING WALL DETAILS

SHEET NUMBER:
38 of 38