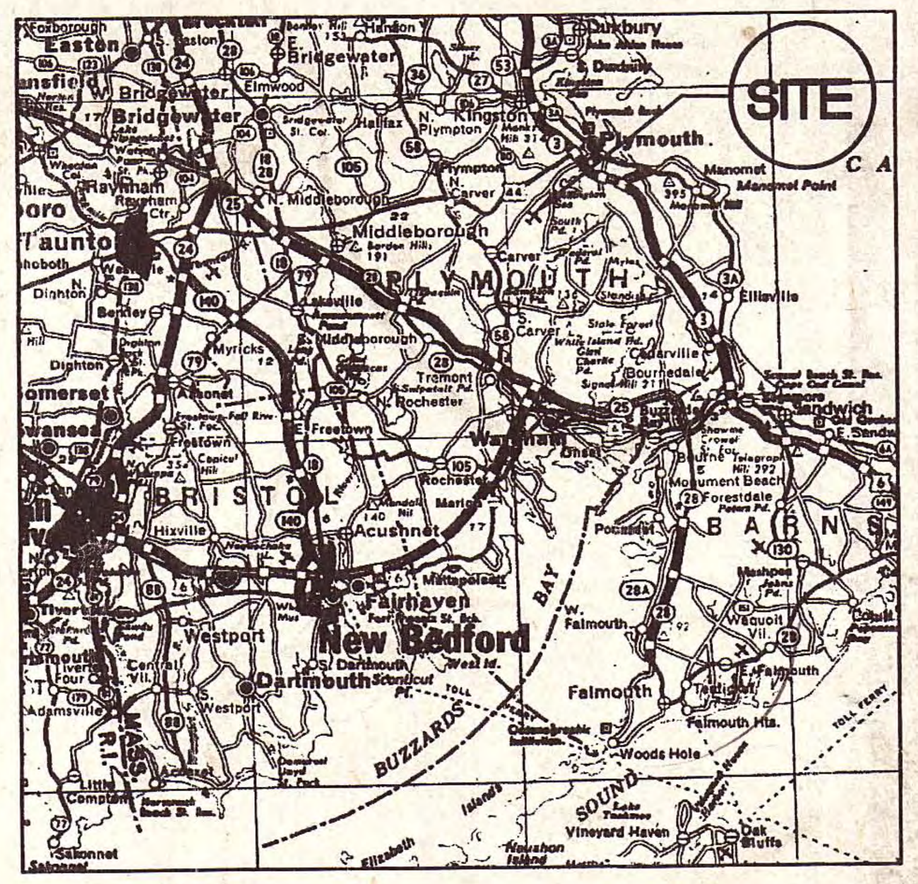
PLYMOUTH MUNICIPAL AIRPORT

PLYMOUTH, MASSACHUSETTS

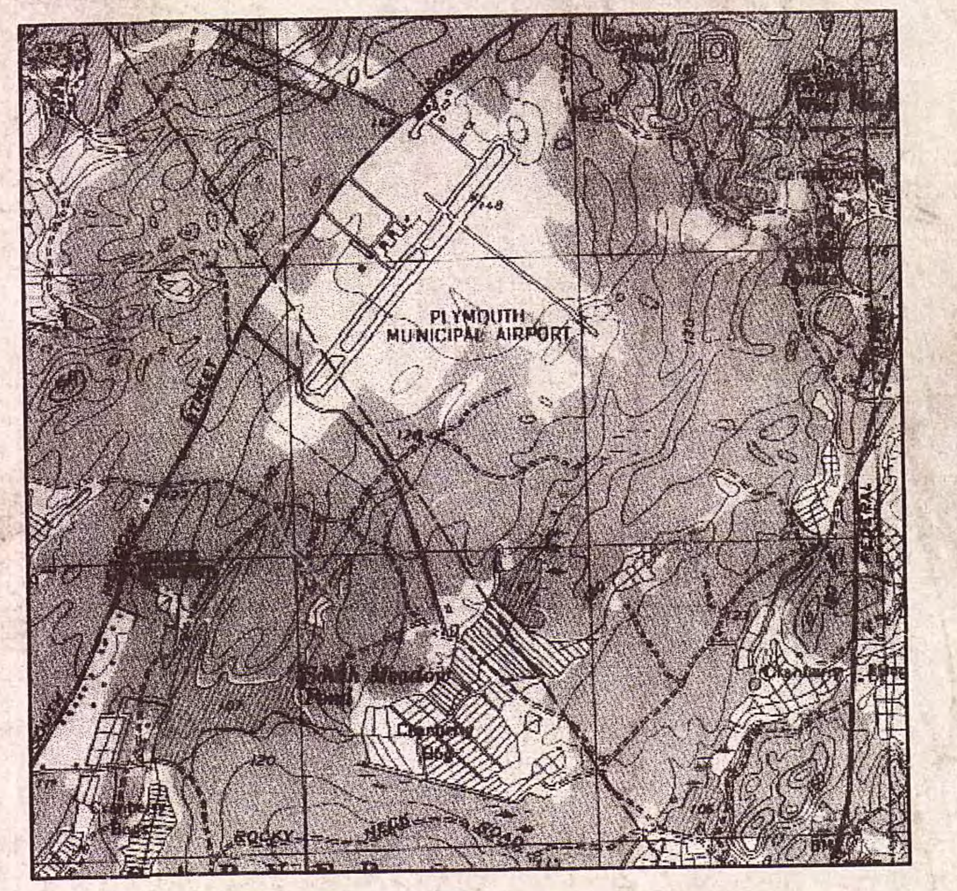
WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM

ASMP 2000 PYM-06



LOCATION MAP

APPROX. SCALE: 1" = 3 MILES



VICINITY MAP

APPROX. SCALE: 1"=2000'

SUMMARY OF QUANTITIES

ITEM#	DESCRIPTION	UNIT	QUANTITIES EST.	QUANTITIES AS BUILT
1	WASTEWATER TREATMENT PLANT	LS	1	
2	GRAVEL ACCESS ROAD	LS	1	
3	CENTRAL WASTEWATER PUMPING STATION	LS	1	
4	NORTHEAST WASTEWATER PUMPING STATION	LS	1	
5	SINGLE BUILDING PUMP STATIONS	EACH	2	
6	8" SANITARY SEWER MAIN	LF	3,500	
7	6" SANITARY SEWER MAIN	LF	2,000	
8	3" FORCE MAIN	LF	4,500	
9	2" FORCE MAIN	LF	1,700	
10	1.5" FORCE MAIN	LF	1,500	
11	AIR RELEASE VALVE	EACH	6	
12	PRECAST CONCRETE SEWER MANHOLE	EACH	20	
13	BUILDING SEWER CONNECTION	LF	3,000	
14	ABANDON EXISTING SEWER SYSTEMS	EACH	20	
15	3 PHASE ELECTRICAL SERVICE	LS	1	

SUMMARY OF QUANTITIES – BID ALTERNATE #1

ITEM#	DESCRIPTION	UNIT	QUANTITIES EST.	QUANTITIES AS BUILT
16	8" CHAIN LINK FENCE	LF	525	

SUMMARY OF QUANTITIES – BID ALTERNATE #2

ITEM#	DESCRIPTION	UNIT	QUANTITIES EST.	QUANTITIES AS BUILT
17	6" PVC SAMPLE PORTS	EACH	23	

SUMMARY OF QUANTITIES – BID ALTERNATE #3

ITEM#	DESCRIPTION	UNIT	QUANTITIES EST.	QUANTITIES AS BUILT
18	POTABLE WELL AND SERVICE LINE	LS	1	

SUMMARY OF QUANTITIES – BID ALTERNATE #4

ITEM#	DESCRIPTION	UNIT	QUANTITIES EST.	QUANTITIES AS BUILT
19	12" WATERMAIN	LF	3,280	

SUMMARY OF QUANTITIES – BID ALTERNATE #5

ITEM#	DESCRIPTION	UNIT	QUANTITIES EST.	QUANTITIES AS BUILT
20	2" WATER SERVICE MAIN	LF	1,000	

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

INDEX OF DRAWINGS

BIDDING DOCUMENTS

COPY NO 16

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MASSACHUSETTS AERONAUTICS COMM.

APPROVED: DIRECTOR DATE

APPROVED: AIRPORT ENGINEER DATE

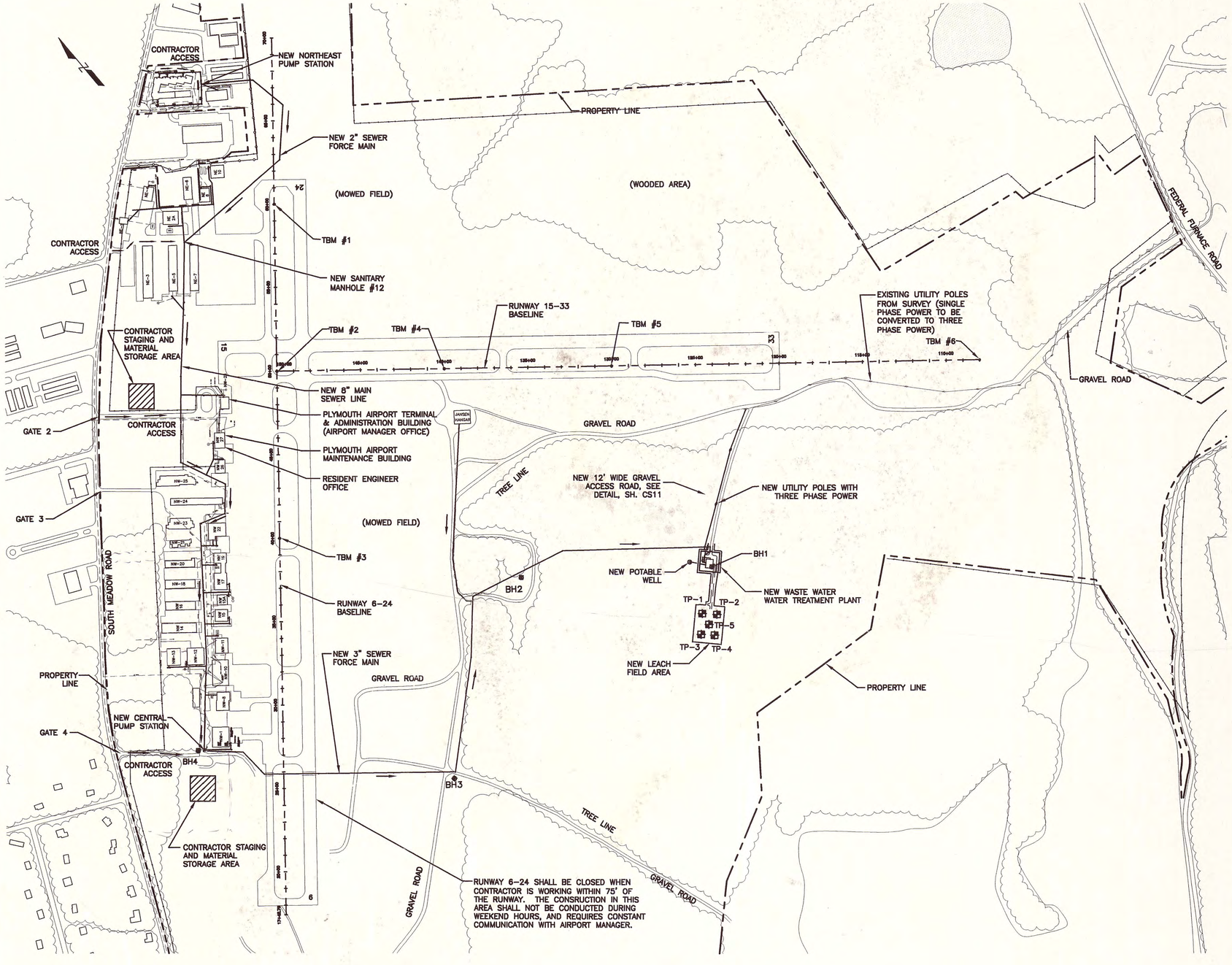
PLYMOUTH AIRPORT COMMISSION
TOWN OF PLYMOUTH

APPROVED: CHAIRMAN DATE

COMMONWEALTH OF MASSACHUSETTS
WILLIAM J. KEATING
CIVIL
No. 40566
REGISTERED PROFESSIONAL ENGINEER

PREPARED BY
DuBOIS AND KING, INC.
100 PERIMETER ROAD..........NASHUA, N.H. 03063..........TEL. (603) 883-0463

APPROVED: DATE



GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

GENERAL NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES PRIOR TO ACTUAL CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.

2. TEMPORARY BENCHMARKS ARE LOCATED AS SHOWN:

	ELEVATION	DESCRIPTION	STATION
TBM1	147.18	BASELINE STONE BOUND	60+00
TBM2	145.05	BASELINE STONE BOUND	50+00 (BASELINE #1)
			150+00 (BASELINE #2)
TBM3	140.90	BASELINE STONE BOUND	40+00
TBM4	142.85	BASELINE STONE BOUND	140+00
TBM5	137.20	BASELINE STONE BOUND	130+00
TBM6	130.61	BASELINE IRON ROD	108+00

3. CONTRACTOR TO VERIFY ELEVATIONS OF TEMPORARY BENCHMARKS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

4. ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS WILL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO COST TO THE OWNER.

CONSTRUCTION AND OPERATIONAL NOTES:

1. RUNWAY 15-33 SHALL BE OPEN AT ALL TIMES.

2. ALL WORK WITHIN 20 FEET OF THE EDGE OF THE 6-24 TAXIWAY MUST HAVE A FLAGMAN PRESENT TO MAINTAIN SEPARATION BETWEEN AIRCRAFT AND CONSTRUCTION EQUIPMENT. DURING NON-CONSTRUCTION HOURS OF THE PROJECT THERE SHALL BE NO ABRUPT GRADE CHANGES OF MORE THAN 1-1/2" OR 2% WITHIN 20 FEET OF AIRCRAFT OPERATIONS AREAS.

3. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT AND ABIDE BY, A SCHEDULE OF WORK FOR APPROVAL PRIOR TO STARTING ANY CONSTRUCTION. ANY PROPOSED DEVIATION FROM THIS SCHEDULE WILL REQUIRE ANOTHER SUBMISSION AND APPROVAL PRIOR TO ANY CHANGE.

4. CONSTRUCTION DURATION FOR THE PROJECT IS 24 WEEKS.

5. NOTICE TO AIRMAN (NOTAM'S) MUST BE ISSUED, BY THE AIRPORT MANAGER, PRIOR TO STARTING WORK IN EACH AREA. NOTAM'S MUST BE ISSUED AT LEAST 48 HOURS IN ADVANCE OF ANY AIRPORT STATUS CHANGE. THERE CAN BE NO EXCEPTIONS. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE WITH THE AIRPORT MANAGER.

6. CONSTRUCTION EQUIPMENT WILL ONLY BE ALLOWED TO USE EXISTING PAVED AIRPORT SURFACES FOR ACCESS OR OPERATION DURING CONSTRUCTION AS SHOWN ON THIS PLAN.

7. THE CONTRACTOR WILL BE REQUIRED TO INSTALL AND MAINTAIN LIGHTED BARRICADES AS NECESSARY THROUGHOUT CONSTRUCTION. THESE BARRICADES SHALL CONFORM TO THE SAFETY PLAN FOR AIRPORT OPERATIONS DURING CONSTRUCTION SPECIFICATION (SGP SECTION 48). THESE BARRICADES ARE SUBSIDIARY TO THE PROJECT AND WILL NOT HAVE A SEPARATE PAY ITEM.

8. ALL EXISTING SEPTIC SYSTEMS SHALL BE ABANDONED AFTER NEW SEWER SYSTEM IS COMPLETED AND OPERATIONAL. CONNECT NEW SERVICE LINE TO NEW SEWER MAIN ON SAME DAY EXISTING SEPTIC SYSTEM IS ABANDONED. CONTRACTOR TO NOTIFY INDIVIDUAL OCCUPANTS OF TEMPORARY SHUT-DOWN OF SYSTEM DURING CONSTRUCTION.

9. REFER TO SPECIFICATIONS FOR BOREHOLE AND TEST PIT LOCATIONS.

TEST PITS:

TP-1 DATA

DATE: 01-11-2001
0 - 4" 2/2, 10YR
4 - 22" 4/6, 10YR
22 - 120" 6/4, 10YR
ESHWT ≥120"
NO MOTTLING
NO WATER ENCOUNTERED
NO LEDGE

TP-4 DATA

DATE: 01-11-2001
0 - 5" 2/2, 10YR
5 - 24" 4/6, 10YR
24 - 120" 6/4, 10YR
ESHWT ≥120"
NO MOTTLING
NO WATER ENCOUNTERED
NO LEDGE

TP-2 DATA

DATE: 01-11-2001
0 - 4" 2/2, 10YR
4 - 26" 4/6, 10YR
26 - 120" 6/4, 10YR
ESHWT ≥120"
NO MOTTLING
NO WATER ENCOUNTERED
NO LEDGE

TP-5 DATA

DATE: 01-11-2001
0 - 5" 2/2, 10YR
5 - 24" 4/6, 10YR
24 - 130" 6/4, 10YR
ESHWT ≥130"
NO MOTTLING
NO WATER ENCOUNTERED
NO LEDGE
PERC RATE - ≤2 MIN/INCH

TP-3 DATA

DATE: 01-11-2001
0 - 3" 2/2, 10YR
3 - 22" 4/6, 10YR
22 - 120" 6/4, 10YR
ESHWT ≥120"
NO MOTTLING
NO WATER ENCOUNTERED
NO LEDGE

APPROVED
MASS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

GENERAL PLAN

DRAWN BY MDL	DATE JUNE 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13816F50012
SHEET G1	

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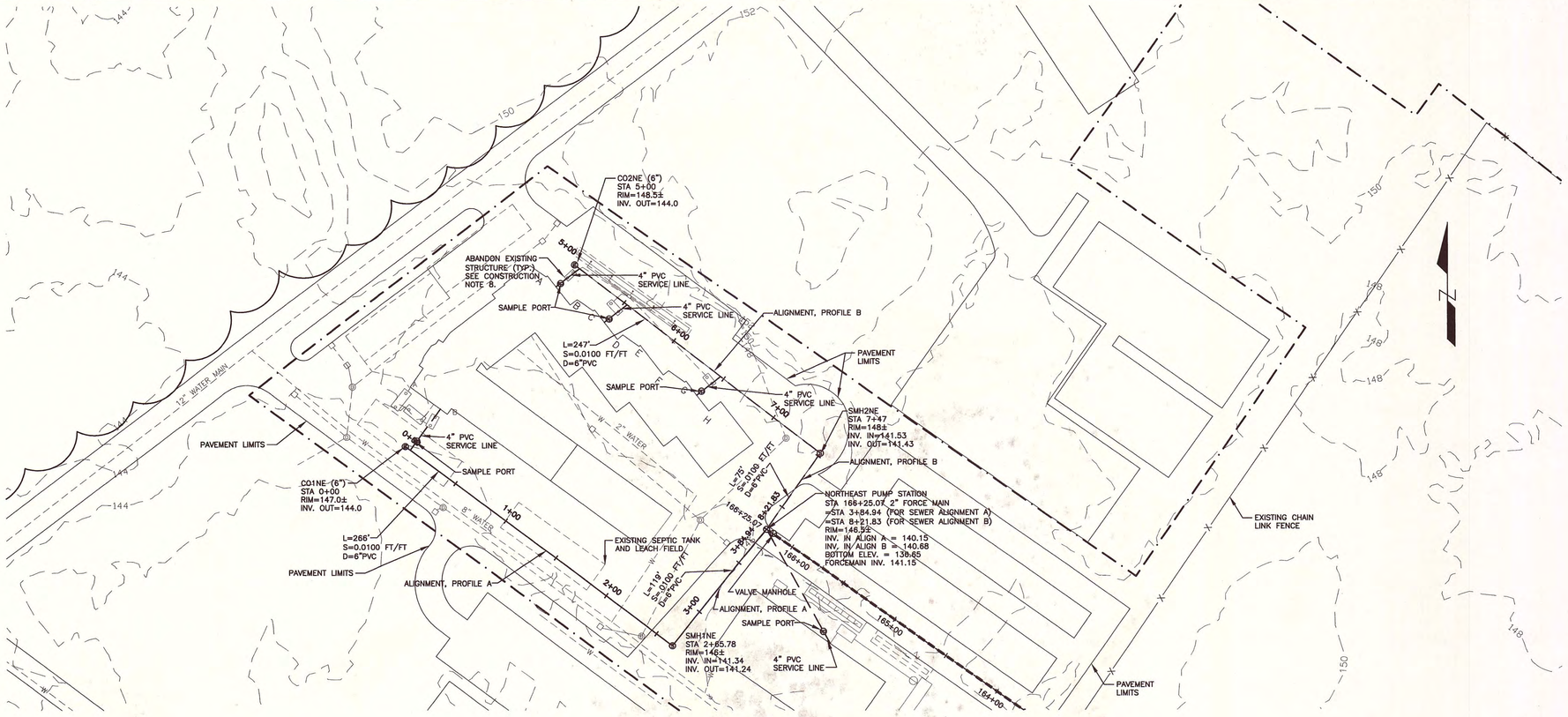
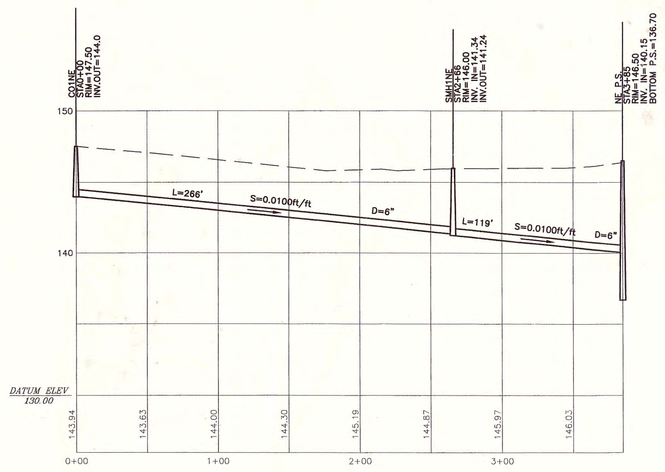


GRAPHIC SCALE

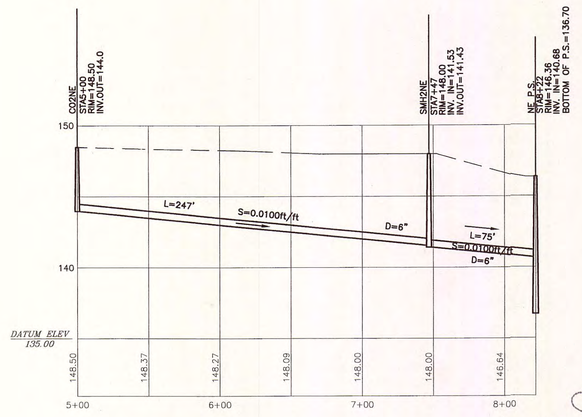
50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTE:
STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6-24 BASELINE.



PROFILE A



PROFILE B

GRAPHIC SCALE

HORIZONTAL 1" = 50'

50 0 25 50 100 200

5 0 2.5 5 10 20

VERTICAL 1" = 5'

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

MINIMALL
PLAN & PROFILES

DRAWN BY MDL	DATE JUNE 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13816F50016
SHEET CS1	

APPROVED
DEPARTMENT OF PROTECTION
AUG 22 2001

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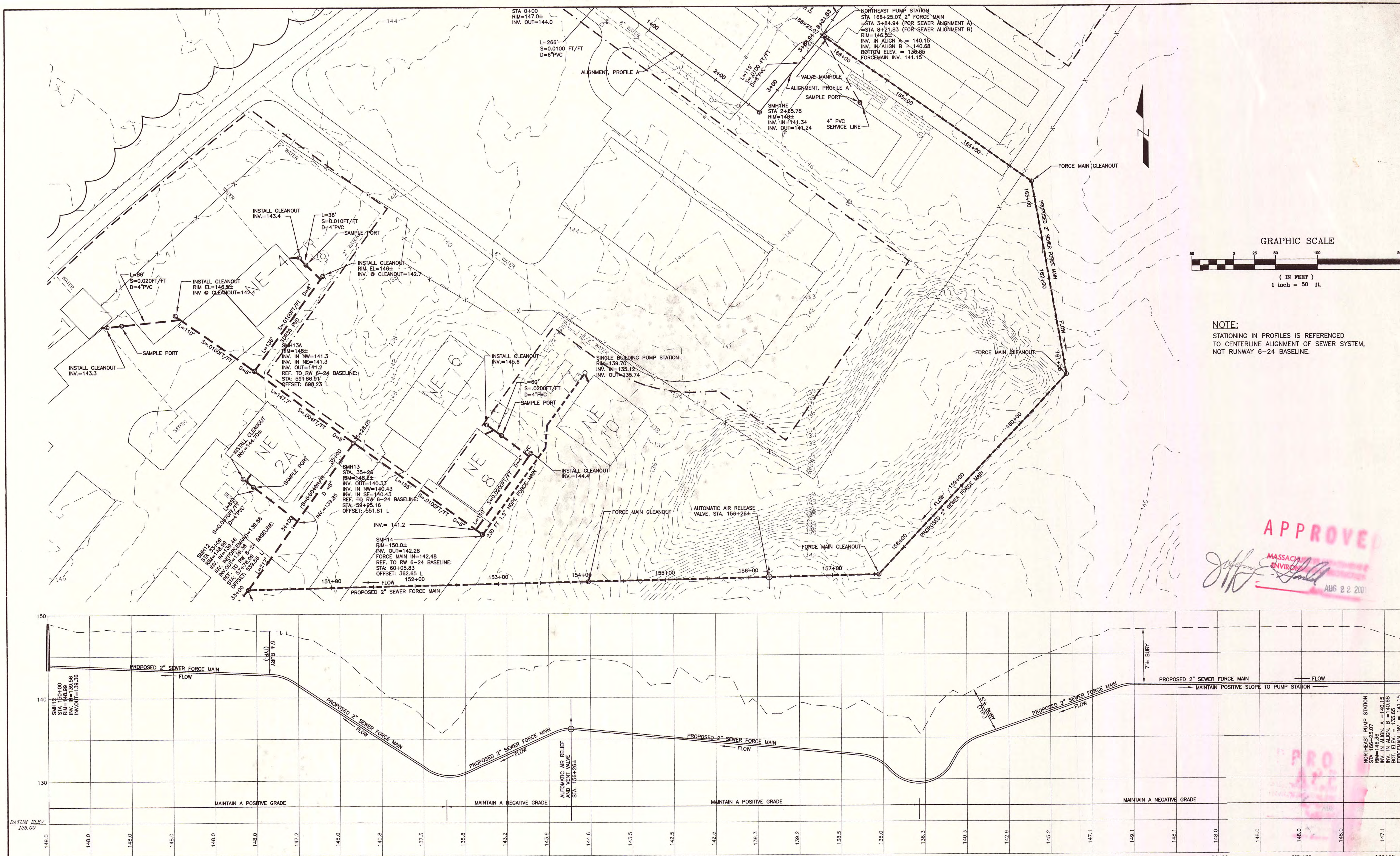
NORTHEAST PUMP STATION
STA 166+25.07, 2" FORCE MAIN
=STA 3+84.94 (FOR SEWER ALIGNMENT A)
=STA 8+21.83 (FOR SEWER ALIGNMENT B)
INV. IN ALIGN A = 140.15
INV. IN ALIGN B = 140.68
FORCEMAIN INV. 141.15
FORCE MAIN CLEANOUT
GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.
NOTE:
STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6-24 BASELINE.
PROPOSED 2" SEWER FORCE MAIN
SINGLE BUILDING PUMP STATION
RIM=139.70
INV. IN=135.12
INV. OUT=135.74
AUTOMATIC AIR RELEASE VALVE, STA. 156+26±
SMH13A
RIM=148±
INV. IN NW=141.3
INV. IN NE=141.3
INV. OUT=141.2
REF. TO RW 6-24 BASELINE:
STA: 59+86.91
OFFSET: 698.23 L
SMH13
STA. 35+28
INV. OUT=140.33
INV. IN NW=140.43
INV. IN SE=140.43
REF. TO RW 6-24 BASELINE:
STA: 59+95.16
OFFSET: 551.81 L
SMH14
RIM=150.0±
INV. OUT=142.28
FORCE MAIN IN=142.48
REF. TO RW 6-24 BASELINE:
STA: 60+05.83
OFFSET: 362.65 L
INSTALL CLEANOUT
SAMPLE PORT
VALVE MANHOLE
ALIGNMENT, PROFILE A
4" PVC SERVICE LINE
MAINTAIN A POSITIVE GRADE
MAINTAIN A NEGATIVE GRADE
MAINTAIN POSITIVE SLOPE TO PUMP STATION
AUTOMATIC AIR RELIEF AND VENT VALVE STA. 156+26±
DATUM ELEV 125.00
FLOW
APPROVED
AUG 22 2001

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

FORCE MAIN #2
FROM NORTHEAST PUMP STATION, PLAN & PROFILE
STA. 150+00 TO 166+25.07

GRAPHIC SCALE
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

DRAWN BY: MDL	DATE: JUNE 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: JAA	DRAW. NO.: C13816F50001
SHEET	CS2

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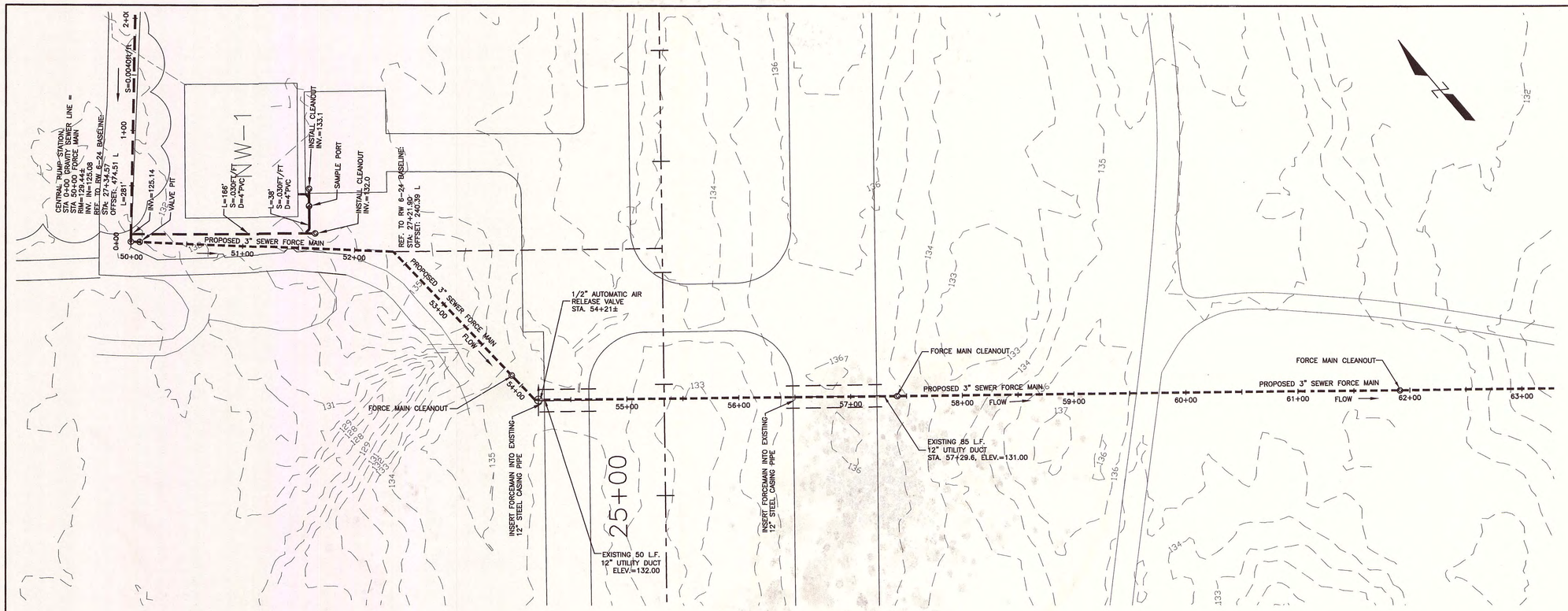
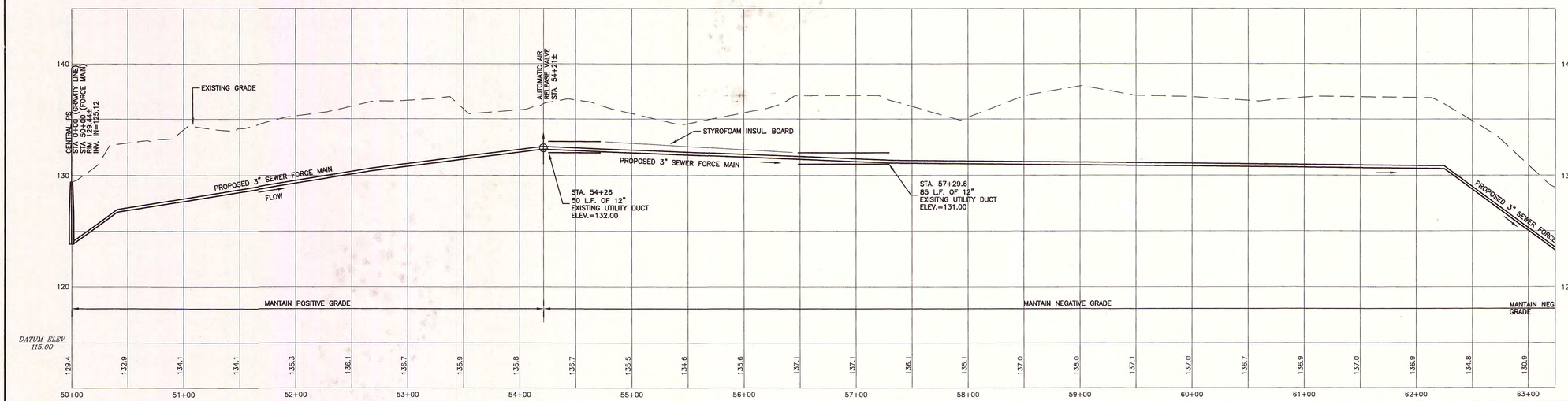


GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTE:
STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6–24 BASELINE.



GRAPHIC SCALE
HORIZONTAL 1" = 50'

50 0 25 50 100 200

5 0 2.5 5 10 20

VERTICAL 1" = 5'

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MASSACHUSETTS DEPARTMENT OF
AUG 28 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT
AND COLLECTION SYSTEM

FORCE MAIN #1
FROM CENTRAL PUMP
STATION, PLAN & PROFILE
STA. 50+00 TO 63+00

DRAWN BY MDL	DATE JUNE 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13815F50002
SHEET CS3	

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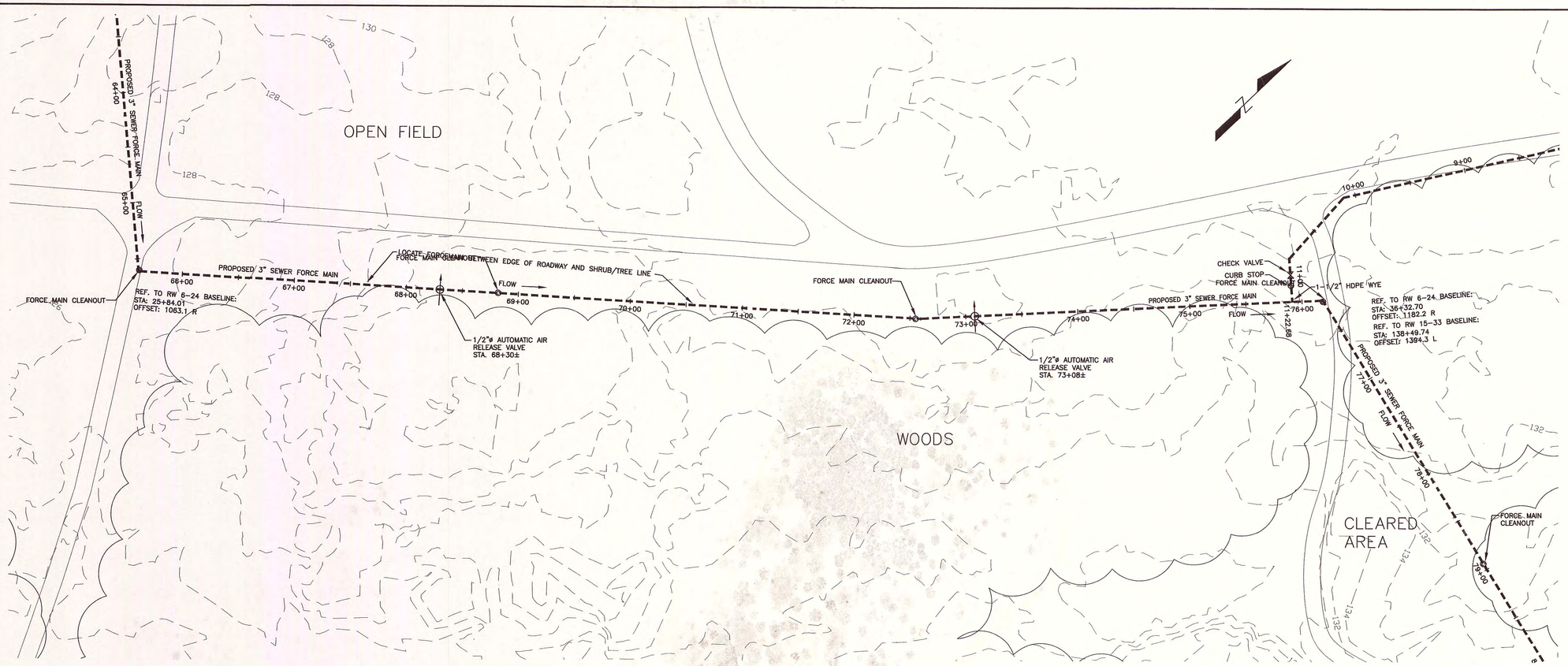
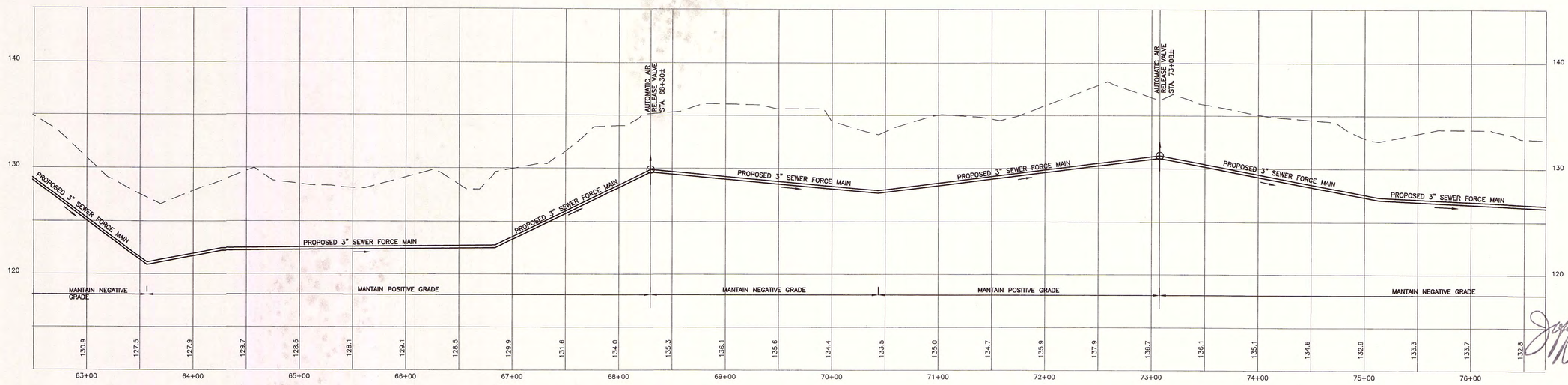


GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTE:
STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6-24 BASELINE.



GRAPHIC SCALE
HORIZONTAL 1" = 50'
50 0 25 50 100 200
5 0 2.5 5 10 20
VERTICAL 1" = 5'

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

FORCE MAIN #1
FROM CENTRAL PUMP STATION, PLAN & PROFILE
STA. 63+00 TO 76+50

DRAWN BY: MDL	DATE: JUNE 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: JAA	DRAW. NO.: C13816F50003
SHEET CS4	

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AUG 22 2001

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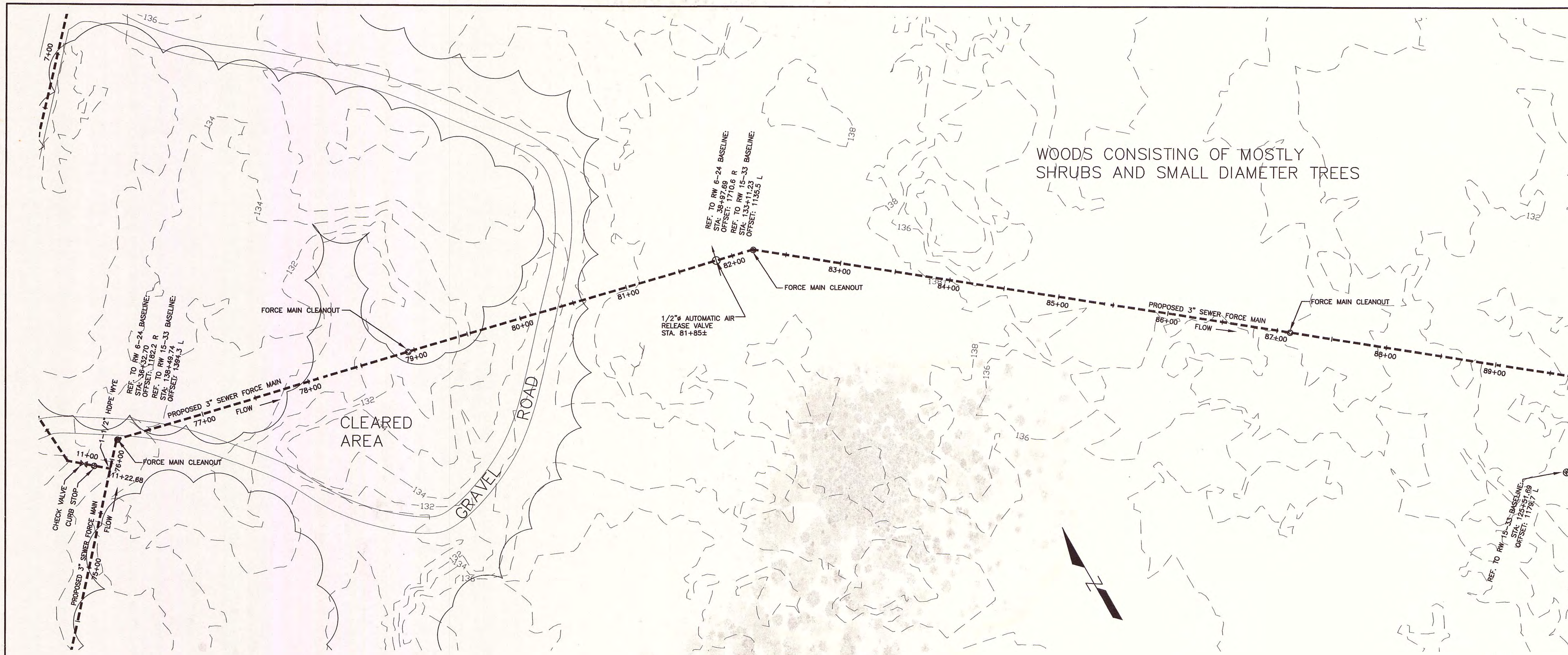

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTE:
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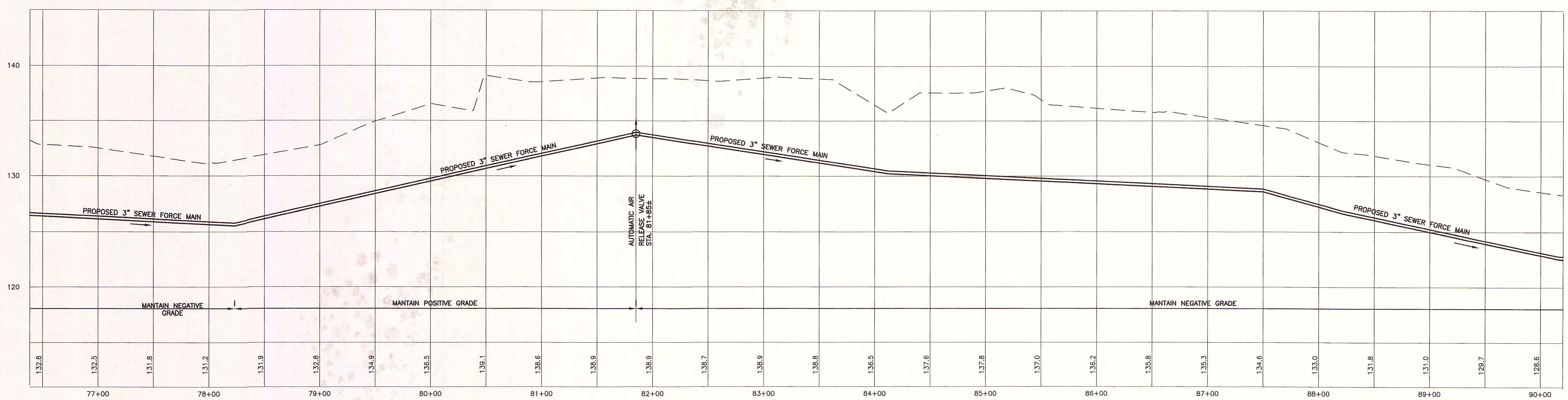

GRAPHIC SCALE
HORIZONTAL 1" = 50'
50 0 25 50 100 200
5 0 2.5 5 10 20
VERTICAL 1" = 5'

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

FORCE MAIN #1 FROM CENTRAL PUMP STATION, PLAN & PROFILE STA. 76+50 TO 90+00

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CHECKED BY:	PROJ. NO.: N13816F5
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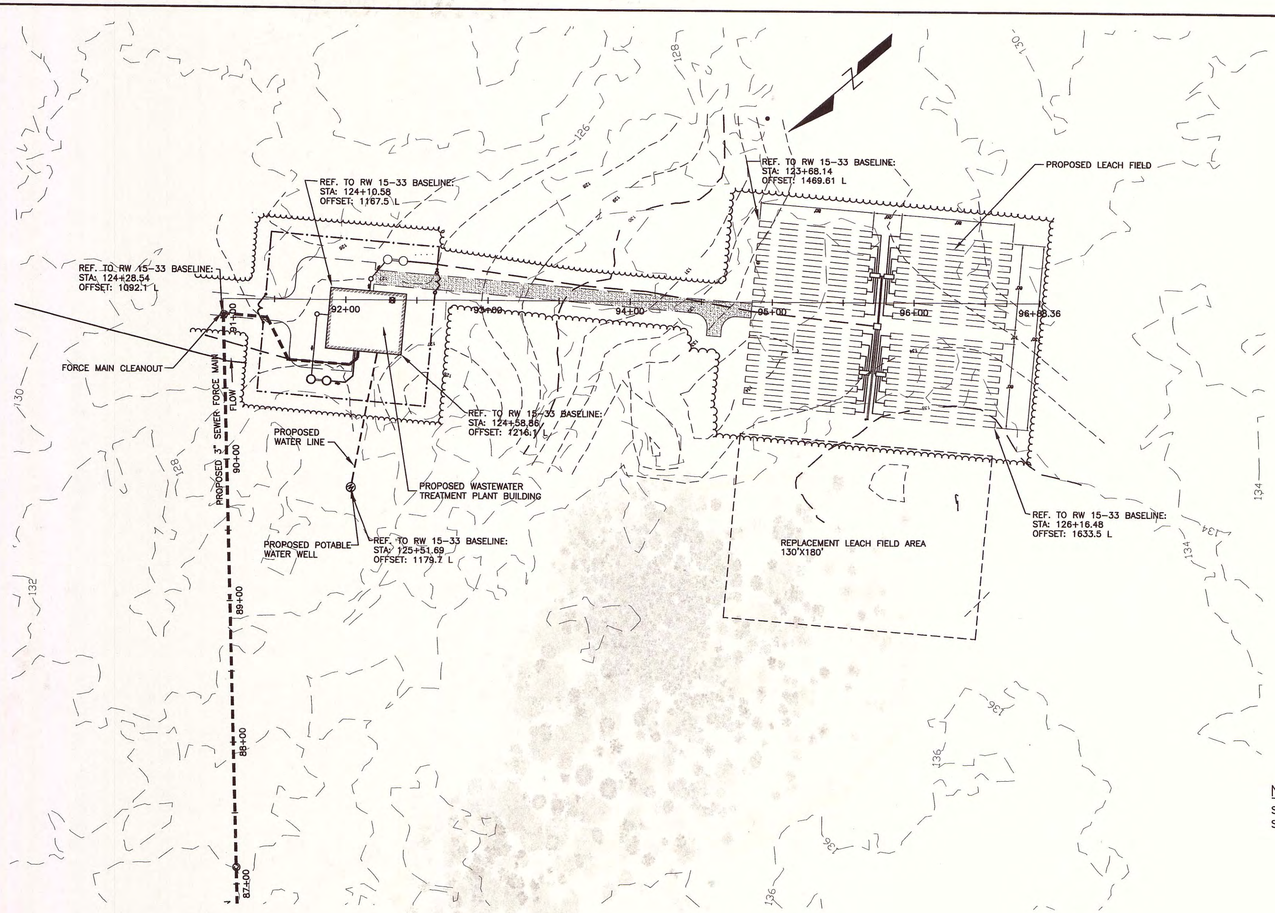


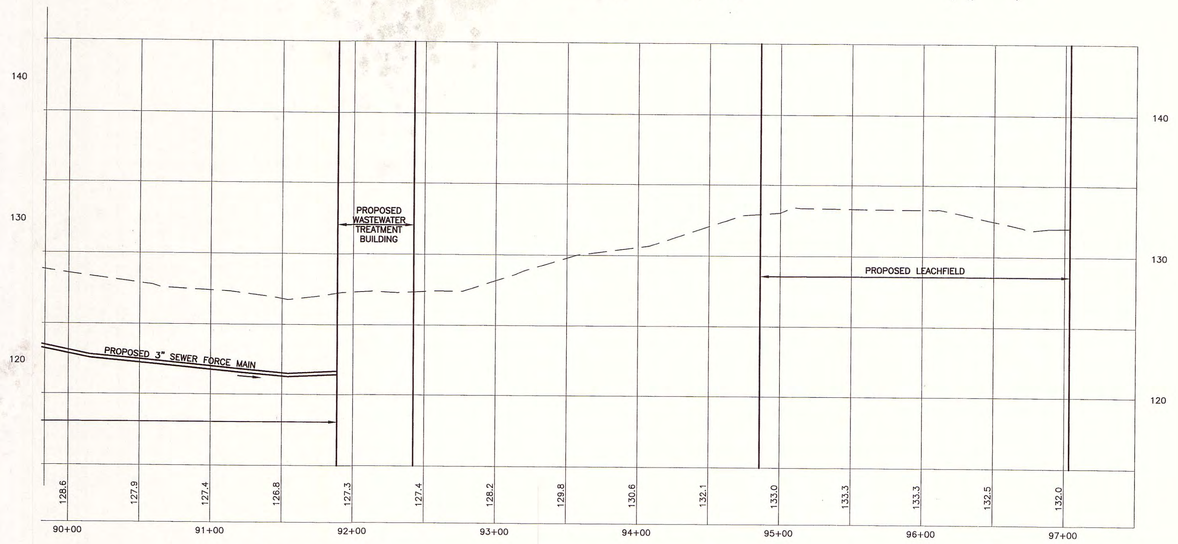
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTE:

STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6-24 BASELINE.



GRAPHIC SCALE

HORIZONTAL 1" = 50'

50 0 25 50 100 200

VERTICAL 1" = 5'

5 0 2.5 5 10 20

NO.	DATE	REVISIONS	BY	CK'D

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MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

AUG 22 2001

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

FORCE MAIN #1
FROM CENTRAL PUMP STATION, PLAN & PROFILE
STA. 90+00 TO WWTP

DRAWN BY	DATE
MDL	JUNE 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
JAA	C13816F50005
SHEET	CS6

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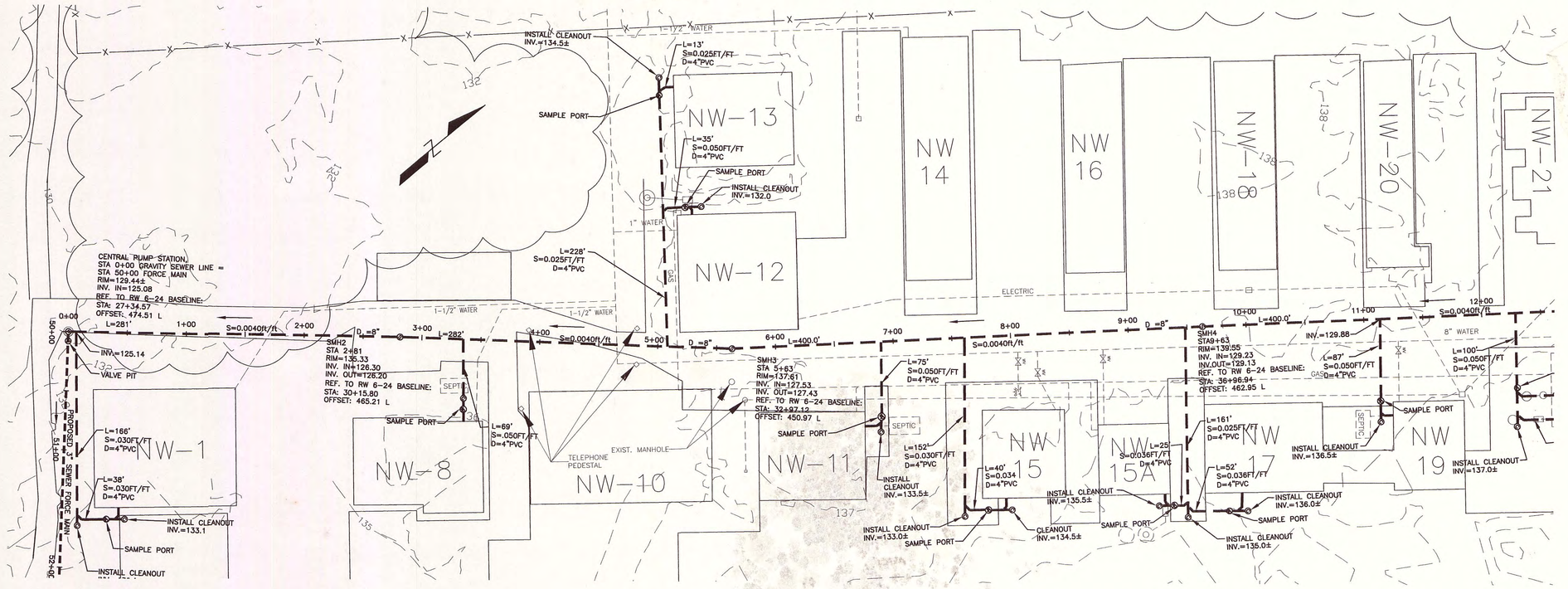

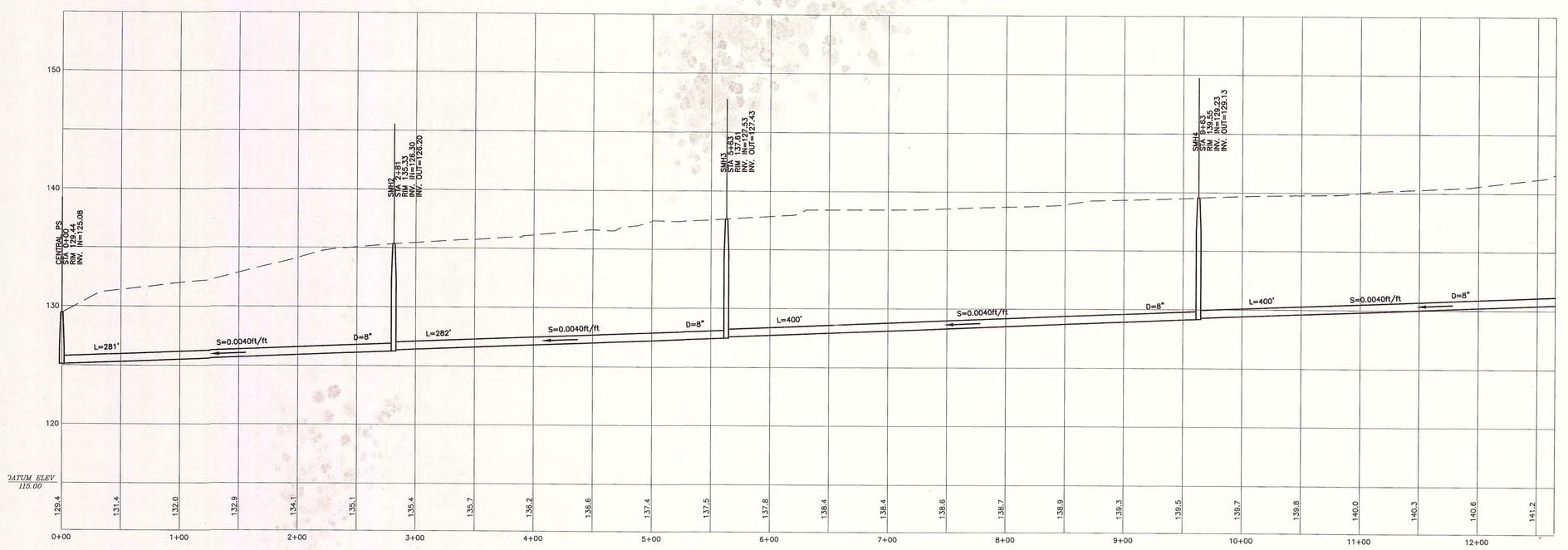

GRAPHIC SCALE

HORIZONTAL 1" = 50'

50 0 25 50 100 200

5 0 2.5 5 10 20

VERTICAL 1" = 5'

NOTE:

STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYS NOT RUNWAY 6-24 BASELINE.

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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

MAIN SEWER LINE
PLAN & PROFILE
STA. 0+00 TO 12+50

DRAWN BY MDL	DATE JUNE 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13816F50006
SHEET CS7	

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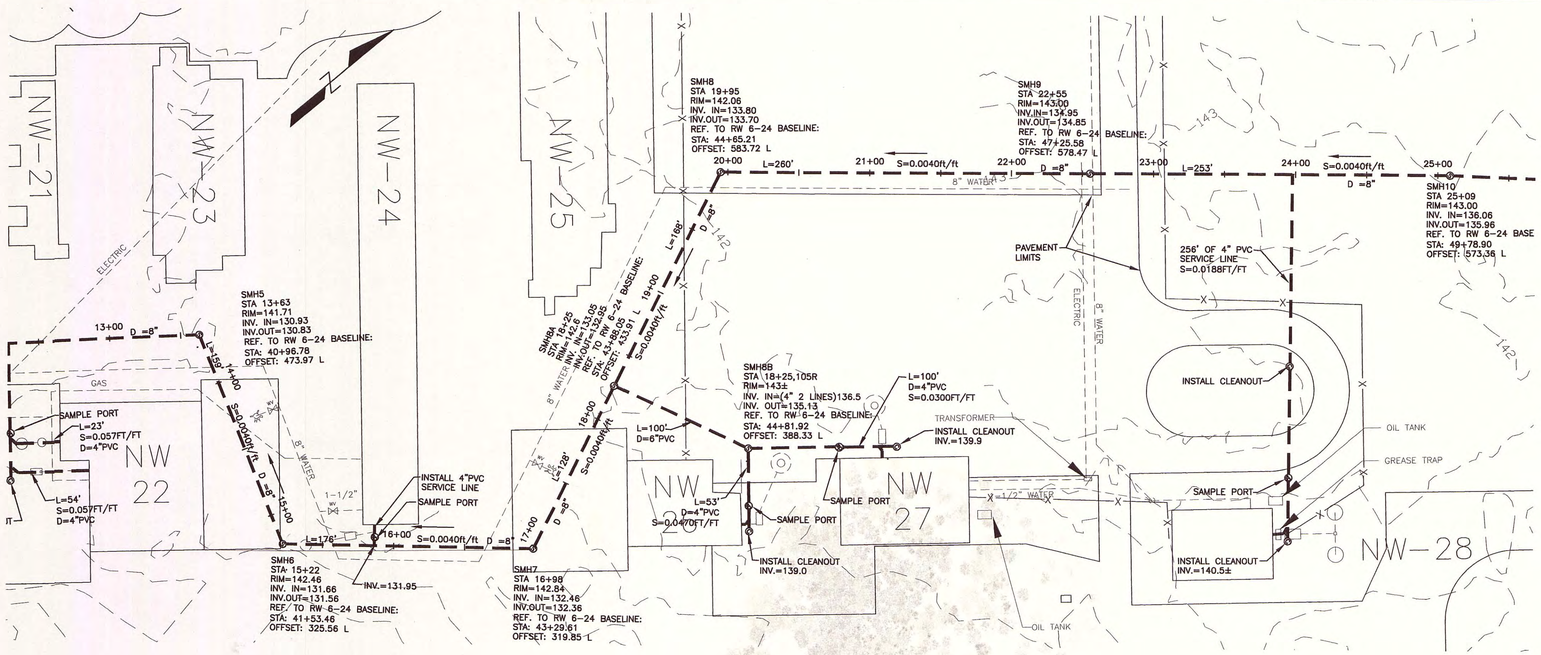
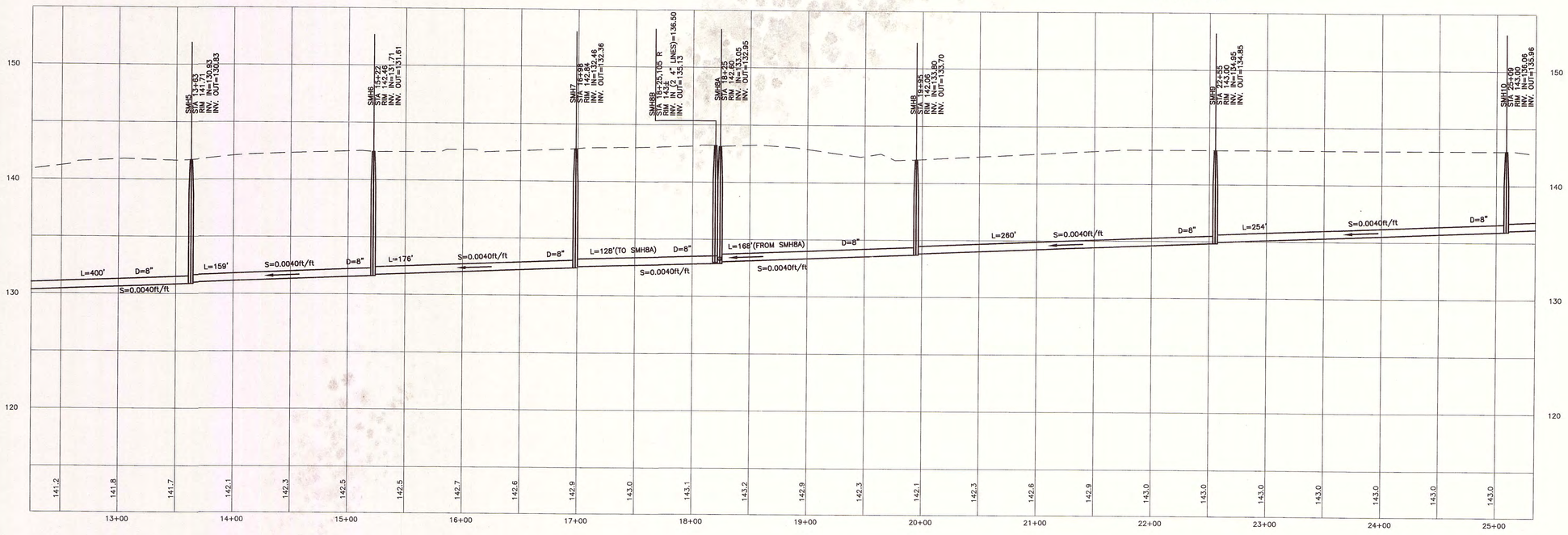


NOTE:
STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6-24 BASELINE.



GRAPHIC SCALE
HORIZONTAL 1" = 50'
50 0 25 50 100 200
5 0 2.5 5 10 20
VERTICAL 1" = 5'

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

MAIN SEWER LINE
PLAN & PROFILE
STA. 12+50 TO 25+50

DRAWN BY	DATE
MDL	JUNE 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
JAA	C13816F50007
SHEET	CS8

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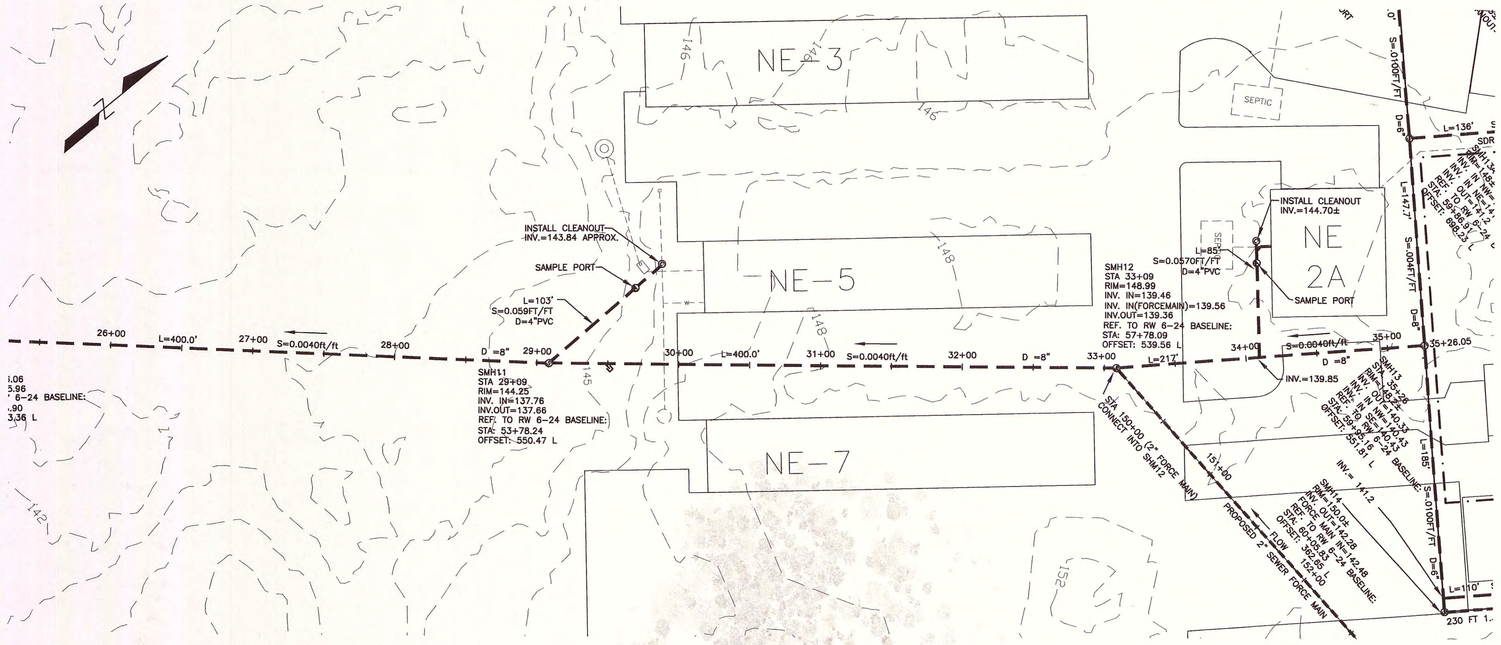
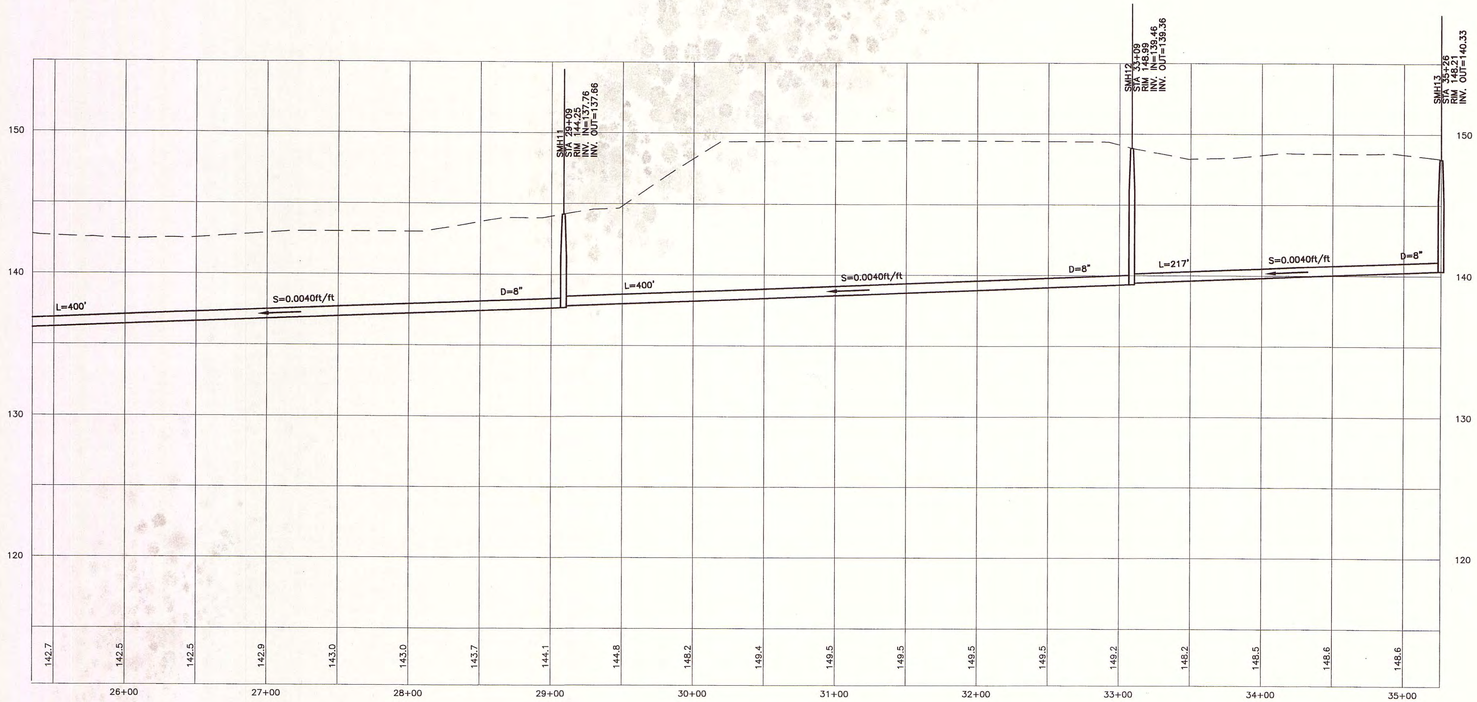


GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



GRAPHIC SCALE

HORIZONTAL 1" = 50'

50 0 25 50 100 200

VERTICAL 1" = 5'

5 0 2.5 5 10 20

NOTE:

STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6-24 BASELINE.

APPROVED

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.

engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT
AND COLLECTION SYSTEM

MAIN SEWER LINE
PLAN & PROFILE
STA. 25+00 TO 35+26.05

DRAWN BY MDL	DATE JUNE 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13816F50008
SHEET CS9	

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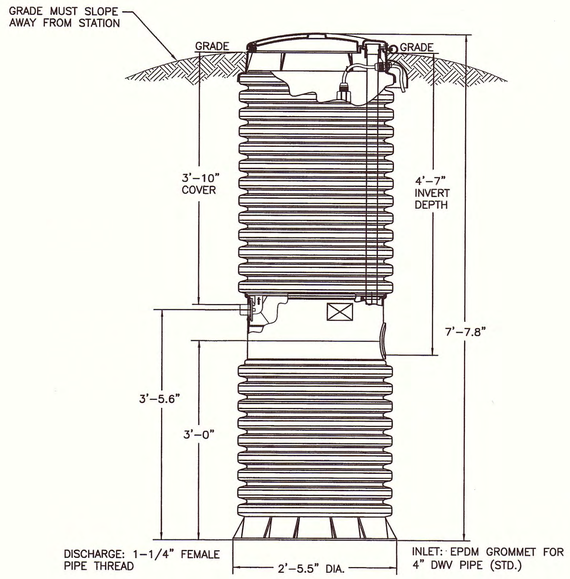
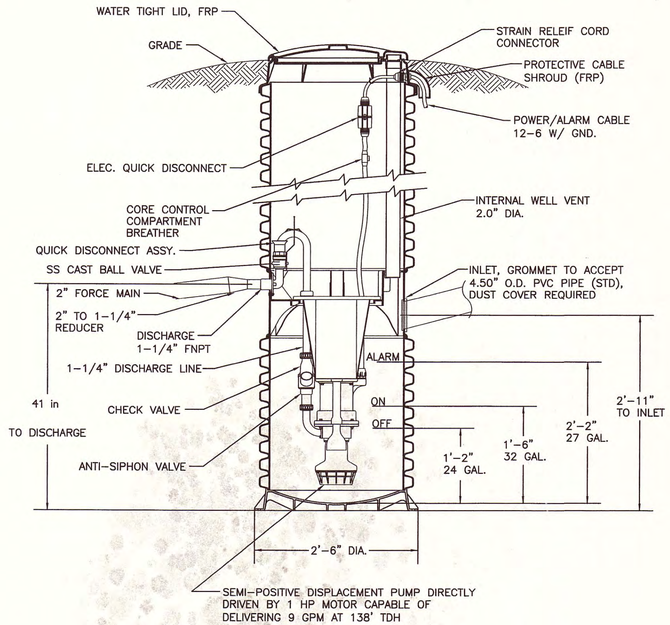


SINGLE-BUILDING PUMP
NOT TO SCALE

SINGLE BUILDING PUMP STATION SCHEDULE		
PUMP STATION DESIGNATION	NE-10 P.S.	HALF-WAY P.S.
PUMP STATION DIAMETER (OUTSIDE)	2'-5.5"	2'-5.5"
PUMP STATION LID DIAMETER	18"	18"
RIM ELEV.	139.70	140.00
BOTTOM OF WET WELL	132.60	132.90
SIZE & INVERT INLET	4.5" 135.12	4.5" 135.42
SIZE & INVERT OUTLET	1.25" 135.74	1.25" 136.04
PUMPS OFF	133.77	134.07
PUMP ON	134.10	134.40
ALARM ON	134.77	135.07
VENT PIPE DIAMETER	2"	2"

SECTION

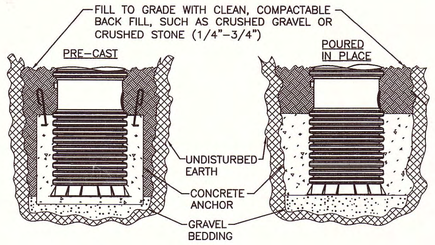
LATERAL ASSEMBLY DETAIL
NOT TO SCALE



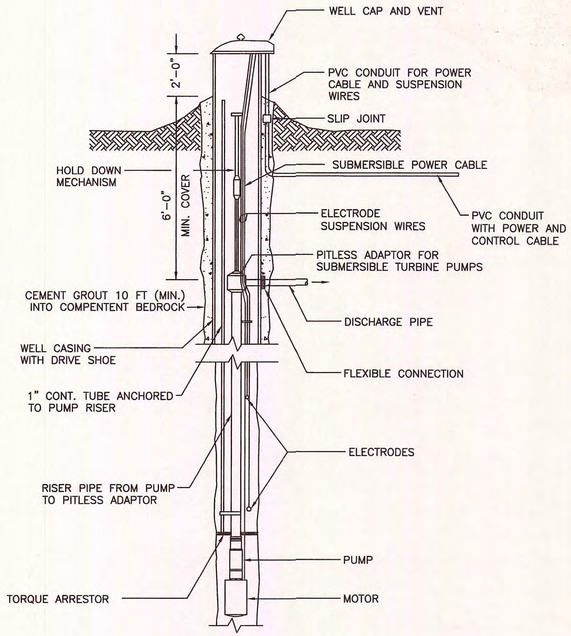
NOTES:
1. PUMP IS TO BE ENVIRONMENT ONE 2010-93 OR APPROVED EQUAL.

2. A CONCRETE ANCHOR OF 2600 LBS IS REQUIRED ON ALL MODEL 2010-93 STATIONS.

SINGLE-BUILDING PUMP DETAIL
NOT TO SCALE



CONCRETE ANCHOR
NOT TO SCALE



NOTE:
1. WELL CONSTRUCTION SHALL COMPLY WITH ALL REQUIREMENTS OF THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION.

BID ALTERNATE
WELL CONSTRUCTION DETAIL
NOT TO SCALE

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001

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DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

PUMP/WELL DETAILS

DRAWN BY	DATE
MDL	JUNE 2001
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GENERAL EROSION CONTROL GUIDELINES

1. CONSTRUCT TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL FACILITIES. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INCORPORATED IN THE SEQUENCE OF CONSTRUCTION, PRIOR TO ANY EARTHWORK OPERATIONS TO PREVENT SEDIMENT LADEN WATER FROM LEAVING THE SITE.
2. ALL AREAS THAT ARE DISTURBED DURING GRADING OPERATIONS WHICH WILL NOT BE PAVED WILL RECEIVE 3 INCHES LOAM AND SEED.
3. NATURAL VEGETATION SHALL BE RETAINED WHENEVER FEASIBLE UP TO THE SCHEDULED START OF A CONSTRUCTION ACTIVITY IN THE AREA. WHERE POSSIBLE, CLEARING SHALL IMMEDIATELY PRECEED ANY CONSTRUCTION ACTIVITY.
4. AREAS SUBJECT TO EROSION SHALL BE MINIMIZED IN TERMS OF TIME AND AREA. ALL SLOPES GREATER THAN 3:1 SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS OF THEIR COMPLETION. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER CONSTRUCTION OF SAID AREAS. DOWNSTREAM SIDE OF SOIL STOCKPILING SHALL BE PROTECTED WITH HAY BALE BARRIERS OR SILT FENCE.
5. IN GENERAL, WORK REQUIRING EROSION CONTROL INCLUDES EXCAVATIONS, FILLS, DRAINAGE, SWALES AND DITCHES, ROUGH AND FINISH GRADING, AND STOCKPILING OF EARTH.
6. EROSION CONTROL MEASURES SHALL, WHERE APPLICABLE, INCORPORATE AT LEAST THE FOLLOWING PROCEDURES DETAILED ON THIS DRAWING.

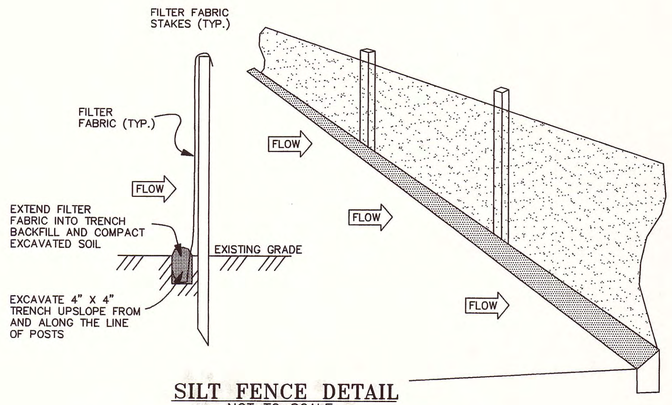
   A) TEMPORARY BARRIERS USING SILT FENCE TO PREVENT SEDIMENT LADEN WATER FROM ENTERING INCOMPLETE STORM DRAINAGE SYSTEM OR ANY WATERWAYS.

   B) IN GENERAL, SILT FENCE IS TO BE USED FOR EROSION CONTROL MEASURES. HOWEVER, HAY BALES ARE TO SUPPLEMENT THE SILT FENCE WHERE NEEDED.

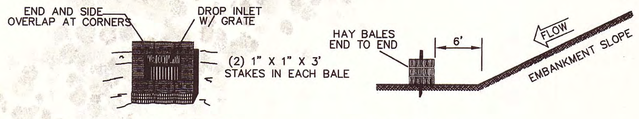
   C) TEMPORARY EARTH BERMS TO ACT AS SEDIMENT TRAPS IN AREAS OF EXTREME RUNOFF.

   D) PROVIDE TEMPORARY SLOPE EROSION CONTROL WHERE REQUIRED.

   E) FILL AND GRADING SHALL BE TREATED WITH SLOPE STABILIZATION SEEDING OR GROUND COVER AND HAY MULCH UPON COMPLETION. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INCORPORATED WHEN THE EXISTING MEASURES ARE INADEQUATE.
7. EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL THE EMBANKMENT, FINISHED GRADE IS STABILIZED AND THE FINAL CLEANING OF THE PROJECT AREA HAS BEEN COMPLETED.

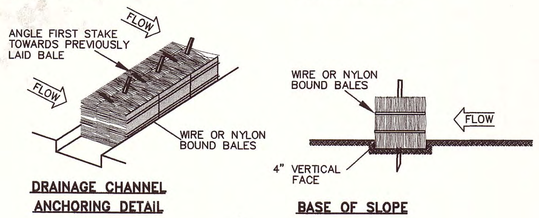


SILT FENCE DETAIL
NOT TO SCALE



AROUND CATCH BASINS

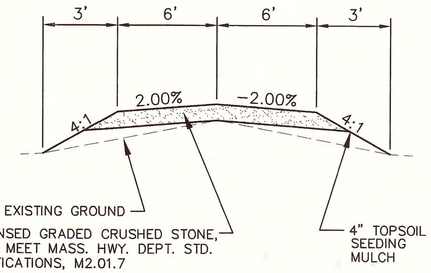
BASE OF SLOPE



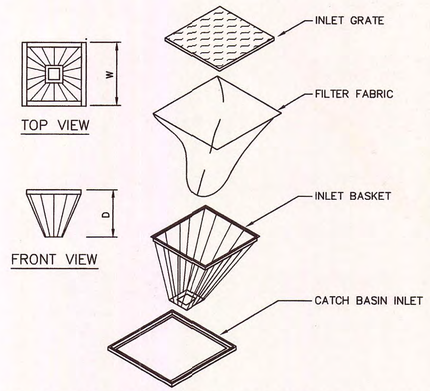
DRAINAGE CHANNEL ANCHORING DETAIL

BASE OF SLOPE

HAY OR STRAW BALE EROSION AND SEDIMENTATION BARRIER DETAILS
NOT TO SCALE



TYPICAL SECTION GRAVEL ACCESS ROAD
NOT TO SCALE



1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS IN A CONSTRUCTION AREA, UNTIL FINAL ROAD PAVING IS COMPLETE AND THERE IS NO POSSIBILITY OF SEDIMENT LADEN WATER ENTERING IT.
2. INLET BASKETS SHALL BE FURNISHED AND INSTALLED AS MANUFACTURED BY "METAL-ERA, INC.," WAUKESHA, WI., OR APPROVED EQUAL, IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND SPECIFICATIONS. BASKET FRAME CONSISTS OF COMMERCIAL GRADE STEEL ANGLES (ASTM A36). SIDES TO BE 1/8"X2"X2", BACK AND FRONT 1/8"X1"X1" WELDED IN PLACE. LENGTH AND WIDTH OF OPENING TO BE DETERMINED BY INSIDE DIMENSIONS OF EXISTING INLET GRATES OR PRE-CAST CONCRETE OPENINGS. THE SIDES OF THE INLET BASKET SHALL BE A MINIMUM OF 1/4 INCH DIAMETER STEEL RODS, APPROXIMATELY 14 INCHES DEPTH. BOTTOM FRAME TO BE 1/4"X1" FLATS 5"X5" WELDED. A MINIMUM OF 14 RODS SHALL BE WELDED IN PLACE BETWEEN THE TOP FRAME/BASKET HANGER AND THE BOTTOM FRAME. CERTAIN NON-TYPICAL INLETS MAY REQUIRE SPECIAL CONFIGURATIONS, AND/OR SHALLOWER DEPTH BASKETS.
3. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
4. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC:
   POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
   GRAB STRENGTH: 45 LB. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D1682).
   MULLEN BURST STRENGTH: MINIMUM 60 psi (ASTM D774).
5. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 120 gpm/sq. ft.
6. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.
7. INLET BASKETS SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION. THEY SHALL BE REMOVED UPON COMPLETION.

INLET FILTER BASKET
NOT TO SCALE

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001
date

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

CONSTRUCTION DETAILS AND NOTES

DRAWN BY: MDL	DATE: JUNE 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: JAA	DRAW. NO.: C13816F50011
SHEET CS11	

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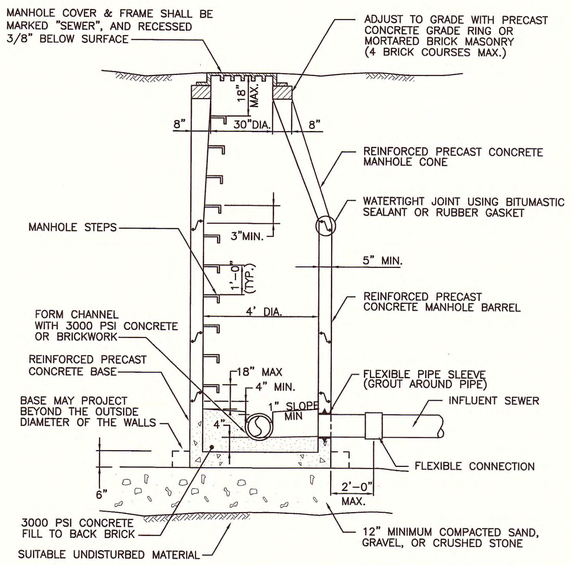
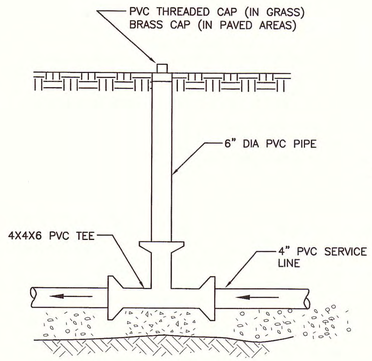


NOTES:

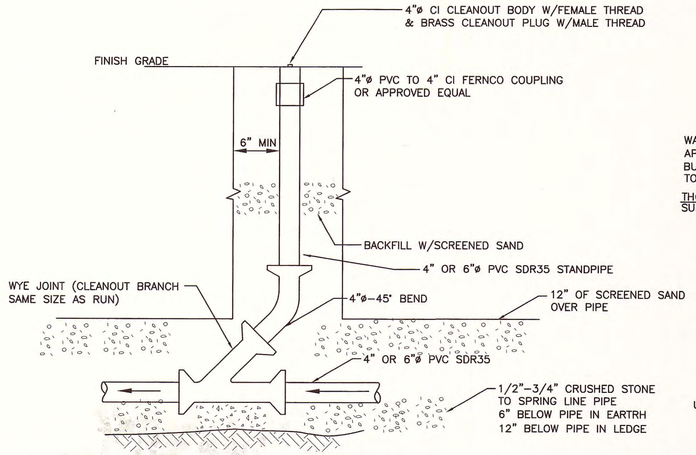
1.) WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A FLAT REINFORCED CONCRETE COVER WITH AN ECCENTRIC OPENING AND CAPABLE OF H-20 WHEEL LOADS MAY BE USED.

2.) MANHOLES SHALL BE CAPABLE OF WITHSTANDING H-20 WHEEL LOADS. ADDITIONAL REINFORCING AND/OR WALL THICKNESS MAY BE REQUIRED TO MEET THE H-20 WHEEL LOAD.

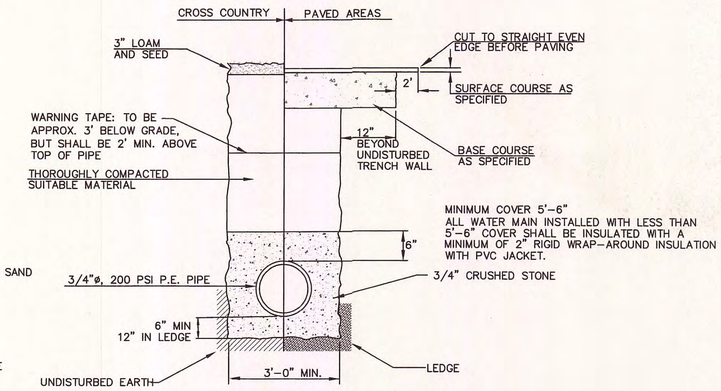
CONCRETE MANHOLE DETAIL
NOT TO SCALE



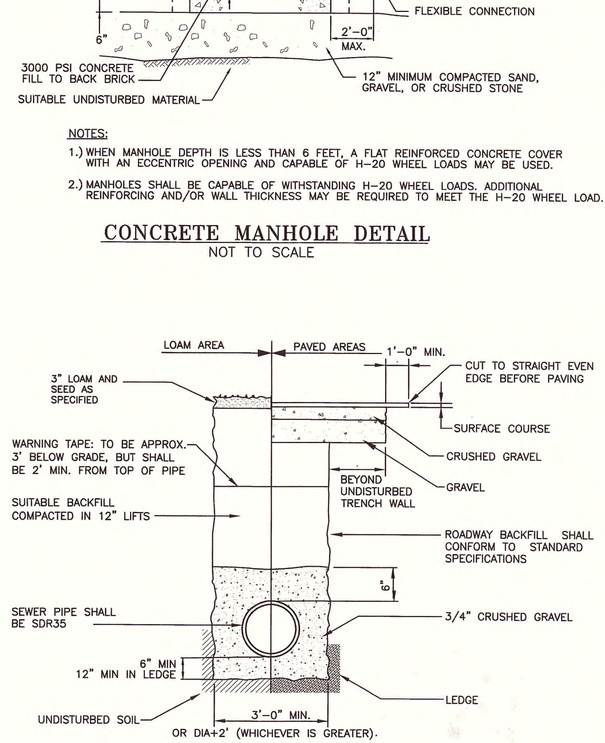
SEWER SERVICE SAMPLING PORT DETAIL
NOT TO SCALE



SEWER CLEANOUT DETAIL
NOT TO SCALE



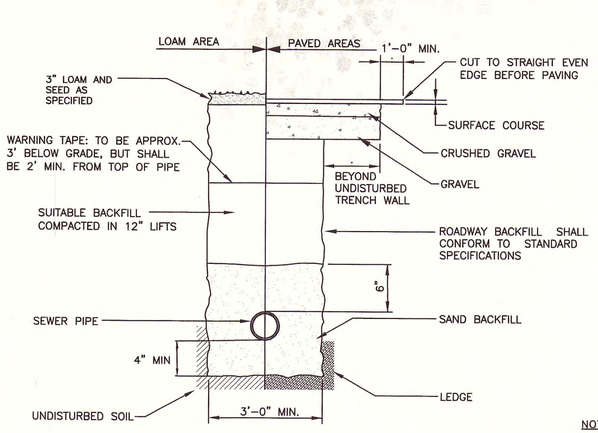
TYPICAL WATER TRENCH DETAIL
NOT TO SCALE



NOTE:

1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
2. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO SUBDIVISION SPECIFICATIONS.
3. SEE TYPICAL PARKING LOT PAVEMENT SECTION FOR PAVEMENT DEPTHS.

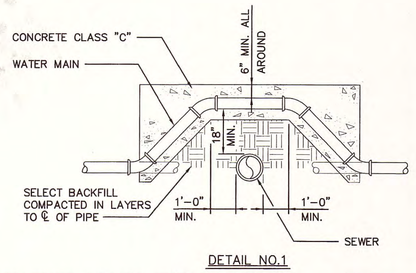
TYPICAL SEWER TRENCH DETAIL
NOT TO SCALE



NOTE:

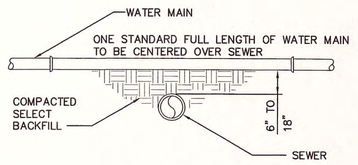
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
2. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO SUBDIVISION SPECIFICATIONS.
3. SEE TYPICAL PARKING LOT PAVEMENT SECTION FOR PAVEMENT DEPTHS.

TYPICAL FORCE MAIN TRENCH DETAIL
NOT TO SCALE



DETAIL NO.1

WATER MAIN RELOCATION - ABOVE SEWER
(PREFERRED METHOD)
NOT TO SCALE

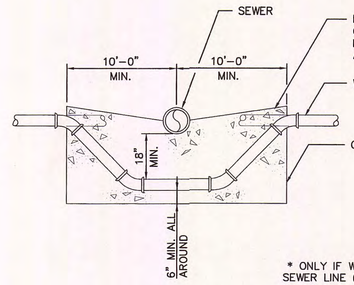


DETAIL NO.2

WATER MAIN LESS THAN 18" ABOVE SEWER
NOT TO SCALE

NOTES:

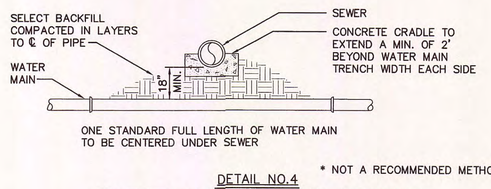
1. DETAILS NO.1 & NO.3 ALLOWABLE WATER PIPE DEFLECTIONS MAY BE USED TO ACCOMPLISH THE RELOCATIONS IN LIEU OF ELBOWS AND FITTINGS.
2. DETAILS NO.2, NO.3 & NO.4 THE SEWER PIPE SHALL BE CONSTRUCTED OR RECONSTRUCTED OF DUCTILE IRON PIPE WITH PUSH ON OR MECHANICAL JOINTS AND PRESSURE TESTED FOR AT LEAST 20' EACH SIDE OF WATER MAIN.



* ONLY IF WATER MAIN CAN NOT GO OVER SEWER LINE (NOT A RECOMMENDED METHOD)

DETAIL NO.3

WATER MAIN RELOCATION - BELOW SEWER*
NOT TO SCALE



* NOT A RECOMMENDED METHOD

DETAIL NO.4

WATER MAIN BELOW SEWER*
NOT TO SCALE

3. DETAILS NO.1, NO.2 & NO.3 & NO.4 WATER MAIN TO BE RECONSTRUCTED SHALL BE PUSH-ON OR M.J. D.I. PIPE FOR A DISTANCE OF 10 FEET EACH SIDE OF THE CENTERLINE OF THE SEWER.
4. DETAILS NO.3& NO.4 UNDER NO CIRCUMSTANCES SHALL THE SEWER BE LESS THAN 18" ABOVE THE WATER MAIN.
5. SEE SPECIFICATION 02705 FOR DETAILS, DESCRIPTIONS AND INSTRUCTIONS.

APPROVED
COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

WATER/SEWER DETAILS

DRAWN BY	DATE
MDL	JUNE 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
JAA	C13816F50009
SHEET	CS12

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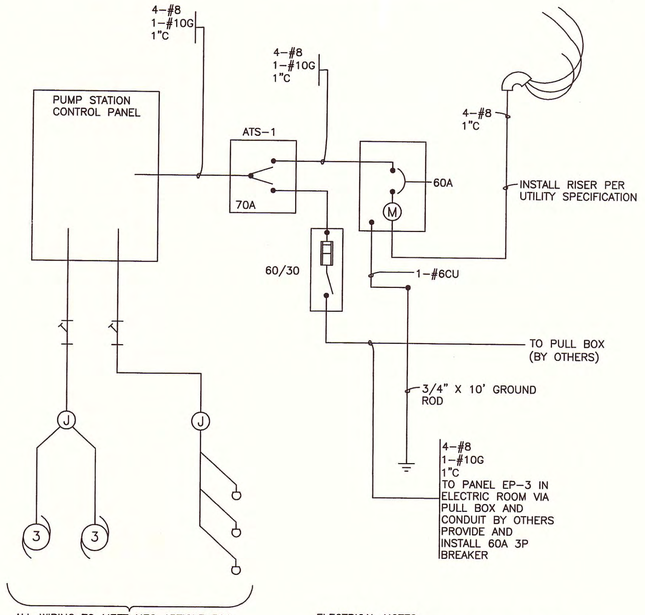
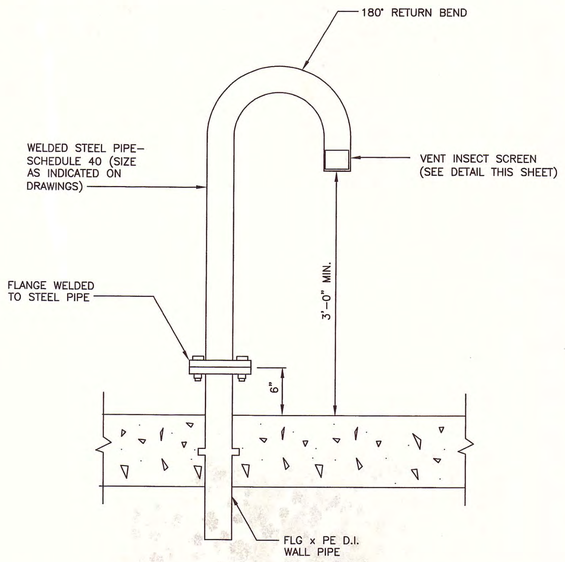


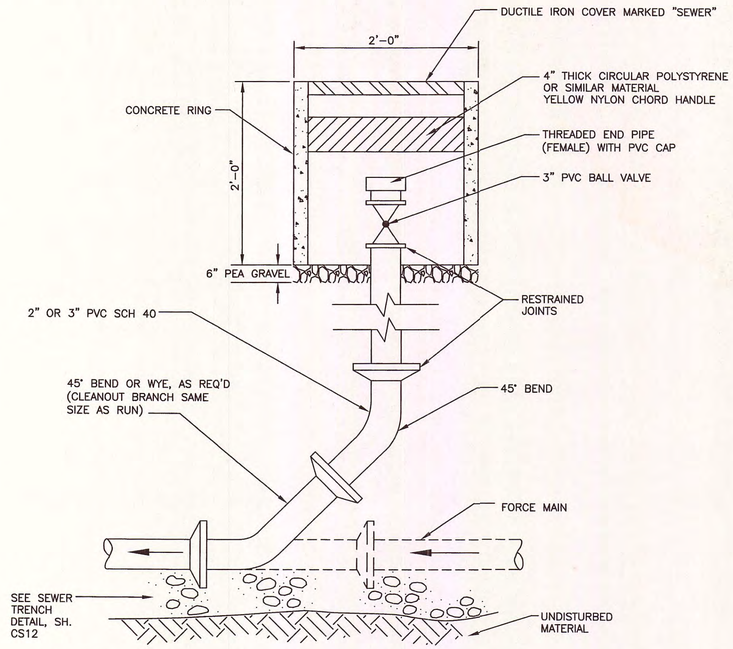
ELECTRICAL NOTES:
1. ELECTRICAL SERVICE TO BE 208/120V, 3ø, 4 W.,

2. COORDINATE REQUIREMENTS WITH POWER COMPANY. SEE SITE PLAN FOR SERVICE ENTRANCE ORIENTATION.

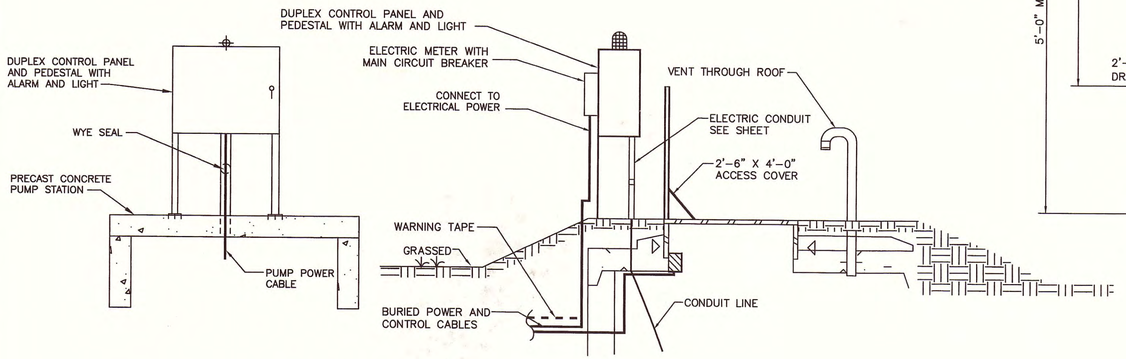
PUMP STATION WIRING DETAIL
NOT TO SCALE



VENT THROUGH ROOF DETAIL
NOT TO SCALE



FORCE MAIN CLEANOUT TO GRADE DETAIL
NOT TO SCALE



SERVICE ENTRANCE DETAIL
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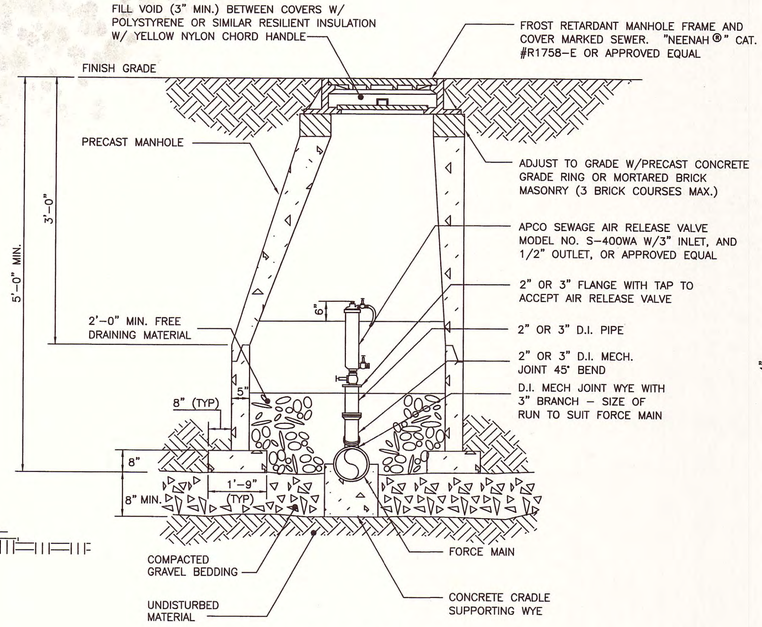
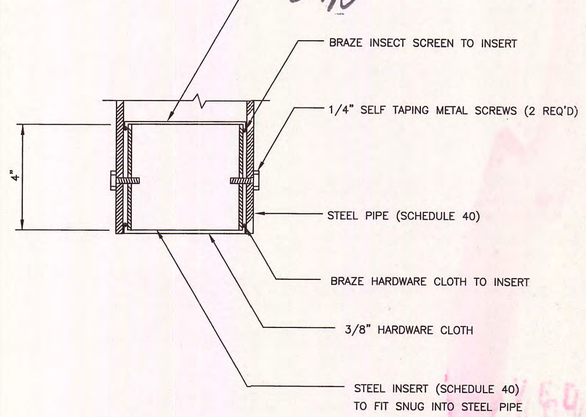


AIR RELEASE VALVE DETAIL
NOT TO SCALE

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001



VENT INSECT SCREEN DETAIL
NOT TO SCALE

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

MISCELLANEOUS DETAILS I

DRAWN BY MDL	DATE JUNE 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. SJR	DRAW. NO. C13816F50015
SHEET CS13	

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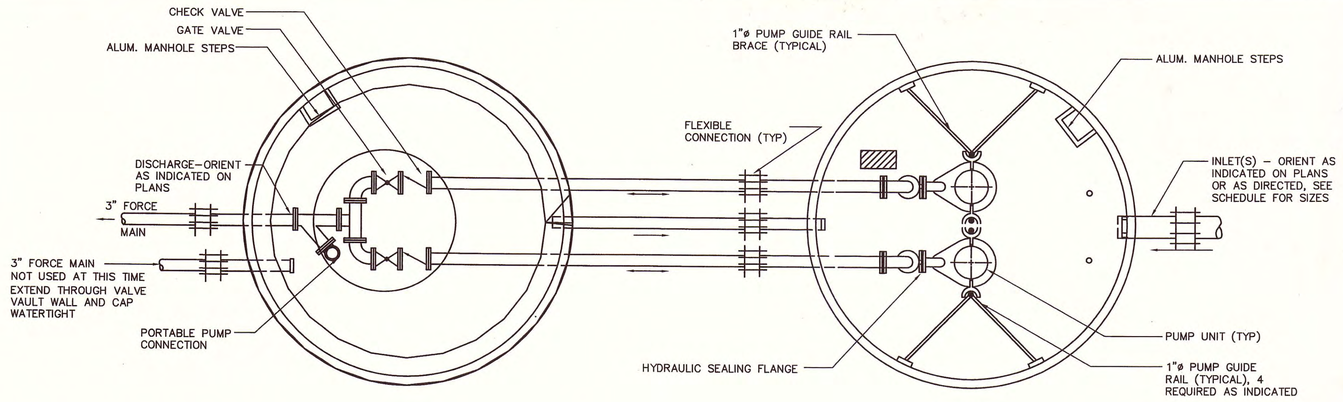
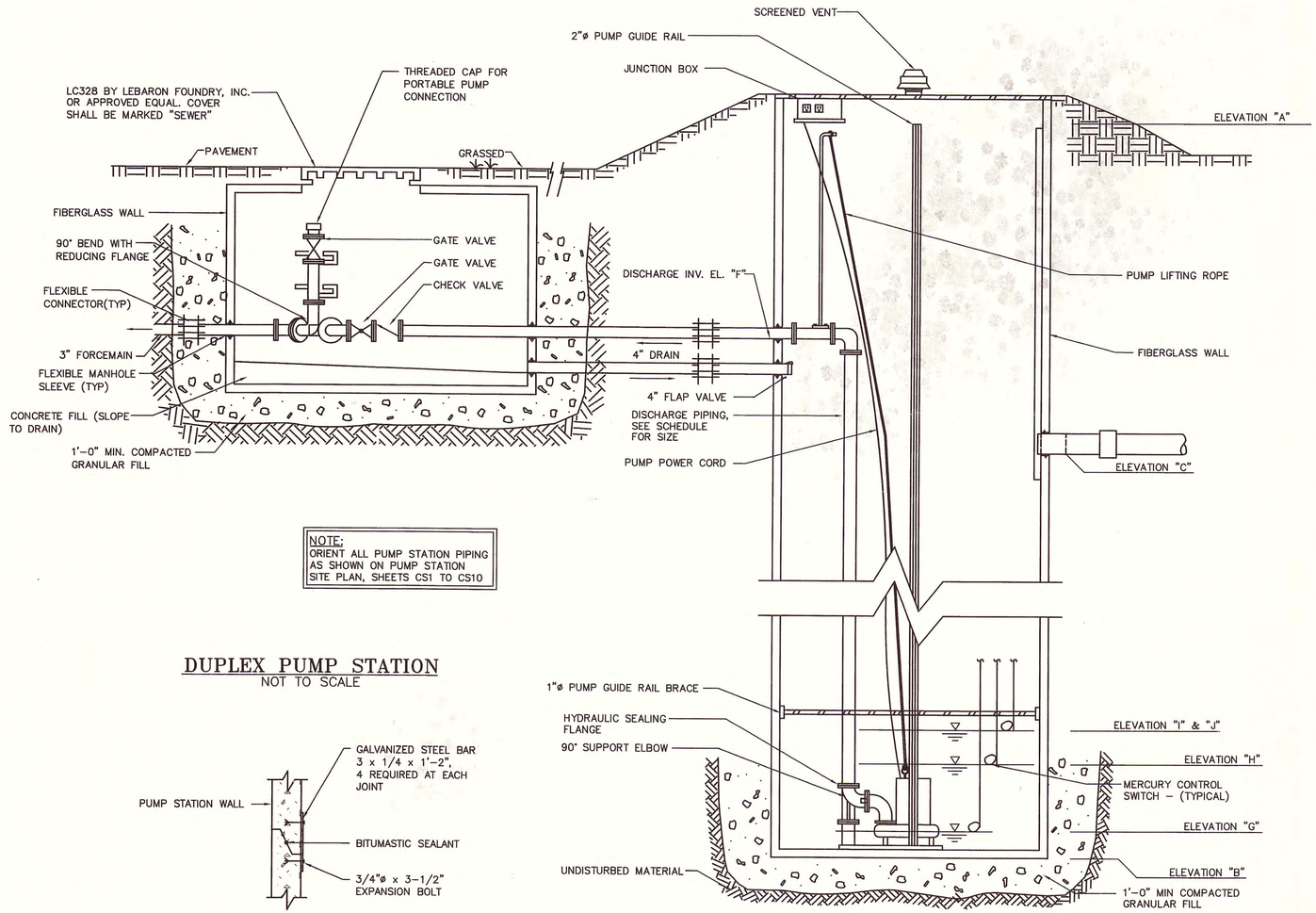


PLAN

CENTRAL PUMP STATION SCHEDULE	
PUMP STATION DIAMETER (INSIDE)	6'–0"
VALVE PIT DIAMETER (INSIDE)	5'–0"
PUMP STATION ACCESS HATCH SIZE	30"X48"
VALVE PIT ACCESS MANHOLE COVER	30"ø
RIM ELEV. EL. "A"	130.00
BOTTOM OF WET WELL EL. "B"	120.60
SIZE & INVERT INLET EL. "C"	8" 125.10
SIZE & INVERT OUTLET EL. "F"	3" 127.40
LEAD/LAG PUMPS OFF EL. "G"	122.10
LEAD PUMP ON EL. "H"	123.10
LAG PUMP ON EL. "I"	123.60
ALARM ON EL. "J"	123.60
PORTABLE PUMP CONNECTION SIZE	2 1/2"
VENT DIAMETER	6"

NORTHEAST PUMP STATION SCHEDULE	
PUMP STATION DIAMETER (INSIDE)	4'–0"
VALVE PIT DIAMETER (INSIDE)	4'–0"
PUMP STATION ACCESS HATCH SIZE	30"X30"
VALVE PIT ACCESS MANHOLE COVER	30"ø
RIM ELEV.* EL. "A"	146.50
BOTTOM OF WET WELL EL. "B"	135.65
SIZE & INVERT INLET EL. "C"	8" 140.15
SIZE & INVERT OUTLET EL. "F"	2" 141.5
LEAD/LAG PUMPS OFF EL. "G"	136.15
LEAD PUMP ON EL. "H"	138.15
LAG PUMP ON EL. "I"	138.65
ALARM ON EL. "J"	138.65
PORTABLE PUMP CONNECTION SIZE	2 1/2"
VENT DIAMETER	6"

*ELEVATIONS ARE BASED ON AERIAL PHOTOGRAPHY AND ARE APPROXIMATE. DEPTH SETTINGS RELATIVE TO RIM SHALL BE MAINTAINED IF TRUE RIM ELEV. VARIES FROM THAT GIVEN.



NOTE:
ORIENT ALL PUMP STATION PIPING AS SHOWN ON PUMP STATION SITE PLAN, SHEETS CS1 TO CS10

DUPLEX PUMP STATION
NOT TO SCALE

SECTION

NOTE: EXPANSION BOLTS TO BE HILTI QUIK BOLTS OR APPROVED EQUAL

ANCHORING DETAIL
NOT TO SCALE

DUPLEX PUMP STATION SCHEDULE		
PUMP STATION DESIGNATION	POST–EQ/EFF. DISP. P.S. (1)	SITE P.S.
PUMP STATION DIAMETER (INSIDE)	4'–6"X13'–0"	6'–0"
VALVE PIT DIAMETER (INSIDE)	N/A	6'–0"
PUMP STATION ACCESS HATCH SIZE	N/A	30"X48"
VALVE PIT ACCESS HATCH SIZE	N/A	30"–36"
RIM ELEV. EL. "A"	132.00 (2)	128.00
BOTTOM OF WET WELL EL. "B"	112.00 (3)	117.23
SIZE & INVERT INLET EL. "C"	6" 126.30 (4)	8" 121.73
SIZE & INVERT OUTLET EL. "F"	2" 122.00 (5)	2" 121.50
LEAD/LAG PUMPS OFF EL. "G"	114.50	117.73
LEAD PUMP ON EL. "H"	115.00	120.73
LAG PUMP ON EL. "I"	126.00	121.23
ALARM ON EL. "J"	126.00	121.73
PORTABLE PUMP CONNECTION SIZE	N/A	2 1/2"
VENT DIAMETER	N/A	6"

NOTES:

(1) THE POST–EQ/EFFLUENT DISPOSAL PUMP STATION IS LOCATED INSIDE THE WATEWATER TREATMENT FACILITY BUILDING IN THE POST–EQ TANK. NO SEPARATE PUMP STATION WET WELL REQUIRED.

(2) TOP OF PROCESS TANK WALL.

(3) BOTTOM OF PROCESS TANK.

(4) 6" DECANT LINE FROM SBR (CENTER LINE ELEV.).

(5) 2" FORCE MAIN TO DISPOSAL FIELD (CENTER LINE ELEV.).

N/A = NOT APPLICABLE.

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

MISCELLANEOUS DETAILS II

DRAWN BY	DATE
MDL	JUNE 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
SJR	C13816F50014

SHEET CS14

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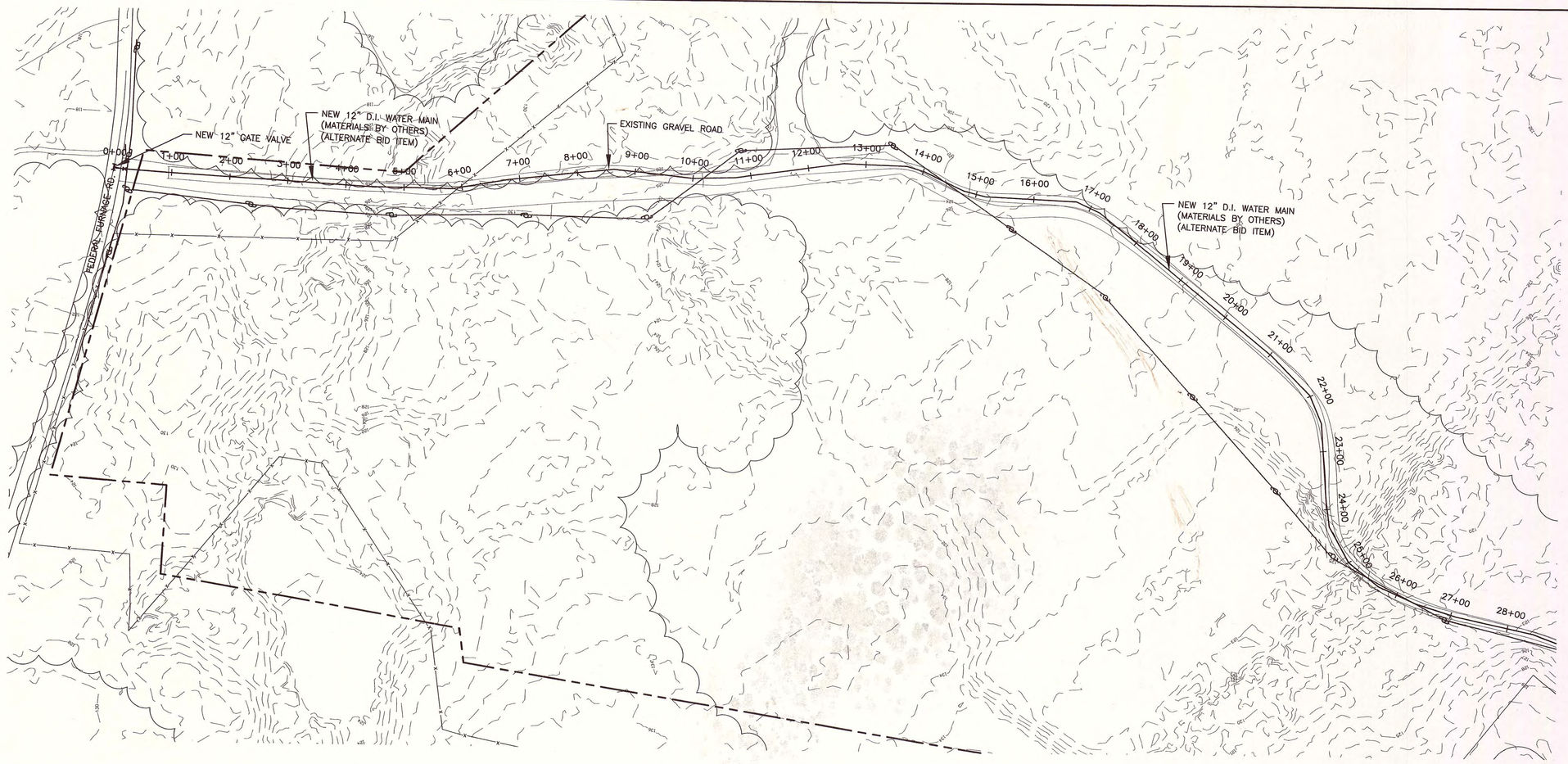


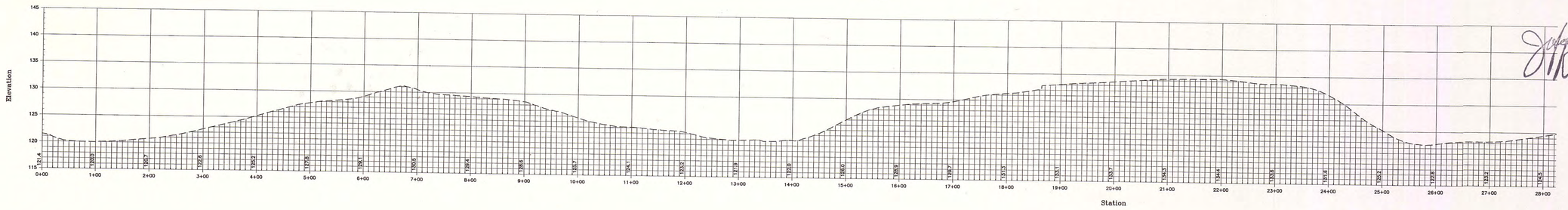
GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

NOTE: ALL PIPE MATERIALS AND APPURTENANCES (FOR 12" MAIN) WILL BE SUPPLIED BY THE TOWN OF PLYMOUTH. CONTRACTOR RESPONSIBLE FOR INSTALLATION ONLY.

GRAVEL ROAD FROM FEDERAL FURNACE ROAD



APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001

NOTE:
PROPOSED 12" DUCTIL IRON PIPE TO BE INSTALLED WITH FIVE FEET MINIMUM COVER

GRAPHIC SCALE
HORIZONTAL 1" = 100'
100 0 50 100 200 400
10 0 5 10 20 40
VERTICAL 1" = 10'

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
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PLYMOUTH MUNICIPAL AIRPORT
WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM

WATER MAIN

DRAWN BY MDL	DATE 8/7/2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13816F50017
SHEET CS15	

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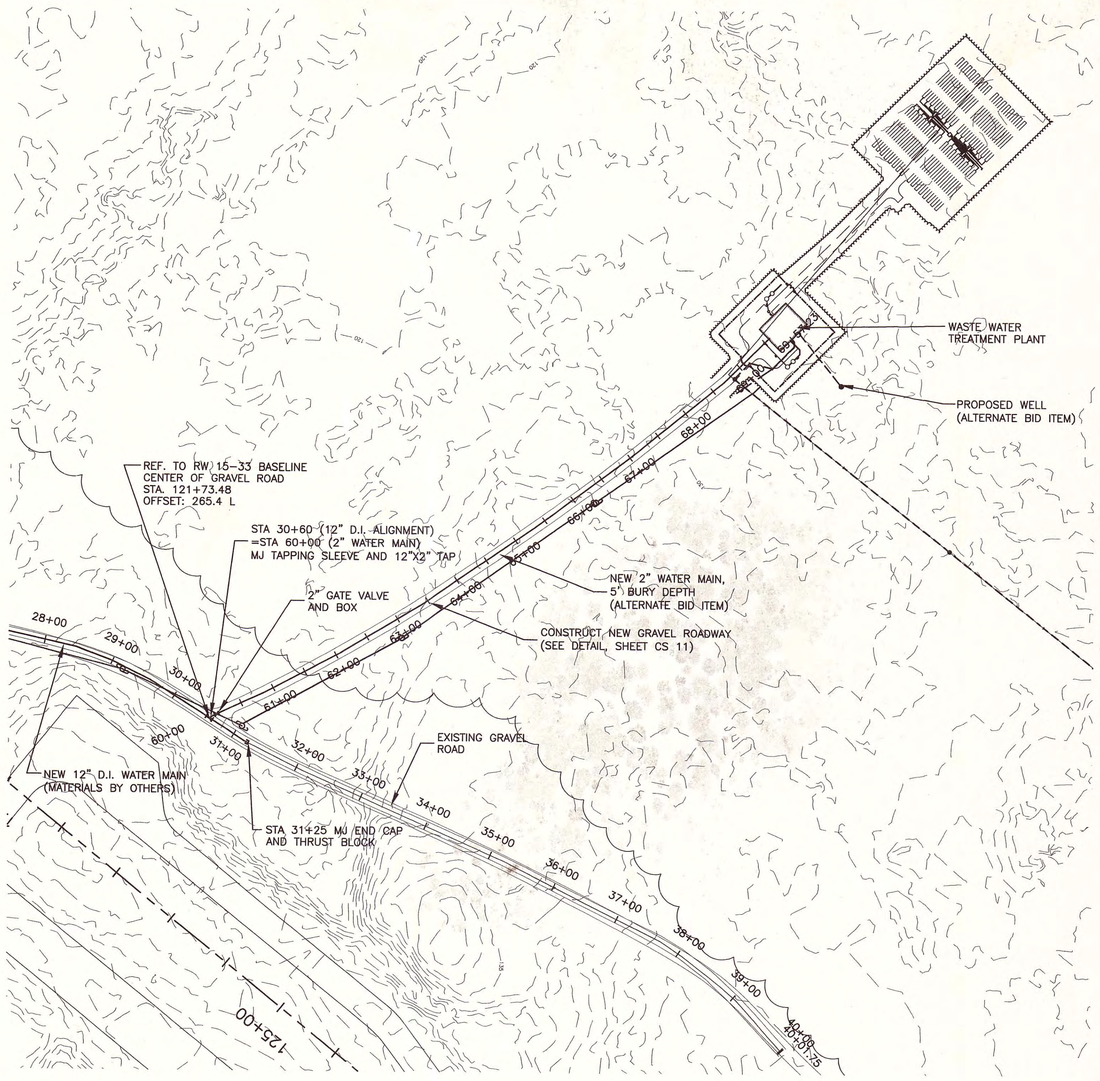
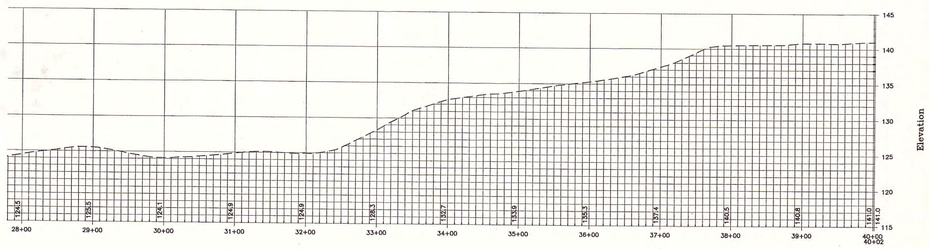


GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

GRAVEL ROAD FROM FEDERAL FURNACE ROAD



NOTE:
PROPOSED 12" DUCTIL IRON PIPE TO BE INSTALLED WITH FIVE FEET MINIMUM COVER

GRAPHIC SCALE

HORIZONTAL 1" = 100'

100 0 50 100 200 400

10 0 5 10 20 40

VERTICAL 1" = 10'

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 22 2001
date

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PLYMOUTH MUNICIPAL AIRPORT
WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM

WATER MAIN

DRAWN BY MDL	DATE 8/7/2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13816F50018
SHEET CS16	

I:\n13816f5\dwg\c13816f50018.dwg Mon Aug 13 16:36:15 2001

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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
Date AUG 22 2001

NOTE:
STATIONING IN PROFILES IS REFERENCED TO CENTERLINE ALIGNMENT OF SEWER SYSTEM, NOT RUNWAY 6-24 BASELINE.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

NO.	DATE	REVISIONS	BY	CK'D

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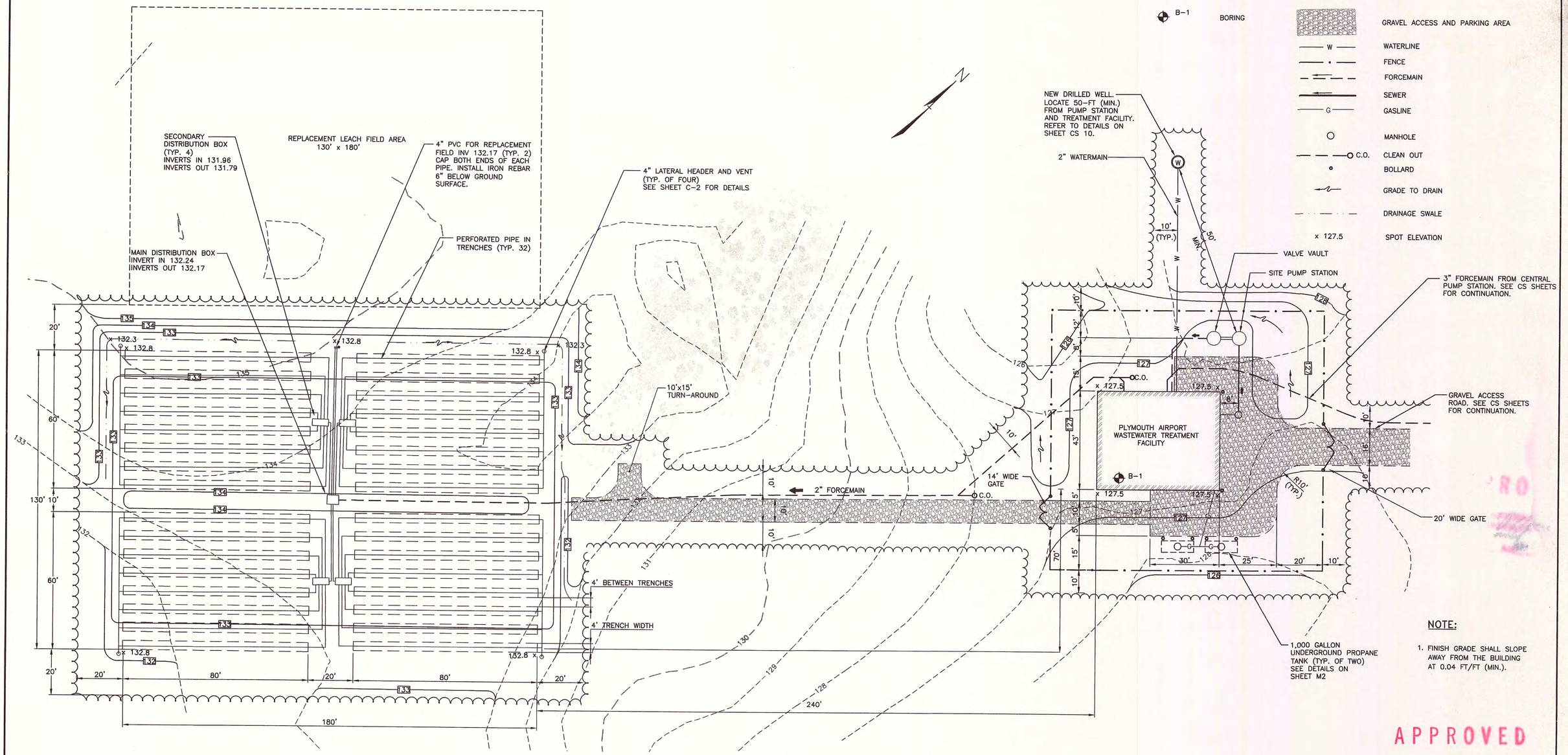
PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

SINGLE-BUILDING FORCE MAIN

DRAWN BY MDL	DATE JUNE 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. JAA	DRAW. NO. C13815F50019
SHEET CS17	

I:\n13816f5\dwg\c13815f50019.dwg Mon Aug 13 16:04:20 2001



EXISTING

127	CONTOUR
B-1	BORING

PROPOSED

127	CONTOUR
	GRAVEL ACCESS AND PARKING AREA
W	WATERLINE
	FENCE
	FORCEMAIN
	SEWER
G	GASLINE
	MANHOLE
C.O.	CLEAN OUT
	BOLLARD
	GRADE TO DRAIN
	DRAINAGE SWALE
x 127.5	SPOT ELEVATION

NOTE:

1. FINISH GRADE SHALL SLOPE AWAY FROM THE BUILDING AT 0.04 FT/FT (MIN.).

NOTE:

1. REFER TO SHEET C2 AND SPECIFICATION SECTION 02755 FOR ADDITIONAL DISPOSAL FIELD DETAILS.

20 0 10 20 40 80
SCALE IN FEET

SITE PLAN

SCALE: 1" = 20'-0"

APPROVED
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Date AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

WWTF SITE LAYOUT, GRADING AND UTILITIES PLAN

DRAWN BY MVW	DATE AUGUST 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. CKG	DRAW. NO.
SHEET C1	

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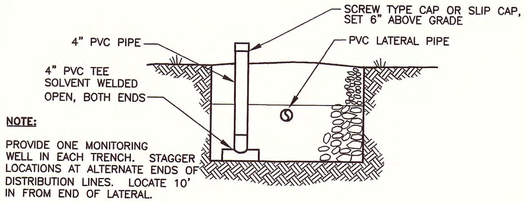
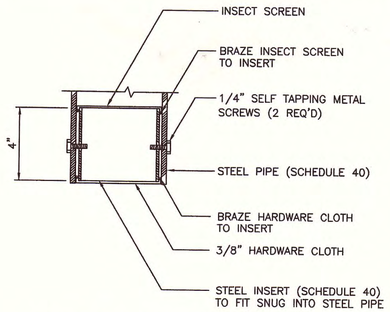


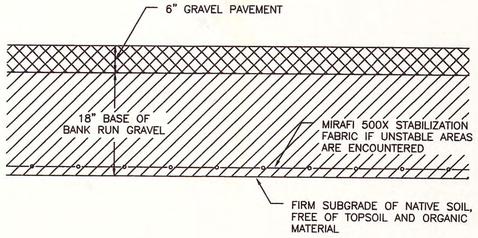
TYPICAL TRENCH MONITORING WELL

NOT TO SCALE



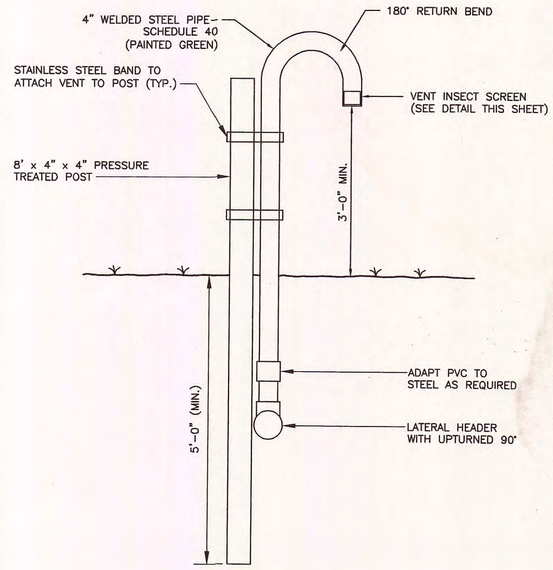
VENT INSECT SCREEN DETAIL

NOT TO SCALE



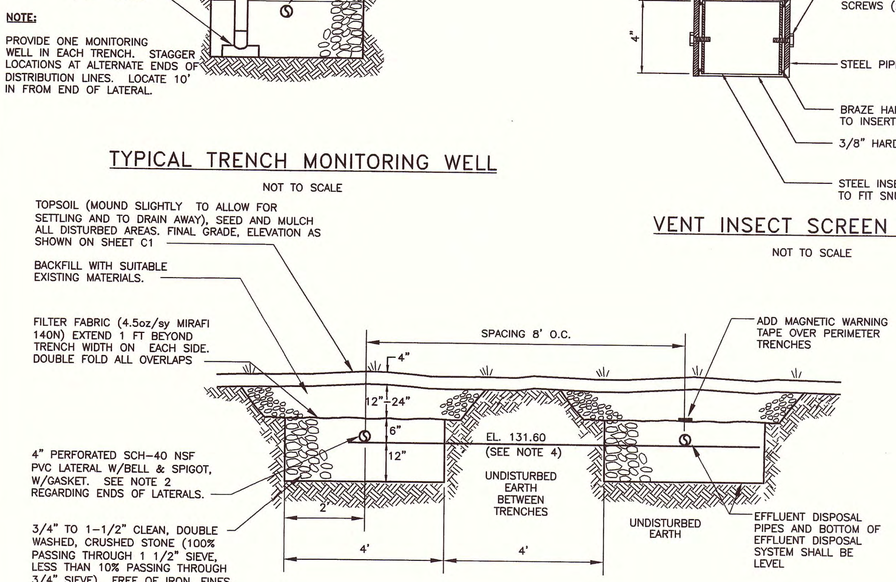
ACCESS ROAD/PARKING LOT TYPICAL SECTION

NOT TO SCALE



LATERAL HEADER VENT DETAIL

NOT TO SCALE

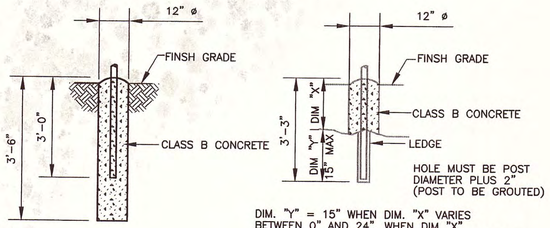


TYPICAL LEACH FIELD SECTION

NOT TO SCALE

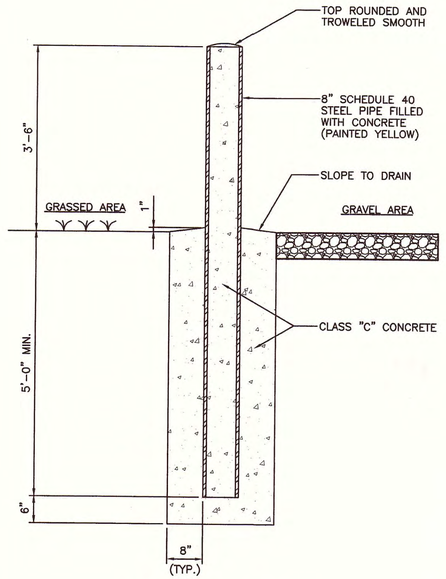
NOTES:

1. CONTRACTOR SHALL HAND RAKE THE SIDES AND BOTTOM OF ALL TRENCHES, REFER TO SPECIFICATION SECTION 02755 FOR OTHER REQUIREMENTS.
2. THE ENDS OF THE LATERALS SHALL BE CONNECTED TO A 4" (NON-PERFORATED) LATERAL HEADER. EACH HEADER (TYP. OF 4) SHALL TERMINATE ABOVE FINISH GRADE IN A DOWNTURNED VENT. SEE DETAIL, THIS SHEET.
3. THE COMPLETED SUBSURFACE DISPOSAL FIELD SHALL CONFORM TO THE REQUIREMENTS OF THE COMMONWEALTH OF MASSACHUSETTS, 310 CMR 15.
4. LATERAL ELEVATION SHOWN IS AT BEGINNING OF TRENCH. EACH LATERAL SHALL HAVE A SLOPE OF 0.005 FEET PER FOOT.
5. DISTRIBUTION LINES CONNECTING THE DISTRIBUTION BOXES AND CONNECTING THE DISTRIBUTION LATERALS SHALL BE NON-PERFORATED WITH WATERTIGHT CONNECTIONS AND JOINTS.



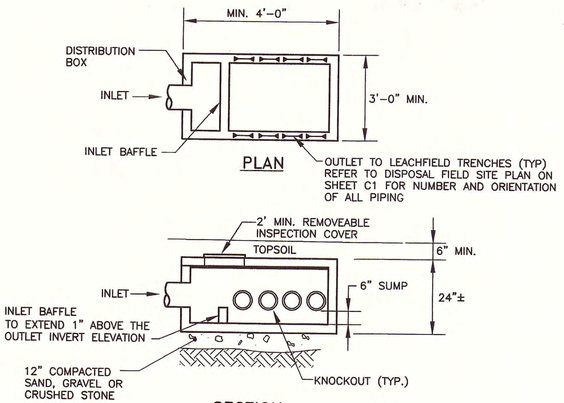
POST ANCHOR DETAIL

NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE

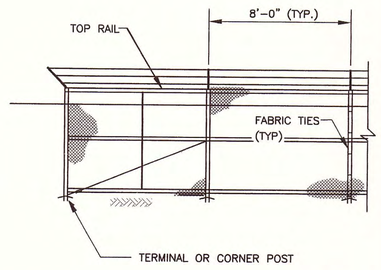


8 OUTLET DISTRIBUTION BOX

NOT TO SCALE

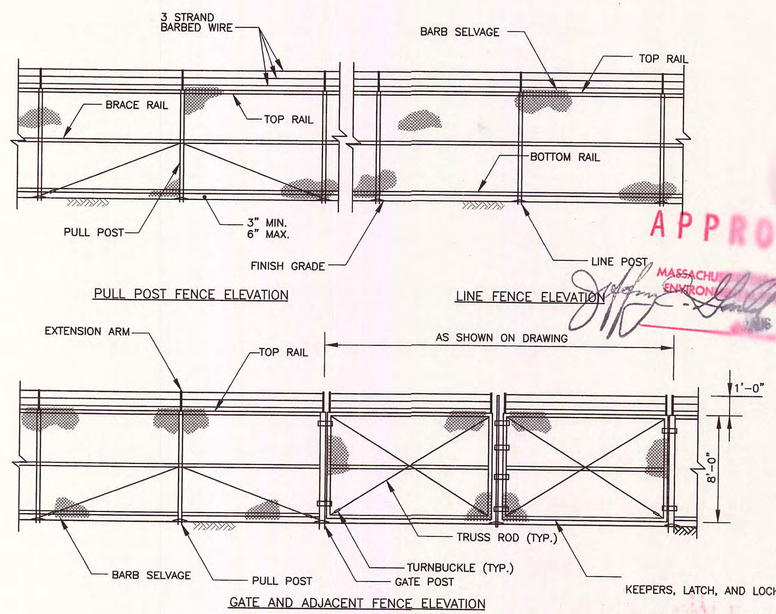
NOTES:

1. THE DISTRIBUTION BOX SHALL BE SET LEVEL AND ARRANGED SO THAT THE EFFLUENT IS EVENLY DISTRIBUTED TO EACH DISTRIBUTION LINE.
2. EACH DISTRIBUTION LINE SHALL CONNECT INDIVIDUALLY TO THE DISTRIBUTION BOX AND SHALL BE LEVEL FOR A MINIMUM OF THE FIRST TWO FEET OF THEIR LENGTH. (REFER TO SPECIFICATION SECTION 02755 FOR OTHER REQUIREMENTS.)
3. MAIN DISTRIBUTION BOX IS SIMILAR.



TERMINAL OR CORNER FENCE DETAIL

NOT TO SCALE



CHAIN LINK FENCE AND DOUBLE GATE DETAIL

NOT TO SCALE

APPRO
MASSACHU
ENVIRON

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

WWTF SITE AND DISPOSAL FIELD DETAILS

DRAWN BY: MVW	DATE: AUGUST 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: CKG	DRAW. NO.
SHEET: C2	

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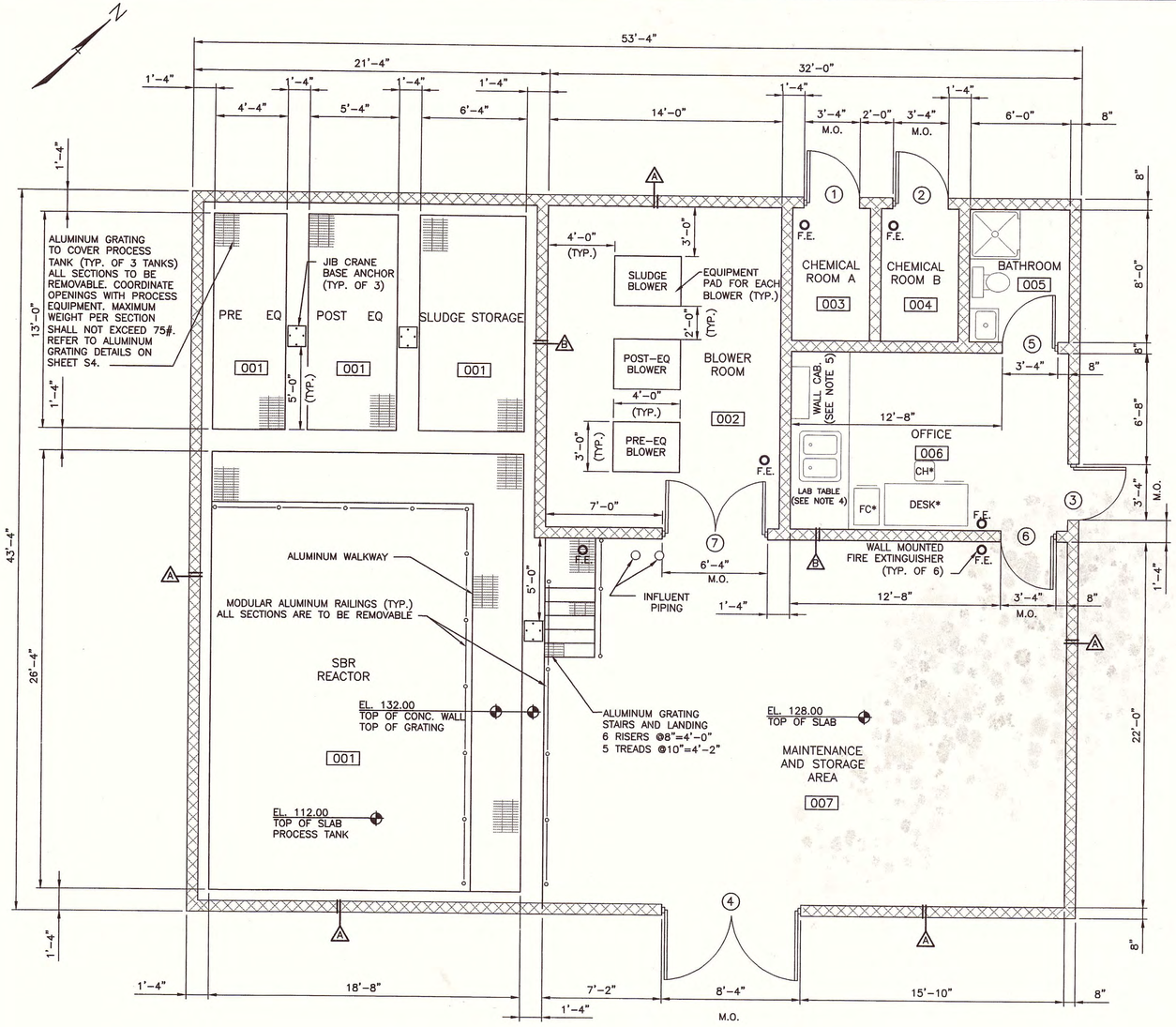
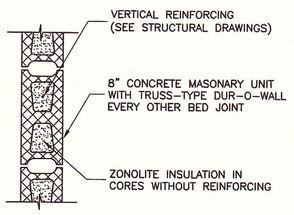


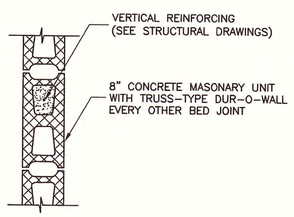
FLOOR PLAN

1/4" = 1'-0"



A TYPICAL EXTERIOR WALL

SCALE: 1"=1'-0"



B TYPICAL INTERIOR WALL

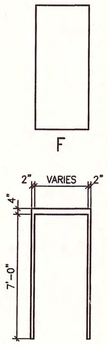
SCALE: 1"=1'-0"

NOTES:

1. COORDINATE PIPE LOCATIONS WITH PROCESS AND MECHANICAL DRAWINGS.
2. COORDINATE WALL OPENING LOCATIONS WITH ELECTRICAL AND MECHANICAL DRAWINGS.
3. *= NOT IN CONTRACT
4. LAB TABLE WORK SURFACE SHALL BE STANDING HEIGHT, BLACK, CHEMICAL RESISTANT, EPOXY RESIN OR HIGH-PRESSURE PLASTIC LAMINATE WITH CURB, EQUIVALENT TO FISHER HAMILTON WORK SURFACES. COORDINATE CUTOUT FOR SINK, FIXTURE, PLUMBING, ETC.
5. WALL CABINET SHALL BE 18 GAUGE STEEL WITH ONE-PIECE WRAP AROUND DESIGN, FRAMED GLASS HINGED DOUBLE DOORS, 36" WIDE, EQUIVALENT TO FISHER HAMILTON WALL CABINETS OR EQUAL.

DOOR SCHEDULE

DOOR						FRAME								
DR.NO.	DOOR SIZE	THICK.	TYPE	MAT'L.	FINISH	TYPE	MAT'L.	HEAD	JAMB	FINISH	GLAZING TYPE	FIRE RATING	HRDWR. SET	REMARKS
1	3'-0" X 7'-0"	1 3/4"	F	GIHM	PNT	1	HM	1	1	PNT	–	–	1	–
2	3'-0" X 7'-0"	1 3/4"	F	GIHM	PNT	1	HM	1	1	PNT	–	–	1	–
3	3'-0" X 7'-0"	1 3/4"	F	GIHM	PNT	1	HM	1	1	PNT	–	–	2	–
4	(2) 4'-0" x 9'-0"	1 3/4"	F	GIHM	PNT	1	HM	1	1	PNT	–	–	3	–
5	3'-0" X 7'-0"	1 3/4"	F	GHM	PNT	1	HM	1	1	PNT	–	–	4	–
6	3'-0" X 7'-0"	1 3/4"	G	GHM	PNT	1	HM	1	1	PNT	1	–	5	–
7	(2) 3'-0" X 7'-0"	1 3/4"	F	GHM	PNT	1	HM	1	1	PNT	–	–	6	–



LEGEND

GHM – GALVANIZED HOLLOW METAL
GIHM – GALVANIZED INSULATED HOLLOW METAL
HM – HOLLOW METAL
PNT – PAINT

GLAZING TYPES

1 – 1/4" TEMPERED GLASS

HARWARE SETS

HARDWARE SET 1
- HINGES
- LEVER/LOCKSET (STOREROOM FUNCTION)
- CLOSER
- ALUMINUM THRESHOLD
- WEATHERSTRIPPING

HARDWARE SET 2
- HINGES
- LEVER/LOCKSET (ENTRANCE FUNCTION)
- CLOSER
- ALUMINUM THRESHOLD
- WEATHERSTRIPPING

HARDWARE SET 3
- HINGES
- LEVER/LOCKSET (ENTRANCE FUNCTION)
- MANUAL FLUSHBOLTS
- CLOSER
- ALUMINUM THRESHOLD
- WEATHERSTRIPPING

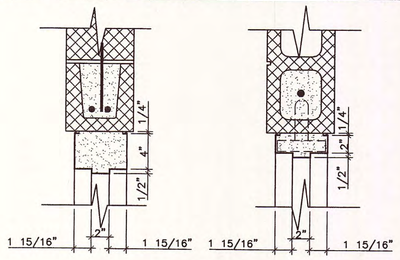
HARDWARE SET 4
- HINGES
- LEVER/LOCKSET (PRIVACY FUNCTION)
- WALL BUMPER
- SILENCERS

HARDWARE SET 5
- HINGES
- LEVER/LOCKSET (OFFICE FUNCTION)
- WALL BUMPER
- SILENCERS

HARDWARE SET 6
- HINGES
- LEVER/LOCKSET (STOREROOM FUNCTION)
- MANUAL FLUSHBOLTS
- CLOSER
- WALL BUMPERS
- SILENCERS

ROOM FINISH SCHEDULE

ROOM NO.	NAME	FLOOR FINISH: CONCRETE	CONCRETE SEALER	CONCRETE HARDENER	BASE: VINYL	NONE	WALLS FINISH: CMU, PAINTED	CMU, SEALED	CEILING FINISH: GWB PAINTED	MOISTURE RESISTANT GWB, PAINTED	FRP PANELS	HEIGHT
001	PROCESS TANKS (PRE-EQ, SBR, POST-EQ, SLUDGE)	●				●	●	●			●	25'-9"
002	BLOWER ROOM		●	●		●	●		●			12'-8"
003	CHEMICAL ROOM A (METHANOL)		●	●		●	●	●		●		12'-8"
004	CHEMICAL ROOM B (CAUSTIC)		●	●		●	●	●		●		12'-8"
005	BATHROOM		●	●	●		●			●		12'-8"
006	OFFICE		●	●	●		●		●			12'-8"
007	FILTER ROOM & MAINTANCE/STORAGE		●	●		●	●			●		12'-8"



DETAIL 1

SCALE: 1 1\2" =1'-0"

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
Date AUG 23 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

BUILDING PLAN AND SCHEDULES

DRAWN BY	DATE
MVW	AUGUST 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
CKG	
SHEET	A1

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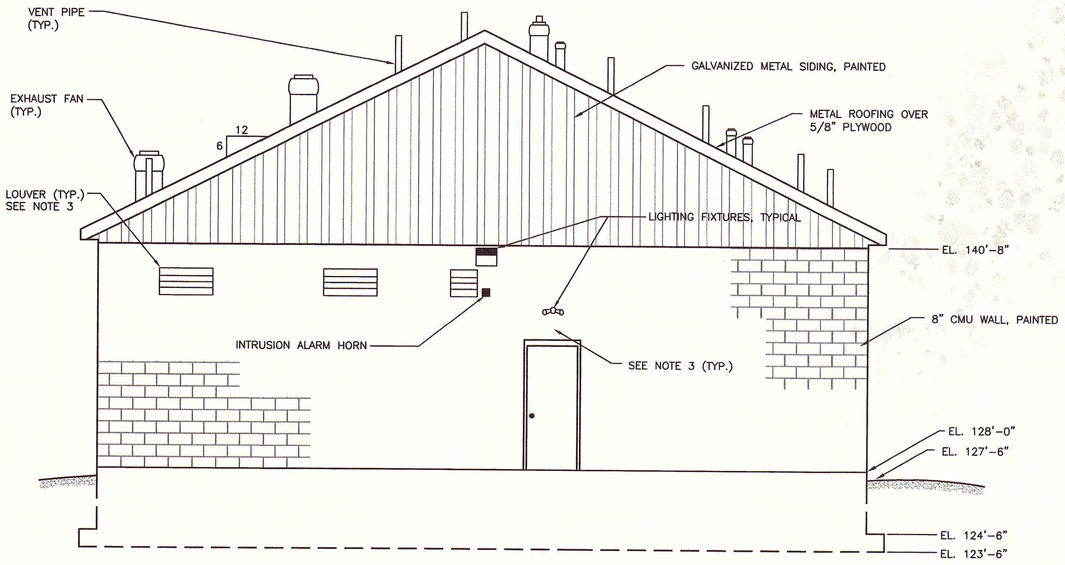


NORTHEAST ELEVATION

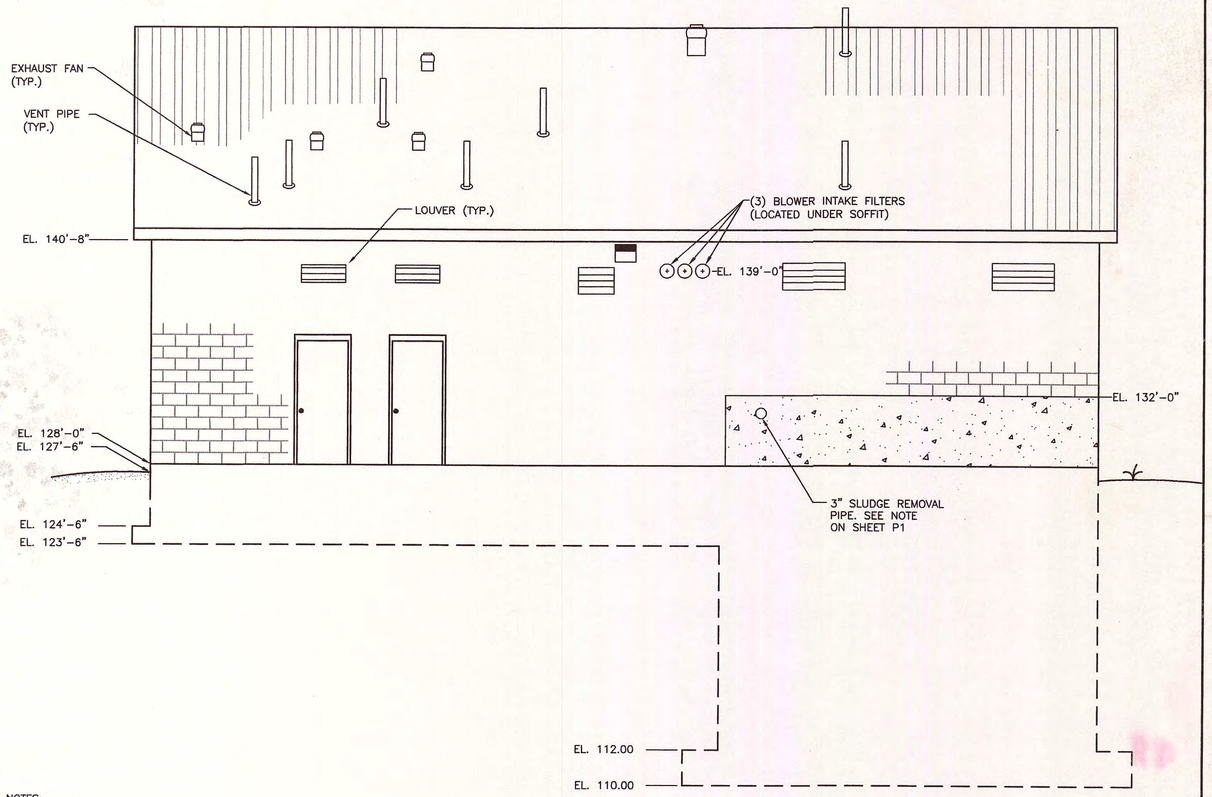
SCALE: 1/4" = 1'- 0"

NOTES:

1. PAINT COLORS FOR ROOFING, SIDING, EXTERIOR MASONARY AND INTERIOR WALLS AND CEILINGS WILL BE SELECTED BY THE OWNER. SUBMIT COLOR SAMPLES FOR EACH ITEM FOR REVIEW.

2. COORDINATE LOCATIONS OF WALL AND ROOF PENITRATIONS WITH ELECTRICAL AND MECHANICAL DRAWINGS.

3. REFER TO STRUCTURAL DRAWINGS FOR LINTEL SCHEDULE.



NORTHWEST ELEVATION

SCALE: 1/4" = 1'- 0"

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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUG 22 2001

date

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

BUILDING ELEVATONS

DRAWN BY: MVW	DATE: AUGUST 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: CKG	DRAW. NO.:
SHEET: A2	

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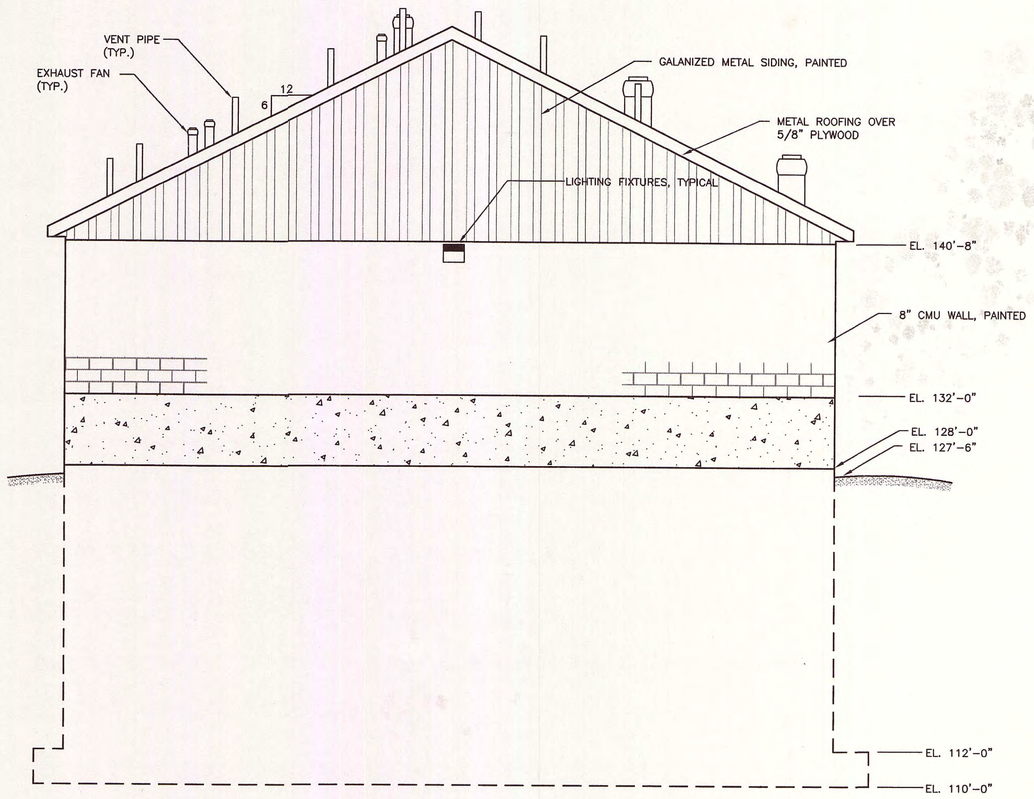
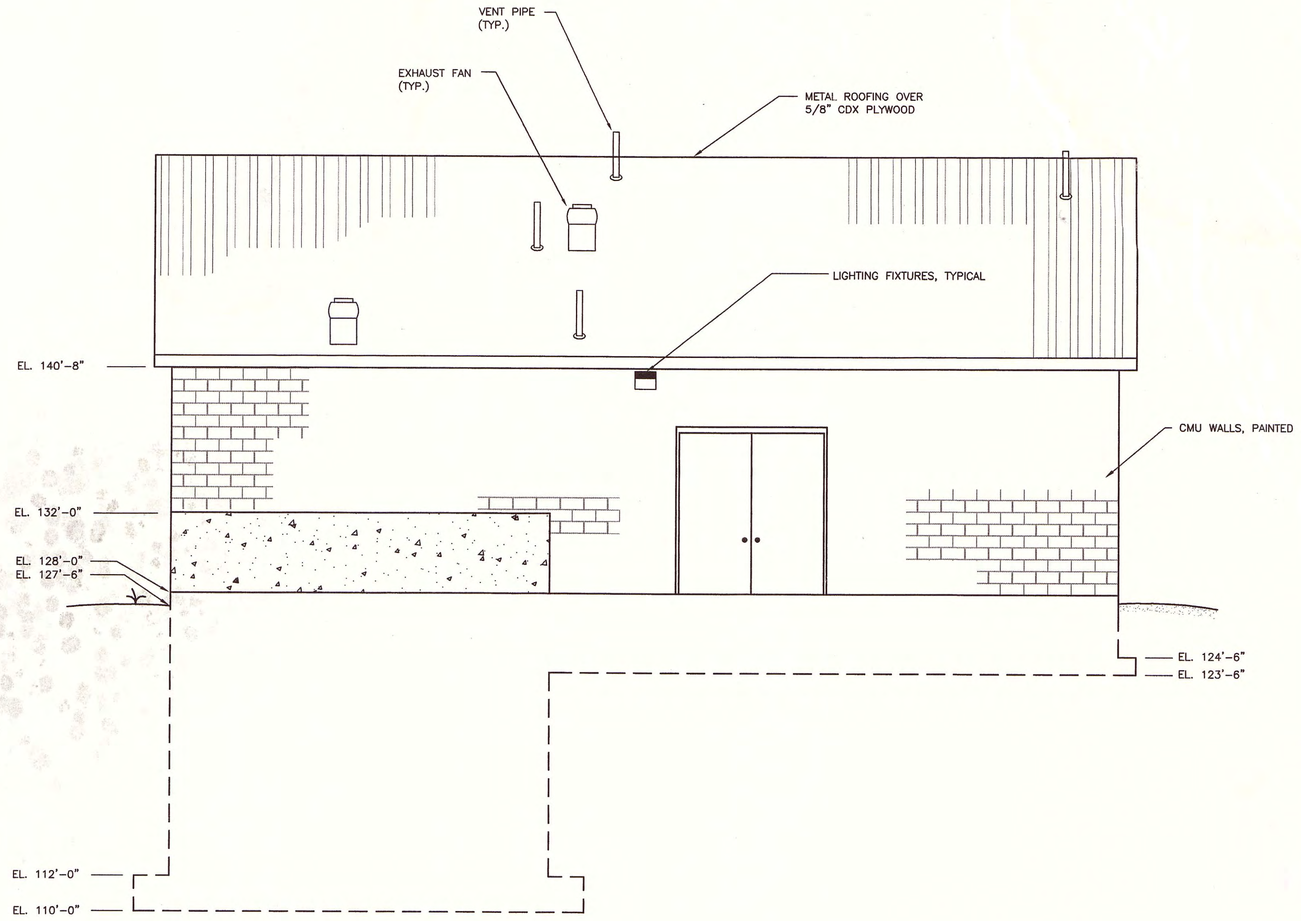


SOUTHWEST ELEVATION

SCALE: 1/4" = 1'- 0"



SOUTHEAST ELEVATION

SCALE: 1/4" = 1'- 0"

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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUG 22 2001

date

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.

engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT

WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

BUILDING ELEVATONS

DRAWN BY: MVW	DATE: AUGUST 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: CKG	DRAW. NO.:
SHEET: A3	

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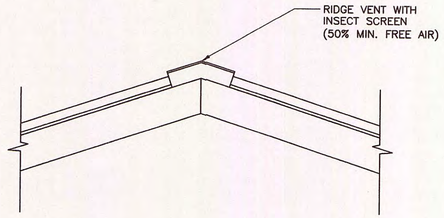
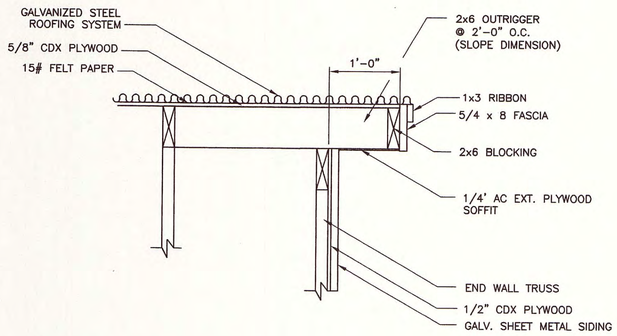


RIDGE DETAIL

SCALE: 1"=1'-0"



RAKE DETAIL

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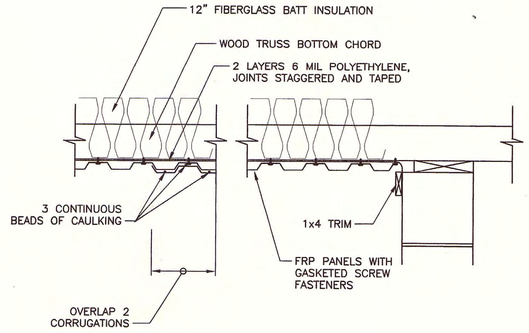
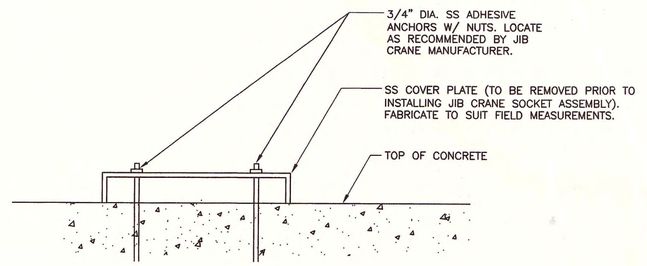


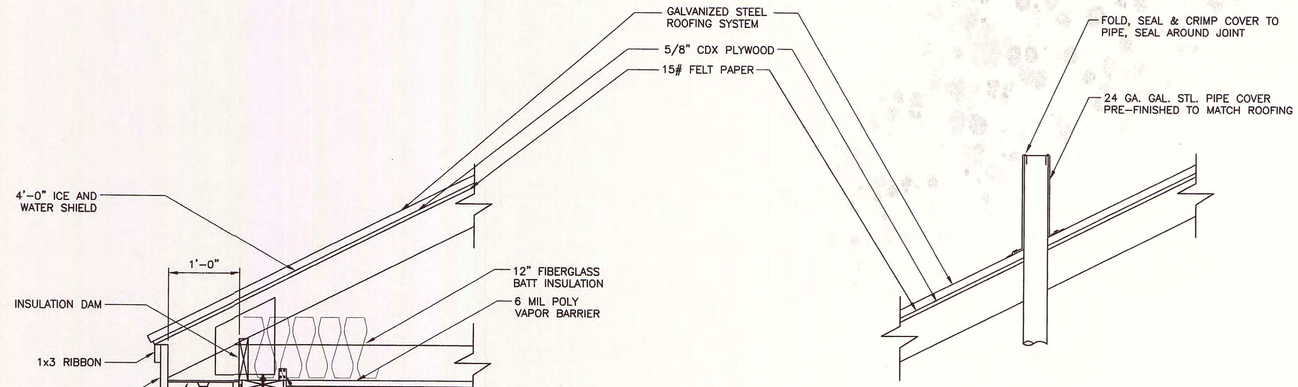
FRP PANELS IN SBR CEILING DETAIL

SCALE: 1"=1'-0"



JIB CRANE BASE ANCHOR COVER PLATE

NOT TO SCALE



NOTE:

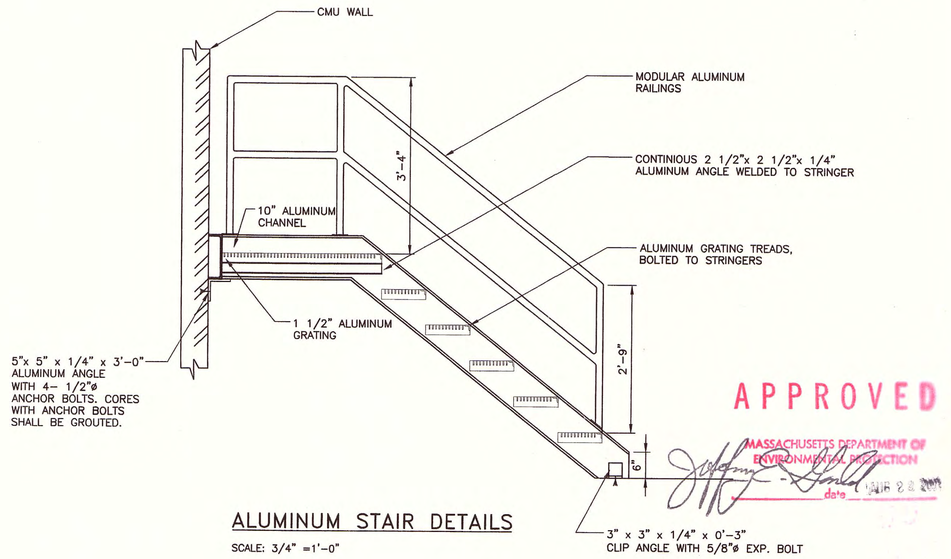
REFER TO SHEET S3 FOR ADDITIONAL STRUCTURAL DETAILS RELATED TO THE BOND BEAM.

EAVE DETAIL

SCALE: 1"=1'-0"

ROOF PENETRATION DETAIL

SCALE: 1"=1'-0"



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MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION
date AUG 2 8 2001

ALUMINUM STAIR DETAILS

SCALE: 3/4" =1'-0"

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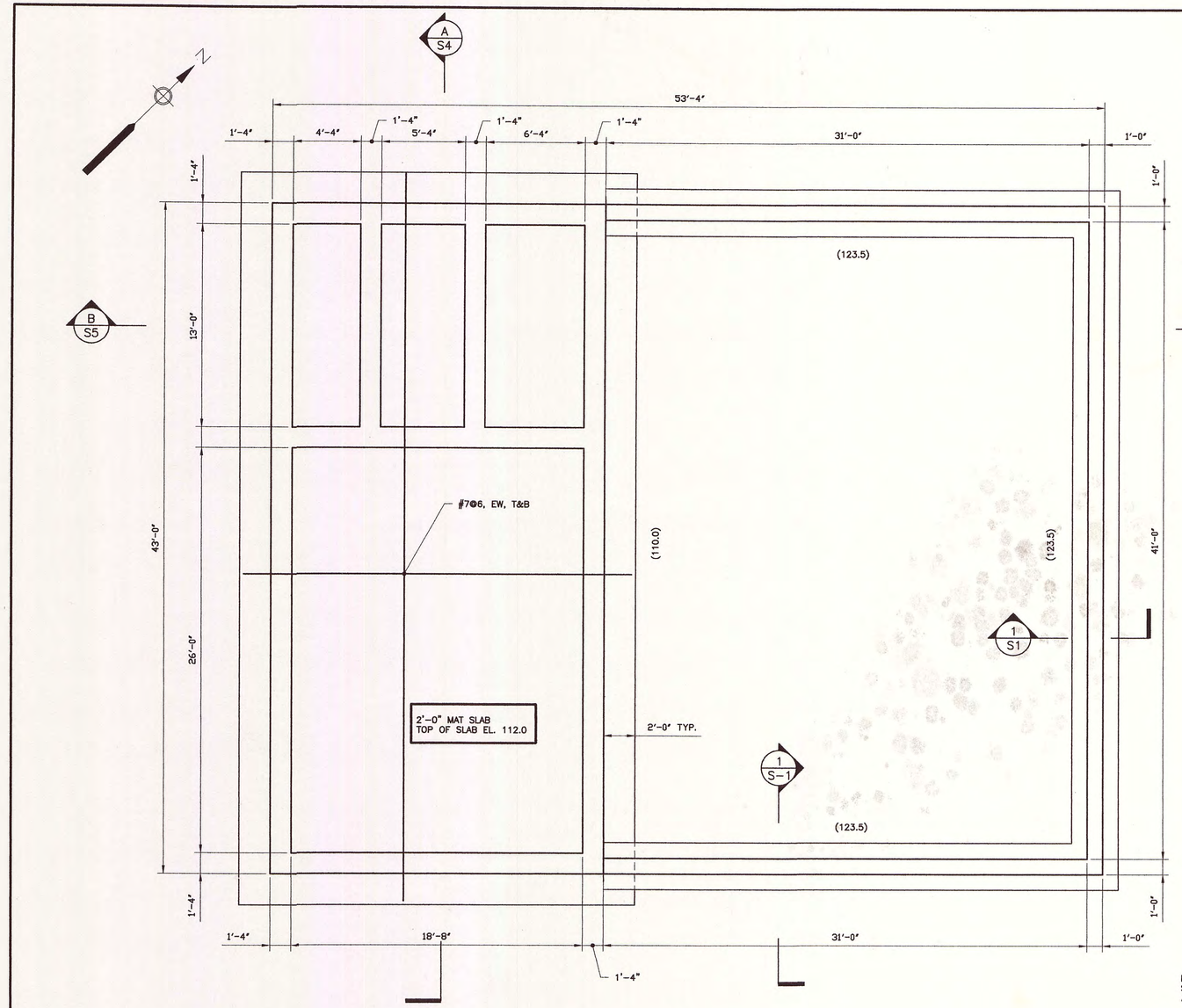
PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT
AND COLLECTION SYSTEM

BUILDING DETAILS

DRAWN BY: MVW	DATE: AUGUST 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: CKG	DRAW. NO.:
SHEET: A4	

I:\N13816LB\dwg\N13816FA01-3.dwg Fri Aug 10 16:31:39 2001



CLEAR CONCRETE COVER FOR CAST-IN-PLACE CONCRETE OVER REINFORCEMENT (INCHES)					
MEMBER	EXPOSURE CONDITIONS				
	AIR	WEATHER	AIR OVER LIQUID	EARTH OR STONE	LIQUIDS
FOOTINGS AND FOUNDATION MATS	2"*	2"*	–	2"* 3"●	2"*
WALLS	2"	2"	2"	2"	2"
SLABS ON GROUND	1"	2"	–	2"▲	2"

* TOP FACE AND SIDES
● BOTTOM FACE
▲ WHEN PLACED ON SAND-GRAVEL, WELL DRAINED COMPACTED FILL
■ BOTTOM COVER IS INDICATED ON DRAWINGS

CONCRETE COVER FOR CAST-IN-PLACE CONCRETE OVER REINFORCEMENT

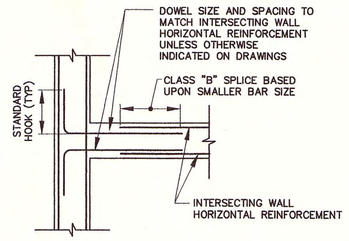
NTS

FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

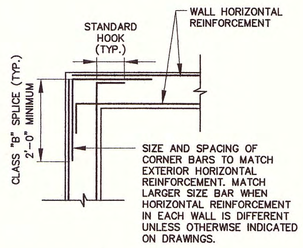
NOTES

1. FOR LEGEND AND GENERAL NOTES SEE SHEET S2
2. FOUNDATION DESIGN BASED ON A NET ALLOWABLE SOIL BEARING CAPACITY OF 3500 PSF.
3. (123.5) INDICATES MINIMUM BOTTOM OF FOOTING ELEVATION.



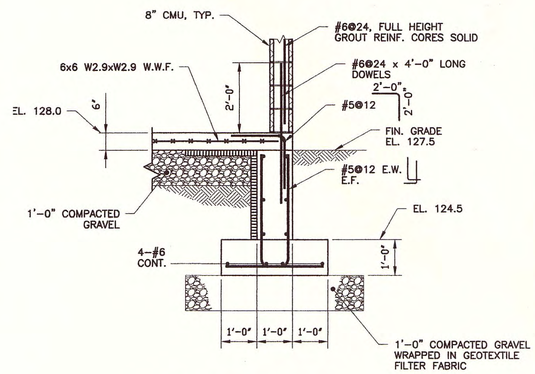
PLAN–INTERSECTION OF TWO WALLS WITHOUT CONSTRUCTION JOINT

NTS



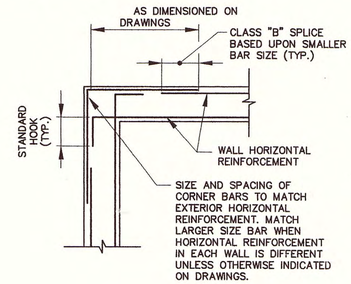
PLAN–WALL CORNER WITH CLASS "B" REINFORCEMENT SPLICE

NTS



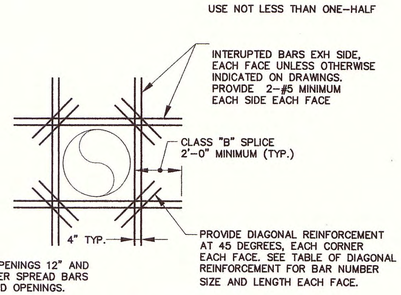
1/S1 SECTION

SCALE: 1/2" = 1'-0"



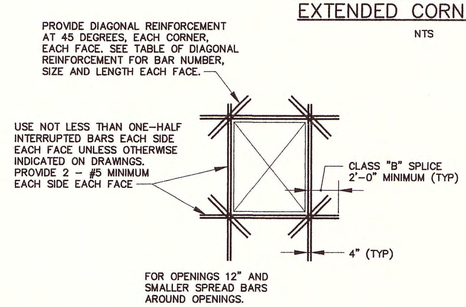
PLAN–WALL CORNER WITH EXTENDED CORNER BARS

NTS



ADDITIONAL REINFORCEMENT ROUND OPENINGS

NTS



ADDL. REINF. SQUARE AND RECTANGULAR OPENINGS WITH CORNER DIAGONAL REINFORCEMENT

NTS

TABLE OF DIAGONAL REINFORCEMENT				
MEMBER THICKNESS IN INCHES \ OPENING SIZE	LARGEST OPENING DIMENSION IN INCHES			
	24 TO 36	36 TO 48	48 TO 60	60 AND LARGER
16 TO 32	2 – #6 X 4'–0"	2 – #6 X 4'–0"	2 – #7 X 4'–6"	2 – #7 X 4'–6"
32 TO 48	2 – #6 X 4'–0"	2 – #7 X 4'–6"	2 – #7 X 4'–6"	2 – #8 X 5'–0"
48 TO 60	2 – #7 X 4'–6"	2 – #7 X 4'–6"	2 – #8 X 5'–0"	2 – #8 X 5'–0"
60 AND LARGER	2 – #7 X 4'–6"	2 – #8 X 5'–0"	2 – #8 X 5'–0"	2 – #9 X 6'–0"

DIAGONAL REINFORCEMENT FOR OPENINGS 24 INCHES AND LARGER AND IN MEMBERS 16 INCHES AND THICKER.

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. CARSON
NO. 28951
REGISTERED PROFESSIONAL ENGINEER

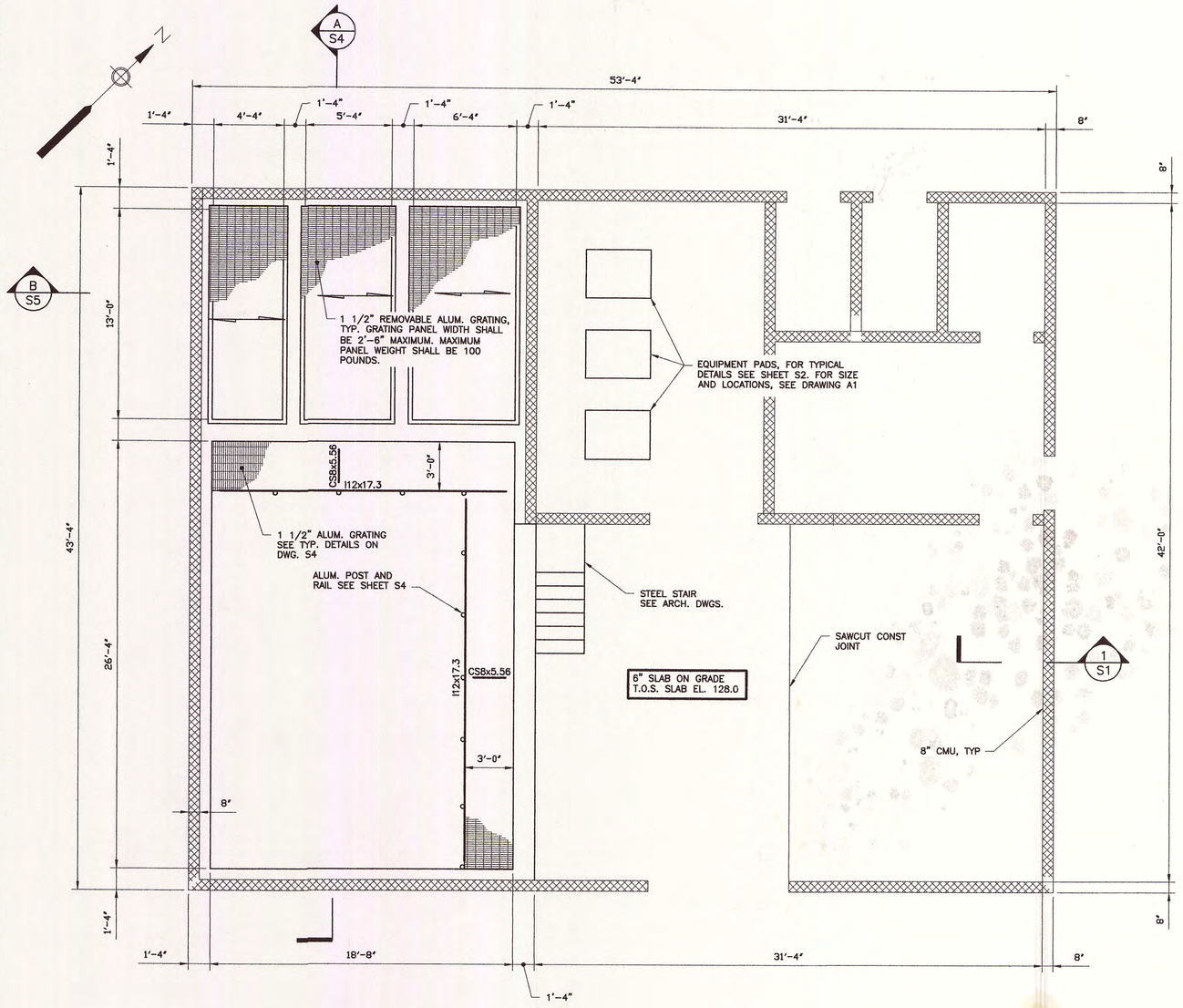
DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTEWATER TREATMENT PLANT
COLLECTION SYSTEM

FOUNDATION PLAN AND DETAILS

DRAWN BY	DATE
CD	AUG 2001
CHECKED BY	PROJ. NO.
RWM	N13816F5
PROJ. ENG.	DRAW. NO.
SHEET S1	

PREPARED BY :
DMC ENGINEERING
DMC ENGINEERING, INCORPORATED
63 FOUNTAIN STREET, SUITE 303
FRAMINGHAM, MA 01702



UPPER LEVEL PLAN

SCALE: 1/4" = 1'-0"

NOTES:

1. DESIGN LIVE LOAD = 250 PSF
2. DESIGN LIVE LOAD FOR ALUM. GRATING AND WALKWAYS = 100 PSF.
3. PITCH FLOOR SLABS TO DRAINS, FOR DRAIN LOCATIONS SEE SHEET M3.
4. ——— INDICATES DIRECTION OF GRATING SPAN.

GENERAL:

ALL WORK SHALL CONFORM TO THE MASSACHUSETTS STATE BUILDING CODE, CMR 780, SIXTH EDITION, AND TO OTHER CODES AND REFERENCES INDICATED OR SPECIFIED. IN CASE OF CONFLICT THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

DESIGN LIVE LOADS:

ROOFS (SNOW)	INDICATED ON PLANS.
FLOORS	INDICATED ON PLANS.
WIND	30 PSF ZONE 3, EXPOSURE C,

PROTECT ALL STRUCTURES AGAINST HYDRAULIC UPLIFT UNTIL STRUCTURES ARE COMPLETED AND BACKFILLED.

REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, PROCESS AND ELECTRICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF ALL CHASES, SLOTS, INSERTS, CURBS, OPENINGS, SLEEVES, ANCHOR BOLTS, FLOOR PITCHES, ANGLE FRAMES, SLUICE GATE FRAMES, SLIDE GATE FRAMES, ROLLER GATE FRAMES AND ALL OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.

PROVIDE OPENINGS REQUIRED FOR PURCHASED EQUIPMENT. PROVIDE ANCHOR BOLTS, NUTS, NON-SHRINK NON METALLIC GROUT, CONCRETE PADS AND REINFORCING STEEL REQUIRED FOR THE INSTALLATION OF EQUIPMENT.

FOUNDATION:

FOUNDATION DESIGNS ARE BASED UPON THE ALLOWABLE SOIL-BEARING CAPACITY INDICATED ON THE DRAWINGS.

PERCENT COMPACTION IS DEFINED AS THE RATIO OF THE FIELD DRY DENSITY, AS DETERMINED BY ASTM D-1556 TO THE MAXIMUM DRY DENSITY, DETERMINED BY ASTM D-1557, (MODIFIED PROCTOR).

ALL BACKFILL UNDER SLABS ON GRADE SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY, MINIMUM, UNLESS OTHERWISE SPECIFIED.

DO NOT BACKFILL AGAINST EXTERIOR WALLS UNTIL LATERAL SUPPORT IS PROVIDED BY FLOOR SLABS, AND SLABS HAVE REACHED THEIR 28-DAY DESIGN STRENGTH. DO NOT BACKFILL AGAINST CANTILEVER WALLS UNTIL THE CONCRETE HAS REACHED ITS 28-DAY DESIGN STRENGTH.

DO NOT PLACE FOUNDATION CONCRETE IN WATER OR ON FROZEN OR DISTURBED GROUND.

ALUMINUM:

STRUCTURAL ALUMINUM TO CONFORM TO ALLOY 6061-T6. DETAIL AND FABRICATE IN CONFORMANCE WITH THE LATEST ASCE SPECIFICATIONS FOR STRUCTURES OF ALUMINUM.

FIELD WELDING OF STRUCTURAL MEMBERS IS NOT PERMITTED UNLESS SPECIFICALLY INDICATED.

SHOP CONNECTIONS MAY BE BOLTED OR WELDED UNLESS THE CONNECTION METHOD IS INDICATED.

PROVIDE 3/4" DIAMETER TYPE 316 STAINLESS STEEL BOLTS FOR BOLTED CONNECTIONS. PROVIDE 13/16" DIAMETER HOLES UNLESS OTHERWISE INDICATED. PROVIDE PLATE WASHERS IN BOTH OUTER PLIES WHEN OVERSIZE OR SLOTTED HOLES ARE INDICATED.

SIMPLY SUPPORTED BEAM-TO-BEAM CONNECTIONS SHALL BE MADE WITH DOUBLE ANGLES IN CONFORMANCE WITH THE AISC MANUAL UNLESS OTHERWISE INDICATED

CONCRETE:

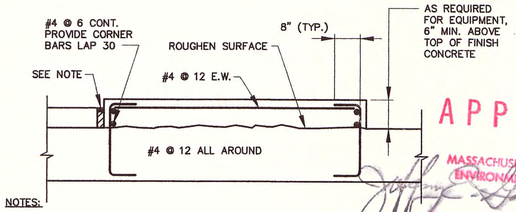
CONCRETE CONSTRUCTION SHALL CONFORM TO THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, ACI 318-99, AND TO THE ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES REPORT BY ACI COMMITTEE 350R-89.

FLOOR SLOPES SHALL BE AN INTEGRAL PART OF STRUCTURAL SLABS. SEPARATE CONCRETE FILL IS NOT PERMITTED UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS.

FURNISH ALL CONCRETE MASONRY UNIT (CMU) WALL REINFORCEMENT TO MASONRY SUB-CONTRACTOR FOR HIS INSTALLATION. REINFORCEMENT SIZE, SPACING, LENGTH AND LOCATION INDICATED ON ARCHITECTURAL DRAWINGS AND/OR IN CONFORMANCE WITH SPECIFICATION SECTION 04200.

LEGEND

AB	ANCHOR BOLT
ADD	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
ARCH	ARCHITECTURAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BM	BEAM
BOT,B	BOTTOM
CJ	CONSTRUCTION JOINT
CL, C	CENTERLINE
CL, CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DEGR	DEGREE
DET	DETAIL
DIA	DIAMETER
DIR	DIRECTION
DN	DOWN
DP	DEEP
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EL	ELEVATION
EW	EACH WAY
EXIST	EXISTING
FD	FLOOR DRAIN
FF	FAR FACE
FIN	FINISH
FL	FLOOR
FTG	FOOTING
GRD	GRADE
HORIZ,H	HORIZONTAL
HP	HIGH POINT
IF	INSIDE FACE
LG	LONG
LLV	LONG LEG VERTICAL
LP	LOW POINT
MAX	MAXIMUM
MFR	MANUFACTURER
MECH	MECHANICAL
MIN	MINIMUM
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
PC	PIECE
PCF	POUNDS PER CUBIC FEET
PSF	POUNDS PER SQUARE FEET
PROJ	PROJECTION
R	RISER
SECT	SECTION
SPECS	SPECIFICATIONS
SQ	SQUARE
SSPC	STEEL STRUCTURES PAINTING COUNCIL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SYMM	SYMMETRICAL
T	TOP
TOC	TOP OF CONCRETE
THK	THICK
TOS	TOP OF STEEL
TR	TREADS
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT,V	VERTICAL
WS	WATERSTOP
WWF	WELDED WIRE FABRIC
——→	DIRECTION IN WHICH BARS EXTEND



NOTES:

1. WHEN CONCRETE FILL FOR FLOOR PITCH IS PLACED AROUND CONCRETE PEDESTALS, PROVIDE ONE-QUARTER INCH WIDE EXPANSION JOINT ALL AROUND BETWEEN THE CONCRETE PEDESTALS AND THE CONCRETE FLOOR FILL. PROVIDE PREMOLDED-JOINT FILLER CONFORMING TO ASTM D1752, TYPE I OR II. SEAL EXPANSION JOINT WITH COMPOUND CONFORMING TO ASTM C920, TYPE S OR M, GRADE P, CLASS 25. PROVIDE BACK-UP MATERIAL AND BOND BREAKER AS REQUIRED BY THE JOINT COMPOUNDED MANUFACTURER.

EQUIPMENT PAD - NEW FLOOR

NTS

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

PREPARED BY :
DMC ENGINEERING
DMC ENGINEERING, INCORPORATED
63 FOUNTAIN STREET, SUITE 303
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NO.	DATE	REVISIONS	BY	CK'D

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. CAMPION
No. 29951
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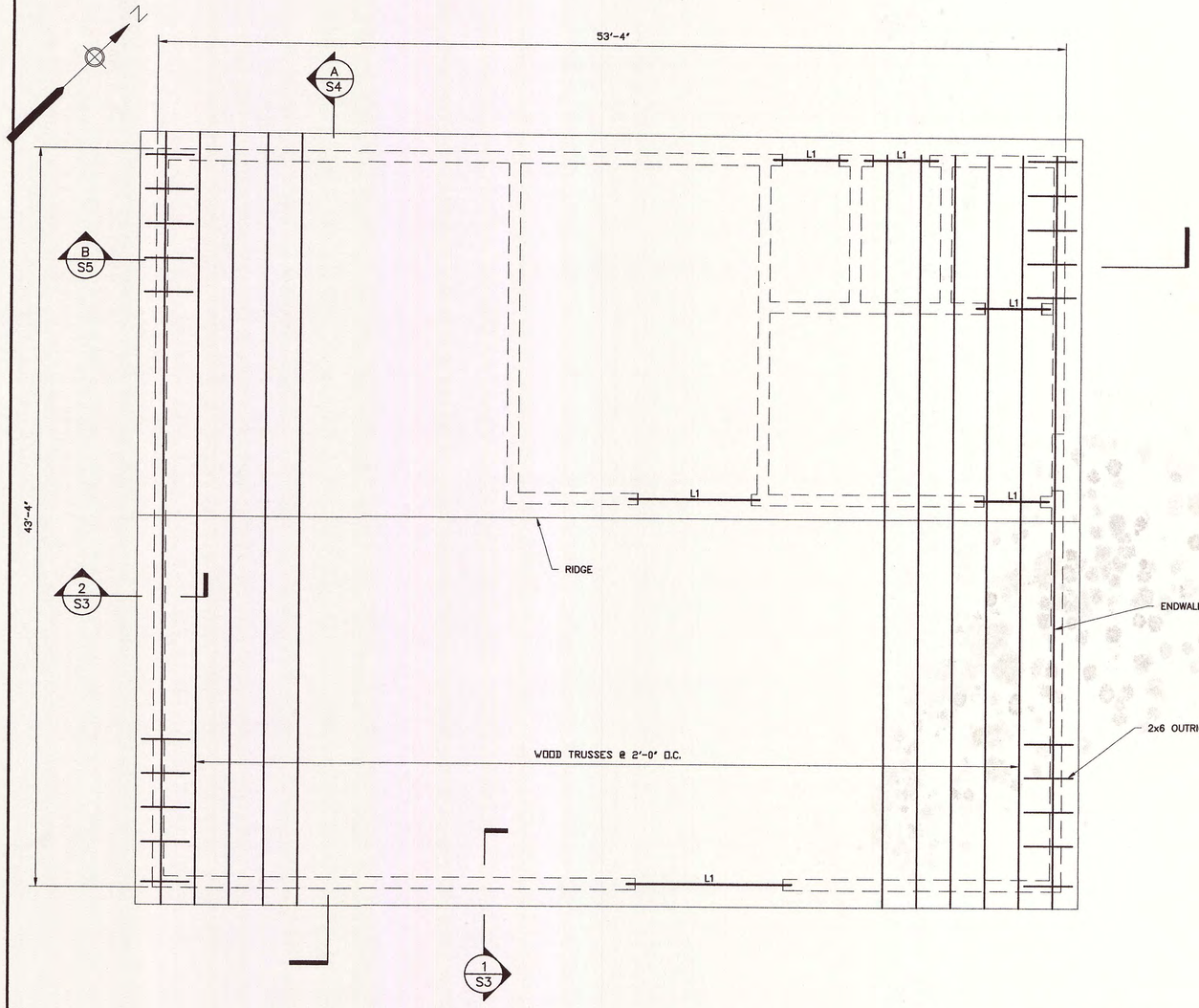
DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTEWATER TREATMENT PLANT
COLLECTION SYSTEM

UPPER LEVEL PLAN AND DETAILS

DRAWN BY: CD	DATE: AUG 2001
CHECKED BY: RWM	PROJ. NO.: N13816F5
PROJ. ENG.	DRAW. NO.
SHEET S2	



ROOF FRAMING PLAN

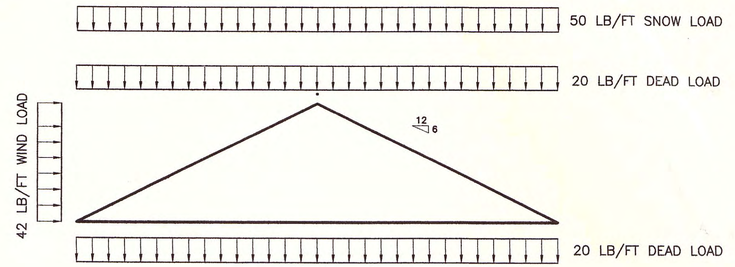
SCALE: 1/4" = 1'-0"

NOTES:

L1 – INDICATES MASONRY LINTEL, SEE SCHEDULE THIS SHEET FOR LINTEL SIZES. SEE ARCHITECTURAL DRAWINGS FOR MASONRY OPENING DIMENSIONS.

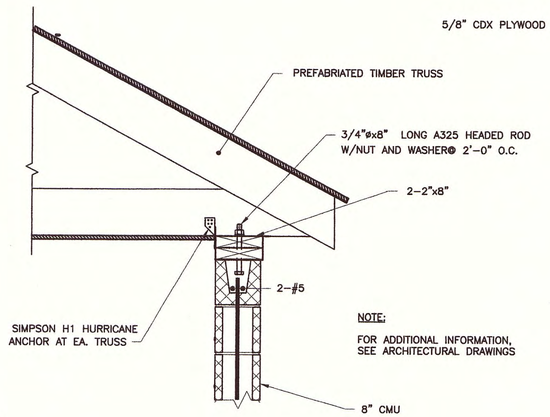
FOR LEGEND AND GENERAL NOTES SEE SHEET S-2

MASONRY LINTELS			
WALL THICKNESS	MAXIMUM OPENING WIDTH	LINTEL BLOCK SIZE (WIDTH X HEIGHT)	HORIZONTAL REINFORCEMENT
8" CMU	6'-4"	8" X 8"	2 – #4
	8'-4"	8" X 16"	2 – #4
	10'-0"	8" X 16"	2 – #5



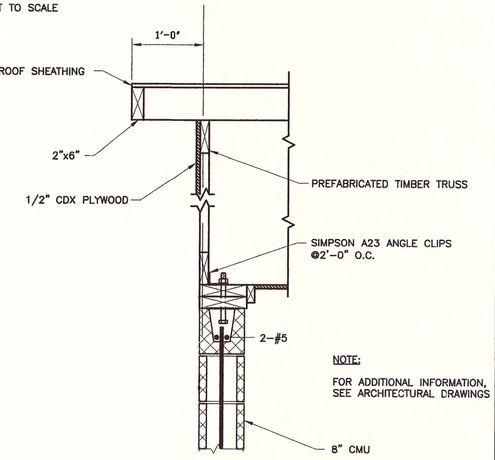
TRUSS T1

SCALE: NOT TO SCALE



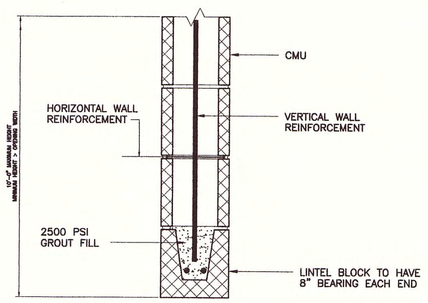
1/S3 SECTION

SCALE: 1" = 1'-0"



2/S3 SECTION

SCALE: 1" = 1'-0"



MASONRY LINTEL

NTS

APPROVED

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUG 2 2 2001

date

FABRICATED WOOD TRUSSES

1. ALL WORK SHALL CONFORM TO THE COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE, LATEST EDITION.
2. MEMBERS AT ALL JOINTS SHALL FIT TIGHT TO BEAR WOOD TO WOOD, CONNECTOR PLATES SHALL BE UNDAMAGED WHEN TRUSSES ARE ERECTED AND SHALL BE WELL EMBEDDED AND ACCURATELY ALIGNED.
3. SPLICES SHALL BE LOCATED ONLY WHERE SHOWN ON APPROVED SHOP DRAWINGS. NO TRUSS MEMBERS SHALL BE CUT OR SPLICED IN THE FIELD.
4. 2X4 LATERAL BRACING SHALL BE PROVIDED AT 24 INCHES ON CENTER ON THE TOP SIDE OF THE BOTTOM TRUSS CHORD.
5. TOP CHORD BRACING SHALL REMAIN IN-PLACE UNTIL REPLACED BY ROOF SHEATHING.
6. THE TRUSS MANUFACTURER SHALL SUBMIT FIVE SETS OF SHOP AND ERECTION DRAWINGS AND CALCULATIONS. THIS SUBMITTAL SHALL BE STAMPED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER AND SHALL BE APPROVED BY THE ENGINEER BEFORE MANUFACTURING.
7. THE TRUSS ERECTOR SHALL BE A LICENSED CONTRACTOR WITH 3 YEARS PREVIOUS EXPERIENCE ERECTING SIMILAR TYPE TRUSSES.
8. MAXIMUM TRUSS DEFLECTION FROM SNOW LOAD = 1/360 SPAN.
9. PROVIDE TEMPORARY SHORING AND BRACING MEMBERS WITH CONNECTIONS OF SUFFICIENT STRENGTH TO BEAR IMPOSED LOADS AND IN ACCORDANCE WITH TRUSS PLATE INSTITUTE HIB-91 AND THE MANUFACTURERS RECOMMENDATIONS.

PREPARED BY : DMC ENGINEERING

DMC ENGINEERING, INCORPORATED
63 FOUNTAIN STREET, SUITE 303
FRAMINGHAM, MA 01702

NO.	DATE	REVISIONS	BY	CK'D

COMMONWEALTH OF MASSACHUSETTS DANIEL M. CARON NO. 29951 REGISTERED PROFESSIONAL ENGINEER

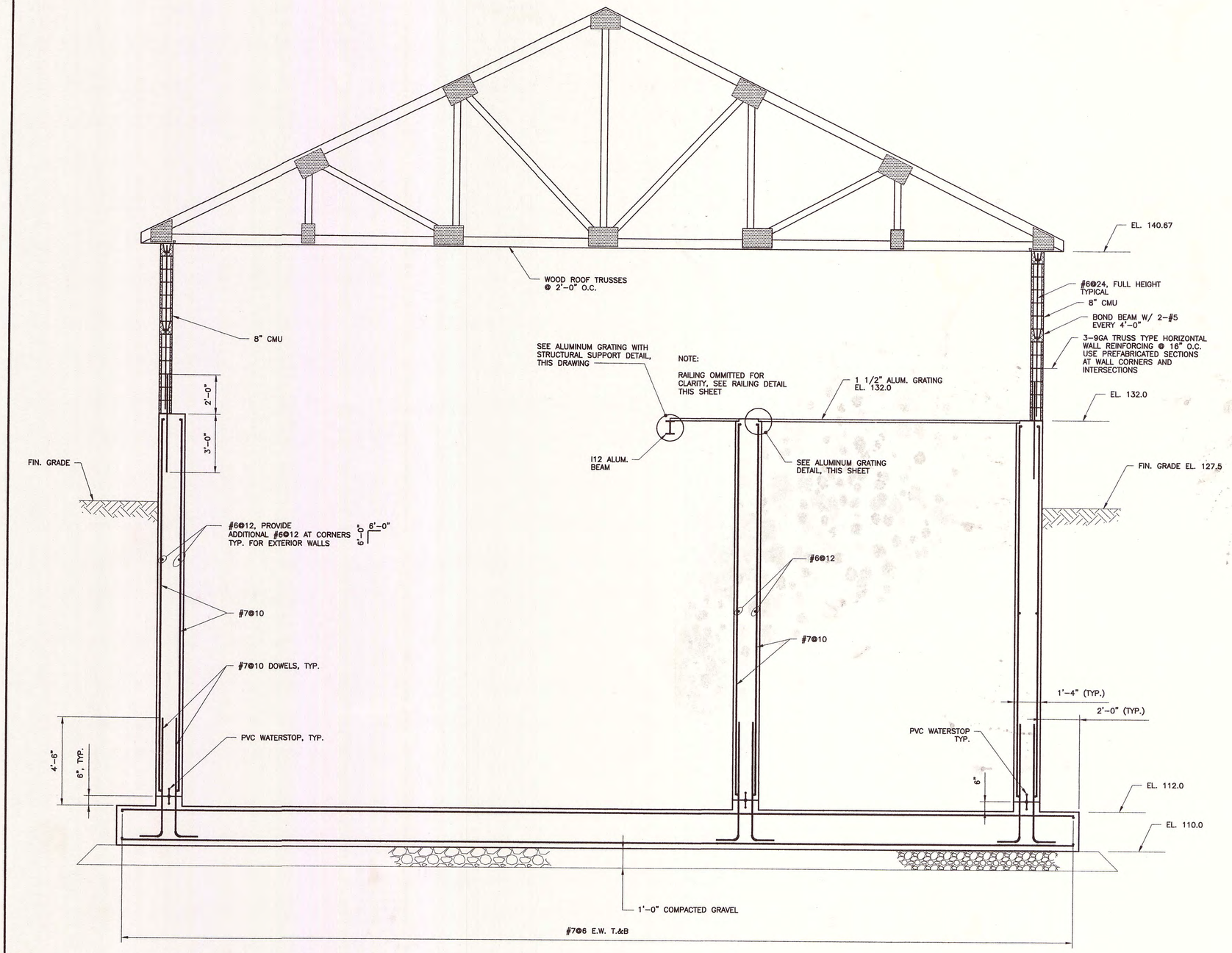
DuBois & King inc. engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTEWATER TREATMENT PLANT
COLLECTION SYSTEM

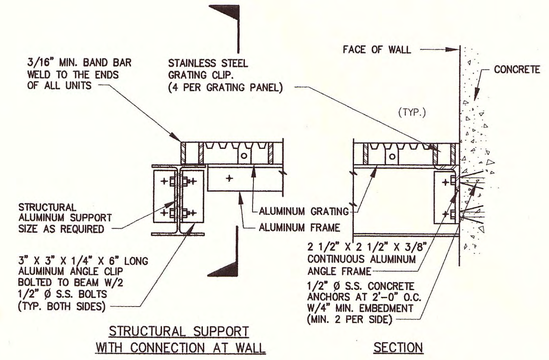
ROOF PLAN, NOTES AND DETAILS

DRAWN BY	DATE
CD	AUG 2001
CHECKED BY	PROJ. NO.
RWM	N13816F5
PROJ. ENG.	DRAV. NO.

SHEET S3

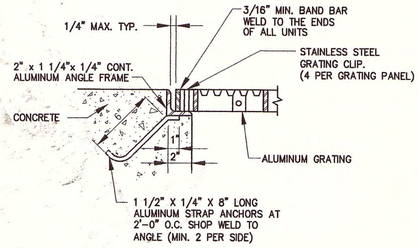


A/S1 SECTION
SCALE: 3/8" = 1'-0"



ALUMINUM GRATING WITH STRUCTURAL SUPPORT

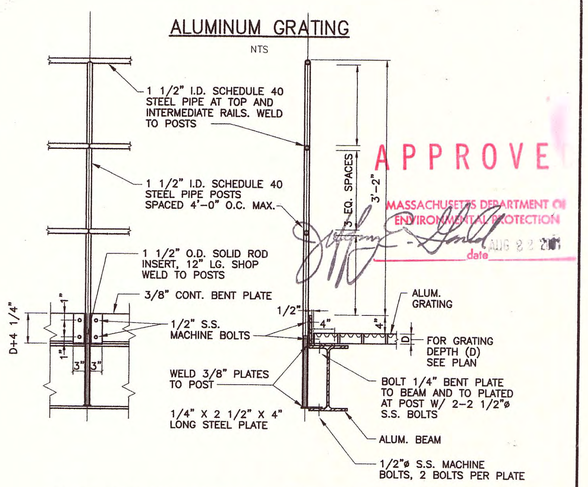
NTS



SECTION AT TOP OF WALL

ALUMINUM GRATING

NTS



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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 2 2 2001

THREE RAIL ALUMINUM RAILING AT GRATING FLOOR

N.T.S.

PREPARED BY :
DMC ENGINEERING
DMC ENGINEERING, INCORPORATED
63 FOUNTAIN STREET, SUITE 303
FRAMINGHAM, MA 01702

NO.	DATE	REVISIONS	BY	CK'D

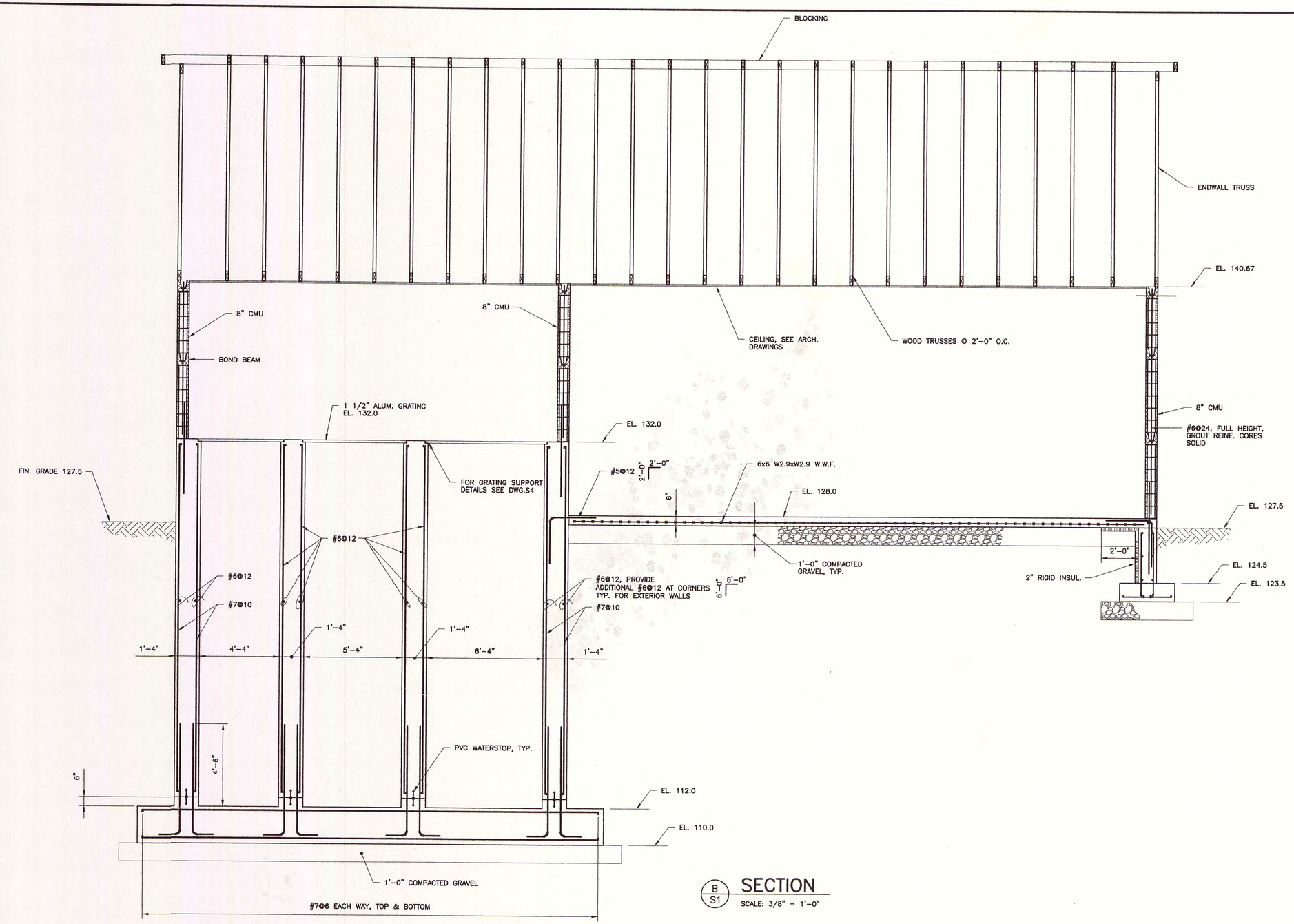
COMMONWEALTH OF MASSACHUSETTS
DANIEL M. BERON
No. 28951
REGISTERED PROFESSIONAL ENGINEER

DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTEWATER TREATMENT PLANT
COLLECTION SYSTEM

SECTIONS AND DETAILS I

DRAWN BY	DATE
CD	AUG 2001
CHECKED BY	PROJ. NO.
RWM	N13816F5
PROJ. ENG.	DRAW. NO.
SHEET	S4



B/S1 SECTION

SCALE: 3/8" = 1'-0"

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AUG 22 2001

PREPARED BY :

DMC ENGINEERING

DMC ENGINEERING, INCORPORATED
63 FOUNTAIN STREET, SUITE 303
FRAMINGHAM, MA 01702

NO.	DATE	REVISIONS	BY	CK'D

DANIEL M. CARSON — REGISTERED PROFESSIONAL ENGINEER

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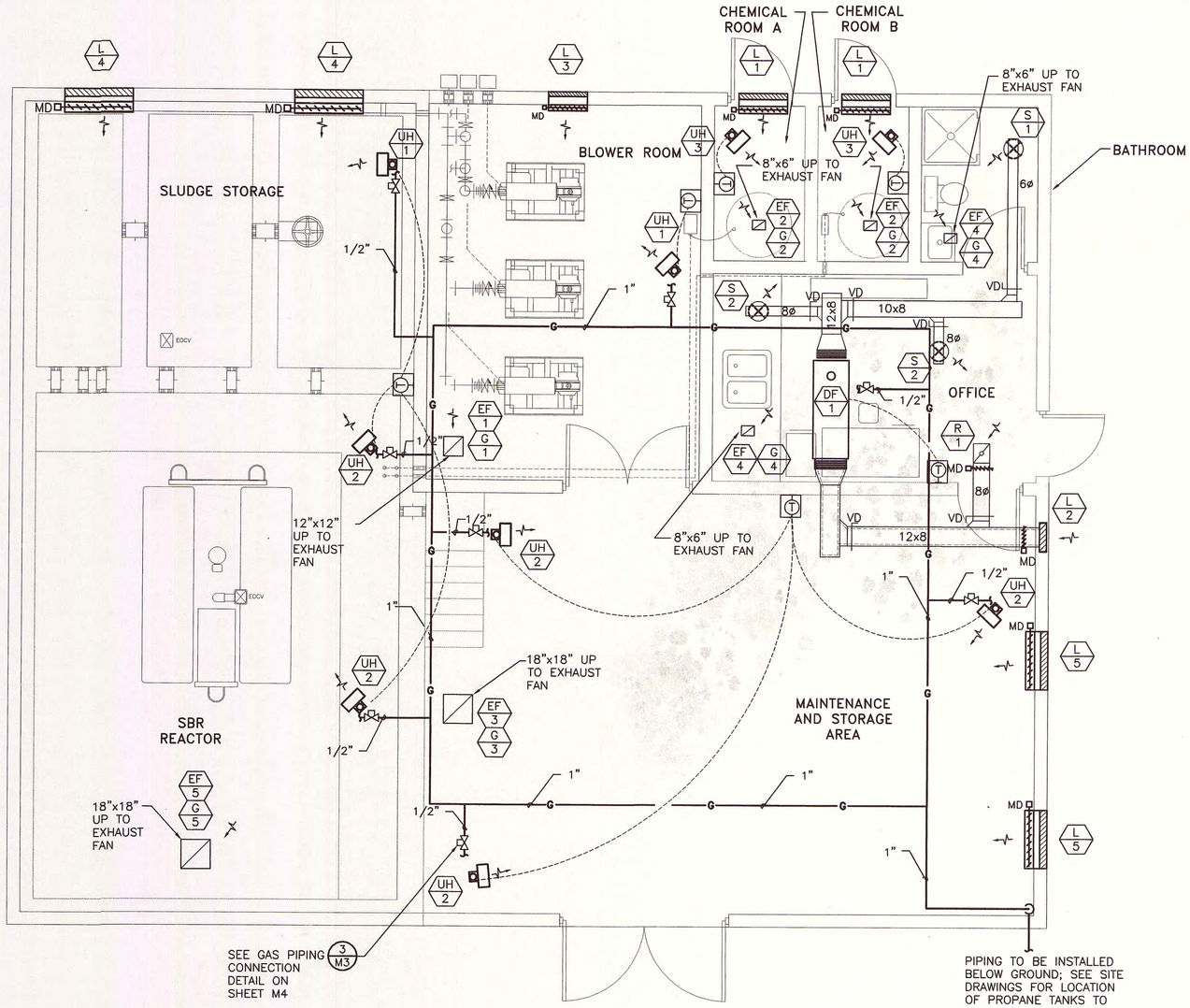
PLYMOUTH MUNICIPAL AIRPORT
WASTEWATER TREATMENT PLANT
COLLECTION SYSTEM

SECTIONS AND DETAILS II

DRAWN BY	DATE
CD	JUNE 2001
CHECKED BY	PROJ. NO.
RWM	N13816F5
PROJ. ENG.	DRAW. NO.

SHEET S5



LEGEND

- PIPE DROP
- PIPE RISER
- GATE VALVE
- THERMOSTAT, H=HEATING, H/C=HEATING–COOLING E=ELECTRIC W/ SECURITY COVER AND LOCK
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- SUPPLY DUCT RISER
- RETURN DUCT RISER
- VOLUME DAMPER
- ACOUSTICALLY LINED DUCTWORK
- EQUIPMENT TAG
- MOTOR OPERATED DAMPER
- FLEX DUCT CONNECTION
- AIR FLOW INDICATOR
- GAS PIPING
- GAS COCK
- UNIT HEATER

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AUG 22 2001
date

MECHANICAL PLAN
SCALE: 1/4"=1'–0"

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

HEATING & VENTILATION EQUIPMENT PLAN

DRAWN BY JED	DATE AUGUST, 2001
CHECKED BY KAA	PROJ. NO. N13816F5
PROJ. ENG.	DRAW. NO. M1381601
SHEET M1	

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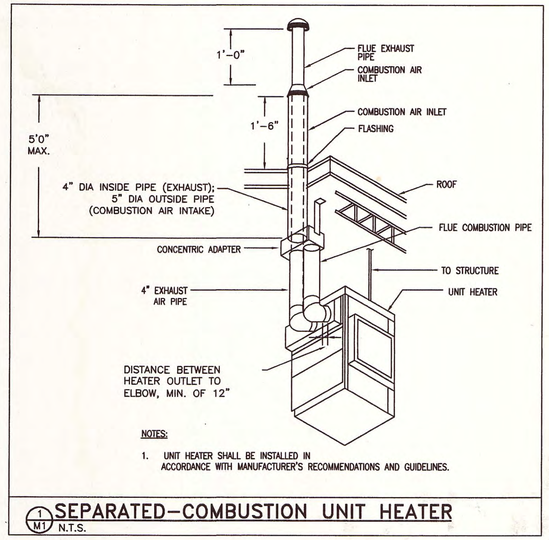
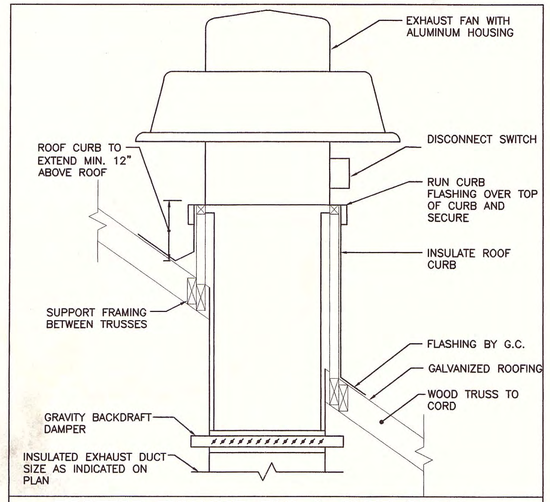
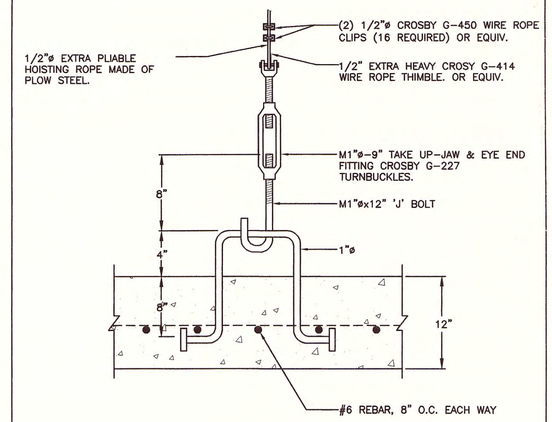


1/M1 SEPARATED-COMBUSTION UNIT HEATER
N.T.S.



2/M1 ROOFTOP EXHAUST FAN & CURB DETAIL
N.T.S.



3/M1 PROPANE TANK HOLD DOWN DETAIL
N.T.S.

DIFFUSER, GRILLE AND REGISTER SCHEDULE

NO.	MANUFACTURER	SERIES	CFM	FPM	SIZE	SP	NECK SIZE D	B	C	E (POS. 1)	DAMPER	FINISH	REMARKS
S-1	TITUS	TMR-AA	100	500	-	-	6ø"	6 1/2"	11 1/8	1 3/4"	NO	WHITE	
S-2	TITUS	TDCA-NT	175	500	-	-	8ø"	8 1/2"	14 3/4"	2 1/8"	NO	WHITE	
R-1	TITUS	56-FL	200	-	10x6	-	-	-	-	-	NO	WHITE	
G-1	TITUS	56-FL	450	-	12x8	0.12	-	-	-	-	NO	ALUMINUM COLORED PAINT	
G-2	TITUS	56-FL	150	-	8x6	0.07	-	-	-	-	NO	ALUMINUM COLORED PAINT	
G-3	TITUS	56-FL	1200	-	18x18	0.07	-	-	-	-	NO	ALUMINUM COLORED PAINT	
G-4	TITUS	56-FL	125	-	8x6	0.05	-	-	-	-	NO	WHITE	
G-5	TITUS	56-FL	1400	-	18x18	0.09	-	-	-	-	NO	ALUMINUM COLORED PAINT	

NOTES:
1. "B", THE CEILING OPENING DIAMETER
2. "C", OUTSIDE DIAMETER
3. "D", NOMINAL ROUND DUCT SIZE
4. "E", POSITION OF HORIZONTAL DISCHARGE

EXHAUST FAN SCHEDULE

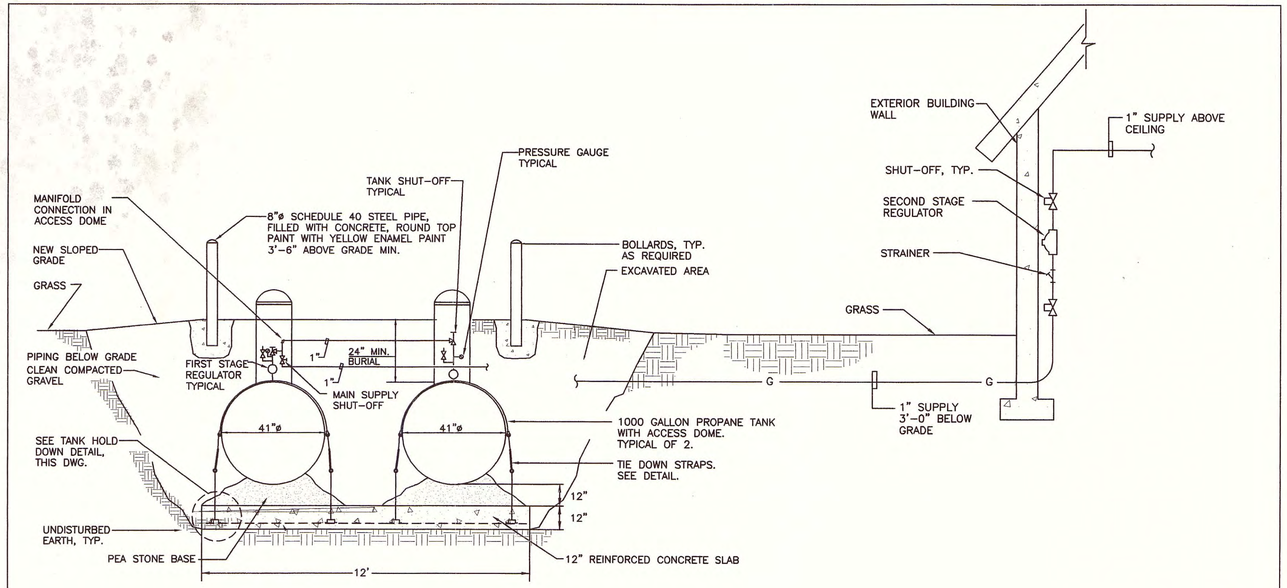
NO.	MANUFACTURER	MODEL	CFM	S.P.	HP	VOLT	PH	Hz	RPM	REMARKS
EF-1	GREENHECK	GB90-4	450	0.15	1/4	115	1	60	784	-
EF-2	GREENHECK	GB70-6	150	0.17	1/6	115	1	60	939	EXPLOSION-PROOF, CHEMICAL RESISTANT
EF-3	GREENHECK	GB140-4	1200	0.25	1/4	115	1	60	809	-
EF-4	GREENHECK	GB70-6	125	0.14	1/6	115	1	60	784	-
EF-5	GREENHECK	GB140-4	1400	0.40	1/4	115	1	60	988	-

UNIT HEATER SCHEDULE

REF NO.	MANUF/MODEL	INPUT Btu	OUTPUT Btu	FLUE CONNECTION SIZE		GAS CONN. SIZE	FAN					kW	CONTROL AMPS (24V)	REMARKS
				INLET	OUTLET		HP	RPM	ø	VOLTS	HZ			
UH-1	REZNOR/SFT-75	75000	60000	4"	5"	1/2"	1/20	1050	1	115	60	-	0.4	PROPANE-FIRED, SEPARATED COMBUSTION
UH-2	REZNOR/SFT-60	60000	48000	4"	5"	1/2"	1/20	1050	1	115	60	-	0.4	PROPANE-FIRED, SEPARATED COMBUSTION
UH-3	REZNOR/ EXU-3	-	-	-	-	-	1/2	1800	1	208	60	3.75	-	ELECTRIC; EXPOSION-PROO, CHEMICAL RESISTANT
DF-1	REZNOR XE75	75000	60000	-	-	1/2"	1/4	700	1	115	60	-	0.33	PROPANE-FIRED, SEPARATED COMBUSTION

LOUVER SCHEDULE

NO.	MANUF/MODEL	SERVICE	LENGTH INCH	HEIGHT INCH	DEPTH INCH	MIN FREE AREA (SQ. FT.)	CFM	FPM	REMARKS
L-1	RUSKIN	F.A. INTAKE	30	12	4	0.300	150	500	EXPLOSION -PROOF MOTORIZED DAMPER
L-2	RUSKIN	F.A. INTAKE	18	18	4	0.500	250	500	-
L-3	RUSKIN	F.A. INTAKE	24	18	4	0.900	450	500	-
L-4	RUSKIN	F.A. INTAKE	42	18	4	1.400	700	500	-
L-5	RUSKIN	F.A. INTAKE	36	18	4	1.200	600	500	-



5/M1 BELOW GROUND PROPANE TANK DETAIL
N.T.S.

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NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

HVAC EQUIPMENT SCHEDULES & DETAILS

DRAWN BY JED	DATE AUGUST, 2001
CHECKED BY KAA	PROJ. NO. N13816F5
PROJ. ENG.	DRAW. NO. M1381602
SHEET M2	

CHEMICAL ROOM A

CHEMICAL ROOM B

PARTIAL PLAN

EMERGENCY EYE WASH AND SHOWER

INLINE ELECTRIC WATER HEATERS FOR THE SINK, SHOWER AND EMERGENCY EYE WASH. LOCATE UNITS FOR THE SHOWERS ABOVE THE CEILING.

DOMESTIC WATER SERVICE ENTRANCE

BATHROOM

TO SITE PUMP STATION. SEE SITE PLAN FOR CONTINUATION

8" SEWER

SLUDGE STORAGE

BLOWER ROOM

OFFICE

2" DRAIN TIGHT TO WALL. PIPE SINK WASTE WITH ACID RESISTANT POLYETHYLENE UP TO VENT. LEAVE PROVISIONS FOR FUTURE ACID DILUTION TANK.

2" VENT UP

1/2" TRAP PRIMER WATER SUPPLY; (TYP. OF 9)

SBR REACTOR

MAINTENANCE AND STORAGE AREA

EOCV

PLUMBING LEGEND

- SANITARY PIPING
- VENT PIPING
- COLD WATER PIPING
- HOT WATER PIPING
- BELOW SLAB PIPING
- BALL VALVE
- GAS PIPING
- GATE VALVE
- FIXTURE SHUT OFF
- PIPE RISER
- PIPE DROP
- TEMPERING VALVE
- FLOOR DRAIN
- FLOOR CLEANOUT
- HOSE STATION
- CHECK VALVE
- TEMPERATURE GAUGE
- INLINE ELECTRIC WATER HEATER
- HOSE BIB AND NON-FREEZE HOSE BIB (NFHB)

PLUMBING PLAN

SCALE: 3/8"=1'-0"

PLUMBING PARTIAL PLAN

SCALE: 1"=1'-0"

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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

date: APR 12 2001

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

PLUMBING SYSTEMS PLAN

DRAWN BY JED	DATE AUGUST, 2001
CHECKED BY KAA	PROJ. NO. N13816F5
PROJ. ENG.	DRAW. NO. M1381603
SHEET M3	

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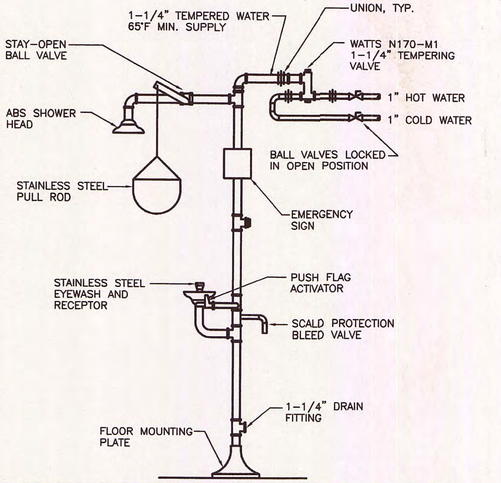
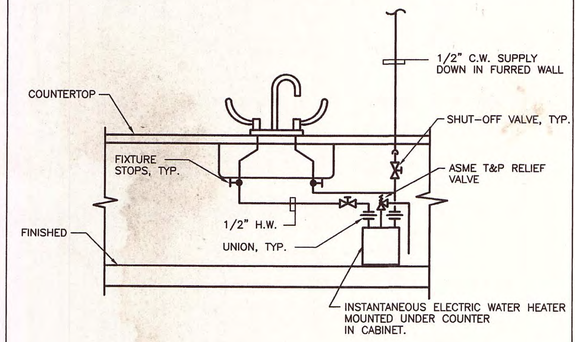
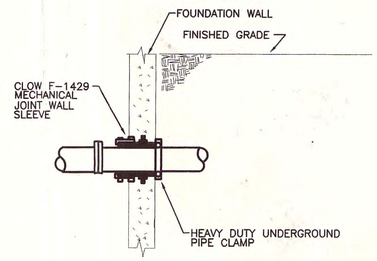


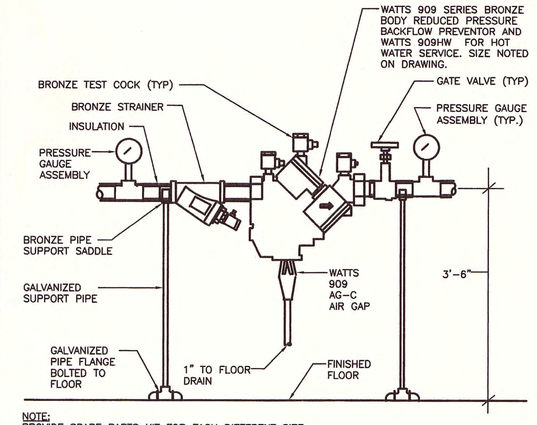
1 M3 EMERGENCY EYEWASH/SHOWER DETAIL
N.T.S.



2 M3 UNDERSINK ELECTRICAL WATER HEATER DETAIL
N.T.S.

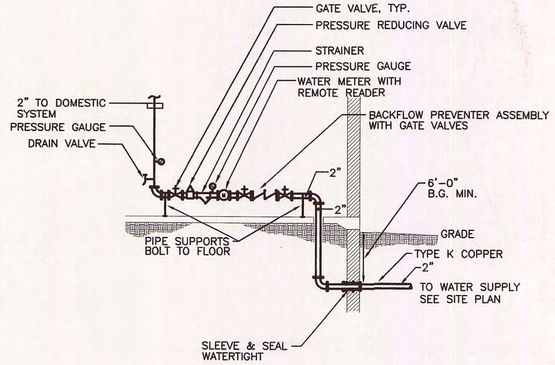


3 M3 WATER SERVICE THRU EXTERIOR WALL
N.T.S.

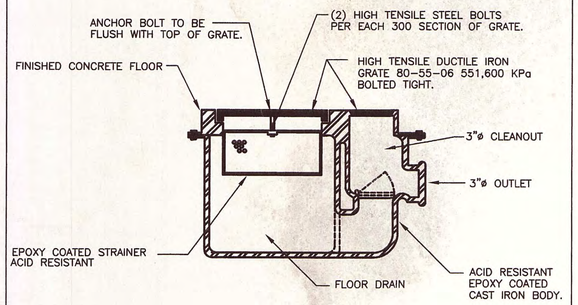


NOTE:
PROVIDE SPARE PARTS KIT FOR EACH DIFFERENT SIZE
UNIT INCLUDING GASKETS, SPRINGS, & MAIN ASSEMBLIES

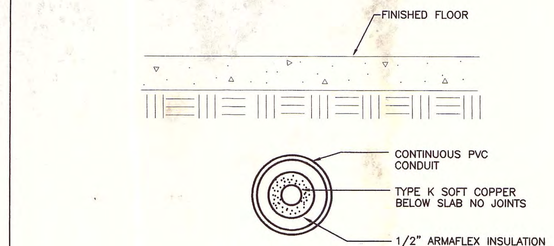
4 M3 REDUCED PRESSURE BACKFLOW PREVENTOR
N.T.S.



5 M3 DOMESTIC WATER ENTRANCE DETAIL
N.T.S.



6 M3 FLOOR DRAIN DETAIL
N.T.S.



7 M3 BELOW SLAB COLD WATER PIPING DETAIL
N.T.S.

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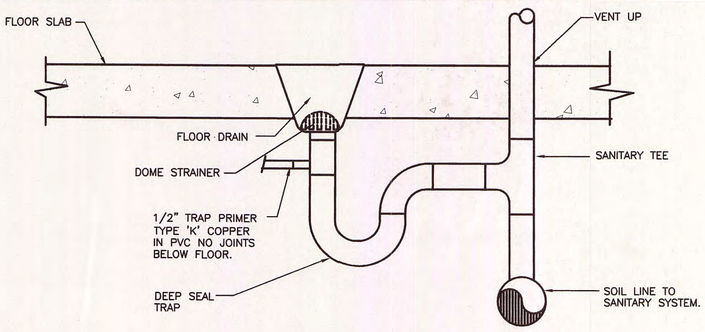
AUG 22 2001
date

3 M1 UNIT HEATER GAS PIPING CONNECTION DETAIL
N.T.S.



3 P1 FLOOR DRAIN TRAP W/ PRIMER DETAIL
N.T.S.

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	MANUFACTURER	MODEL NO.	SUPPLY FITTING	CW	HW	SOIL	DRAIN	VENT	TRAP	REMARKS
P-1	WATER CLOSET	AMERICAN STANDARD	2292.203	TANK-A.S.-#4086.025	1/2"	–	3"	–	2"	INTEGRAL	–
P-2	LAVATORY	AMERICAN STANDARD	0355.012	S-60-G-A	1/2"	1/2"	–	2"	2"	1 1/2" P	–
P-4	LAB SINK	ELKAY	MDLR3322-12	ELKAY-#LK-4100	1/2"	1/2"	–	2"	2"	1 1/2" P	TYPE 316, CHEMICAL RESISTANCE
P-5	FLOOR DRAIN	ZURN	ZN-548-AR-3	–	–	–	–	3"	2"	INTEGRAL	INTEGRAL CLEANOUT
P-7	SHOWER	FIAT	632	SYMMONS-#4-282, FIAT-#D-24G			–	2"	2"	–	
P-8	EMERGENCY SHOWER	HAWS	8300CRP.157	–	1/2"	1/2"	–	1-1/4"	–	–	
P-9	HOSE BIB	WOODFORD	24P-3/4"	–	3/4"	–	–	–	–	–	
P-10	HOSE BIB	ZURN	Z-1320-3/4"	–	3/4"	–	–	–	–	–	NON-FREEZE HOSE BIB
P-11	HOSE STATION	T&S	MV-1907-12CW	–	3/4"	–	–	–	–	–	BRASS

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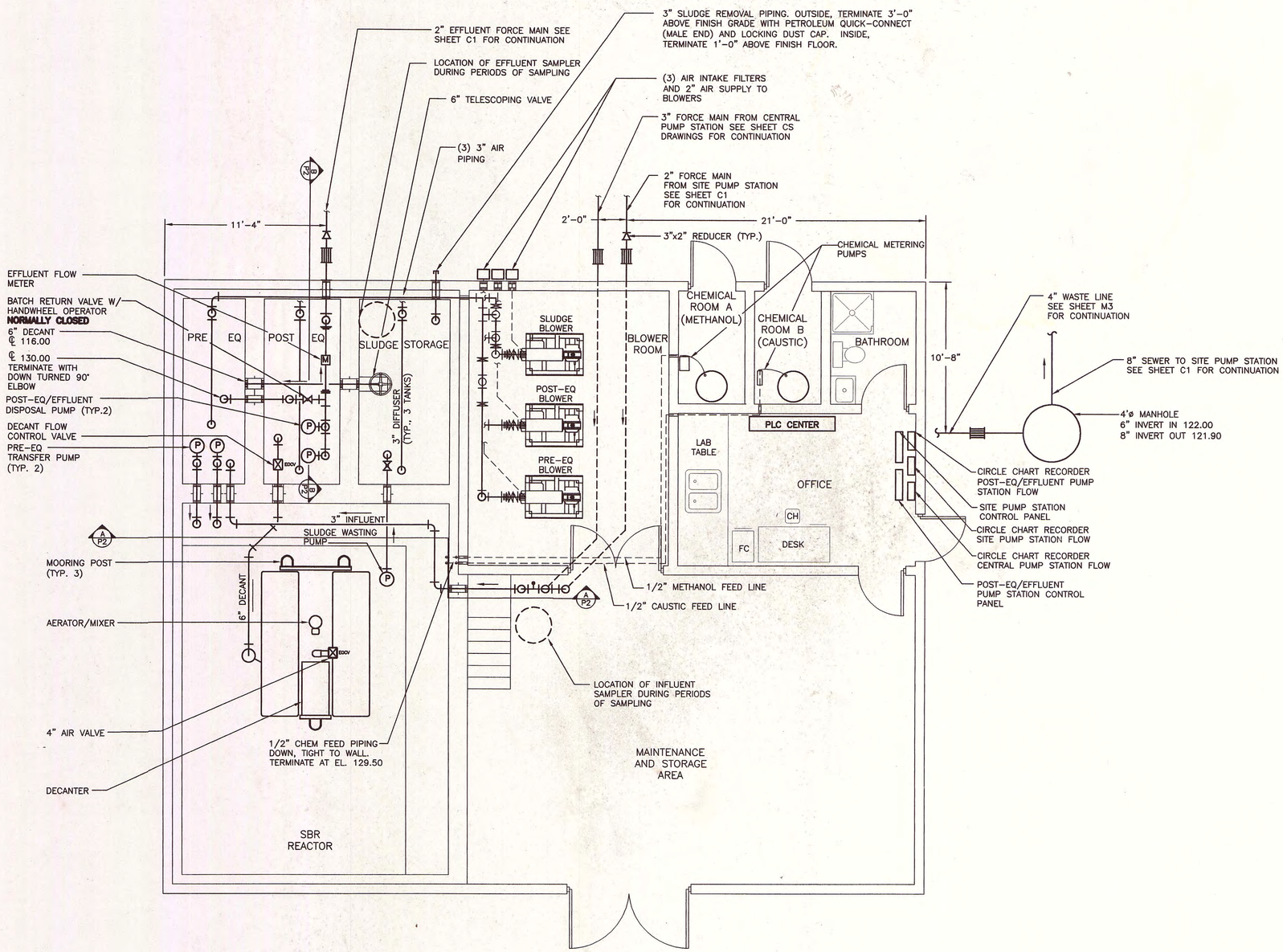
PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT
AND COLLECTION SYSTEM

PLUMBING EQUIPMENT SCHEDULES
& DETAILS

DRAWN BY JED	DATE AUGUST, 2001
CHECKED BY KAA	PROJ. NO. N13816F5
PROJ. ENG.	DRAW. NO. M1381604
SHEET M4	



LEGEND

———	PIPING	⋈	BUTTERFLY VALVE
- - - -	HIDDEN PIPING	◁	REDUCER
	WALL SLEEVE W/DOUBLE LINK SEAL	⊤	END CAP
	90° ELBOW (DOWN) FLANGED, M.J.		COUPLING
	90° ELBOW (UP) FLANGED, M.J.	EOCV	ELECTRICALLY OPERATED CONTROL VALVE
	90° ELBOW FLANGED, M.J.		CHECK VALVE
	45° ELBOW FLANGED, M.J.		UNION
	LATERAL FLANGED, M.J.		SUBMERSIBLE PUMP
	TEE (DOWN) FLANGED, M.J.		PLUG VALVE
	TEE (UP) FLANGED, M.J.		REDUCING FLANGE
	TEE FLANGED, M.J.		

PROCESS PIPING PLAN

SCALE: 1/4" = 1'-0"

NOTE:

REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL PLUMBING PIPING.

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date AUG 22 2001

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

PROCESS EQUIPMENT AND PIPING LAYOUT

DRAWN BY MVW	DATE AUGUST 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. CKG	DRAW. NO.
SHEET P.1	

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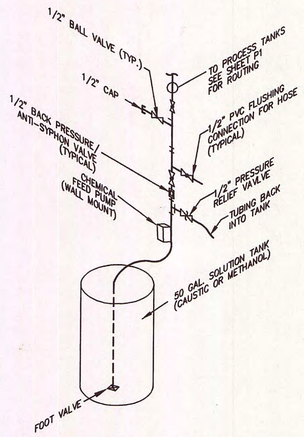
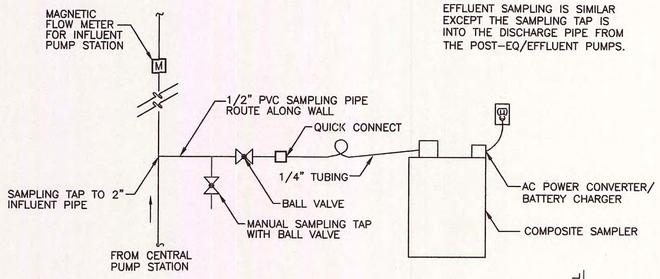


CHEMICAL FEED SCHEMATIC

NOT TO SCALE

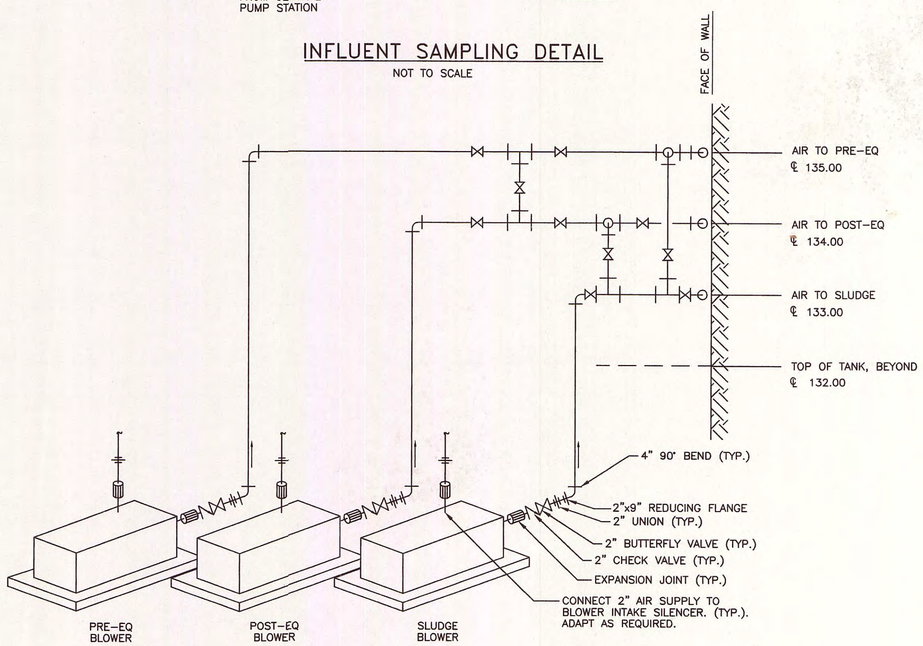


NOTE:

EFFLUENT SAMPLING IS SIMILAR EXCEPT THE SAMPLING TAP IS INTO THE DISCHARGE PIPE FROM THE POST-EQ/EFFLUENT PUMPS.

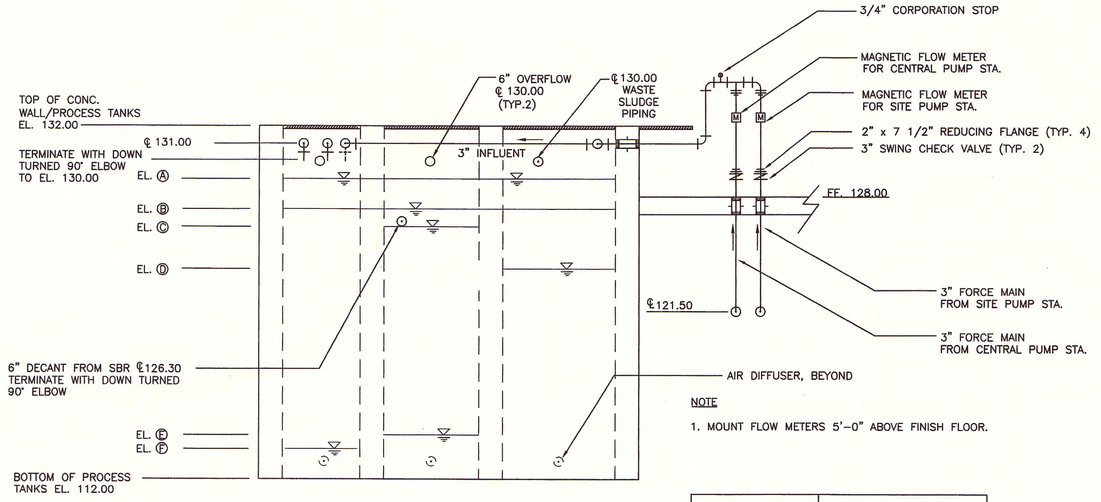
INFLUENT SAMPLING DETAIL

NOT TO SCALE



BLOWER SCHEMATIC

NOT TO SCALE



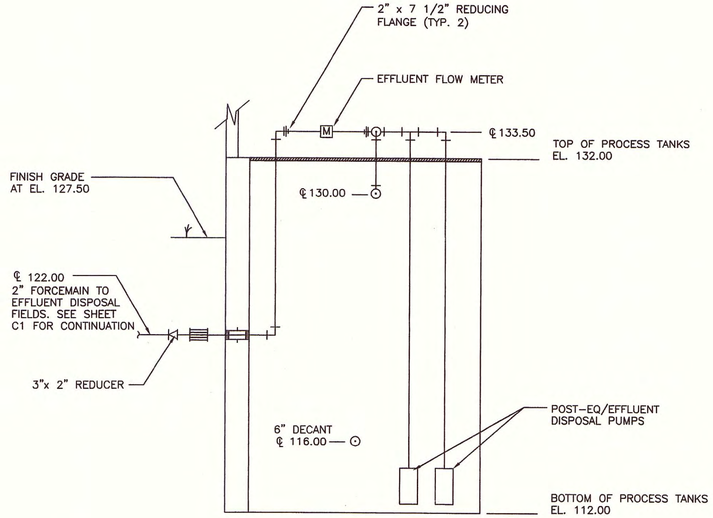
NOTE

1. MOUNT FLOW METERS 5'-0" ABOVE FINISH FLOOR.

SECTION (A/P1)

SCALE: 1/4"= 1'-0"

PROCESS TANK	LIQUID LEVELS		
PRE- EQ	MIN.	(F)	113.50
	MAX.	(A)	129.00
SBR	MIN.	(B)	127.30
	MAX.	(A)	129.00
POST- EQ	MIN.	(E)	114.50
	MAX.	(C)	126.00
SLUDGE STORAGE	MIN.	(D)	123.90
	MAX.	(A)	129.00



SECTION (B/P1)

SCALE: 1/4"= 1'-0"

APPROVED

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

date AUG 2 2 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

PROCESS PIPING DETAILS

DRAWN BY: MVW	DATE: AUGUST 2001
CHECKED BY:	PROJ. NO.: N13816F5
PROJ. ENG.: CKG	DRAW. NO.:
SHEET: P2	

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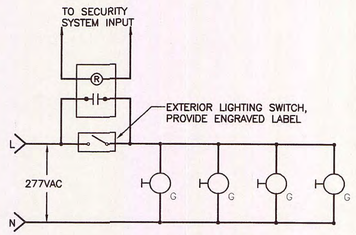
LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	STYLE	CATALOG #	FINISH	DIFFUSER	MOUNTING	LAMPS	REMARKS
A	COLUMBIA	ENCLOSED INDUSTRIAL	LUN4-232-EB8-277	WHITE	ACRYLIC	CLG.-SURF.	(2) 32W T-8	4
B	COLUMBIA	WRAP AROUND	WC4-332-EB8LH277	WHITE	ACRYLIC	CLG.-SURF.	(3) 32W T-8	4
C	COLUMBIA	VANITY	WAL2-217-EB8-277	WHITE	ACRYLIC	WALL-SURF.	(2) 17W T-8	4,5
D	CANLET	CORROSION PROOF	G1CF15-GSC	GREY	GLASS	CLG.-SURF.	(1) 100W A19	3
F	COOPER	EXPLOSION PROOF	EVCX	STANDARD	GLASS	CLG.-SURF.	(1) 100W A19	3
G	SPAULDING	WALL PACK	WLRII-S100-MT-PC-DBZ	DARK BRONZE	ACRYLIC	EXT. WALL-SURF	(1) 100W HPS	1,4
H	HUBBELL	INCANDESCENT FLOODS	MS-3	STANDARD	NONE	EXT. WALL-SURF.	(2) 100W PAR30	2,3

REMARKS:

1. REFER TO LIGHTING CONTROL SCHEMATIC THIS SHEET. MH=12' A.F.F.
2. PROVIDE HALOGEN LAMPS. MH=18" OVER TOP OF DOOR
3. 120VAC OPERATION
4. 277VAC OPERATION
5. MOUNT FIXTURE 78"AFF. ENSURE COORDINATION WITH VANITY MIRROR.

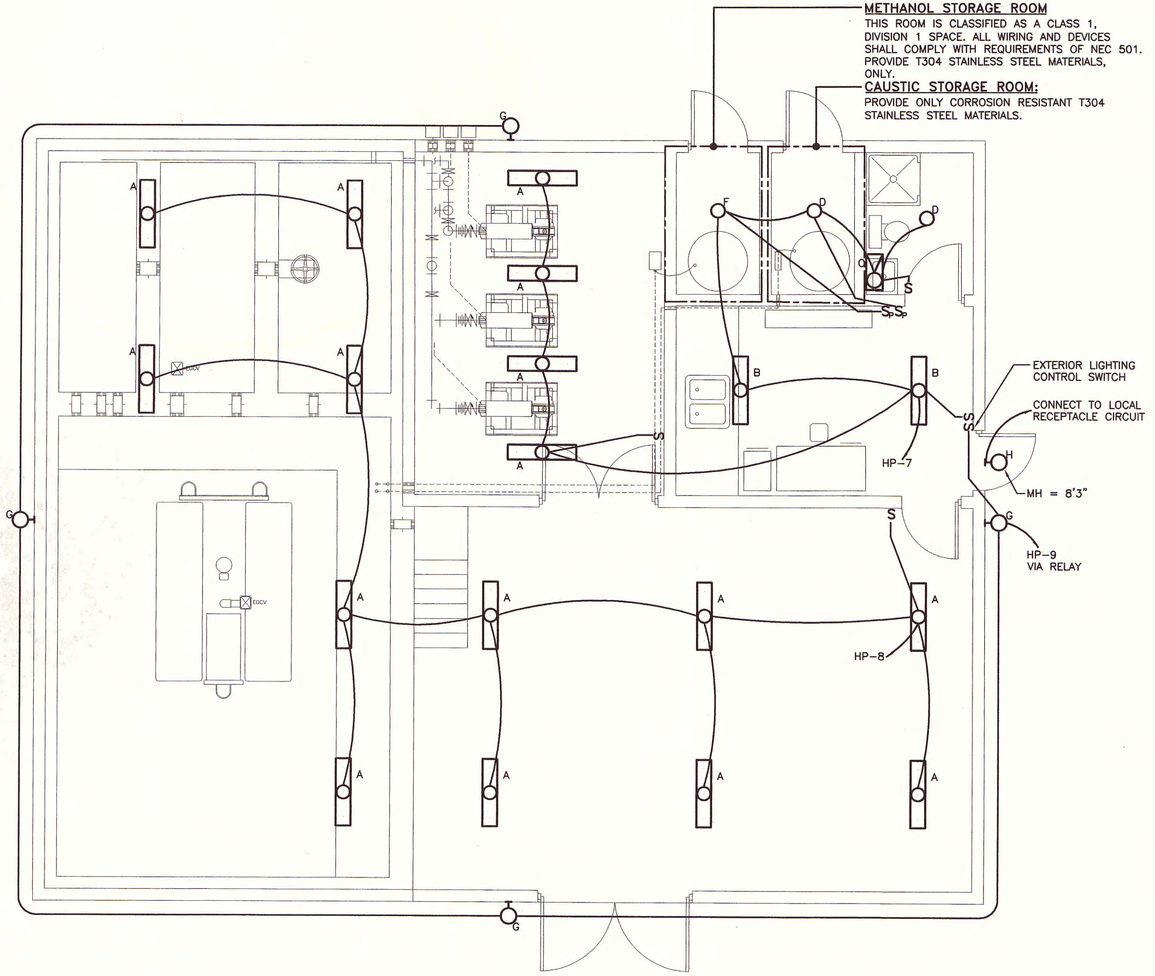


EXTERIOR LIGHTING CONTROL DIAGRAM
NO SCALE

ELECTRICAL LEGEND

- SURFACE MOUNT FLUORESCENT LIGHTING FIXTURE – TYPE AS INDICATED, SEE SCHEDULE.
- CEILING MOUNT LIGHTING FIXTURE – TYPE AS INDICATED, SEE SCHEDULE.
- WALL MOUNT LIGHTING FIXTURE – TYPE AS INDICATED, SEE SCHEDULE.
- S – SINGLE POLE LIGHTING SWITCH – MH=4'-0", SUBSCRIPTS 3=3 WAY, 4=4 WAY, P=PILOT LIGHT,
- R – LOW VOLTAGE SWITCHING RELAY.
- DUPLEX RECEPTACLE – MH=1'-6", U.O.N.
- SIMPLEX RECEPTACLE – MH=1'-6", U.O.N.
- DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER – MH=1'-6", U.O.N.
- TELEPHONE OUTLET – MH=1'-6", U.O.N.
- BRANCH CIRCUIT OR FEEDER.
- HOMERUN TO PANELBOARD AND BREAKER INDICATED.
- PANELBOARD – 120/208V AC, 3 PHASE, 4 WIRE, MH=6'-0" TO TOP.
- PANELBOARD – 277/480V AC, 3 PHASE, 4 WIRE, MH-6'-0" TO TOP.
- MOTOR LOCATION WITH HORSEPOWER DESIGNATION (F INDICATES FRACTIONAL HORSEPOWER).
- MOTORIZED DAMPER.
- THERMOSTAT, 120VAC
- CP – CONTROL PACKAGE – PROVIDED WITH EQUIPMENT.
- DISCONNECT SWITCH – MH=6'-0" TO TOP OR ON EQUIPMENT. FRAME/FUSE SIZE AS INDICATED.
- JUNCTION BOX – SIZE AS SHOWN OR PER N.E.C.
- MH – MOUNTING HEIGHT ABOVE FLOOR OR GRADE TO CENTERLINE OF OUTLET, U.O.N.
- U.O.N. – UNLESS OTHERWISE NOTED.
- TYP. – TYPICAL.
- AFF – ABOVE FINISH FLOOR
- CCR – CIRCULAR CHART RECORDER
- WP – WEATHER PROOF
- TVSS – TRANSIENT VOLTAGE SURGE SUPRESSOR

- FM – FLOW METER
- WH – WATER HEATER (INSTANTANEOUS)
- H – HEAT DETECTOR
- IR – INFRA-RED MOTION DETECTOR
- D – DOOR CONTACTS
- K – SECURITY SYSTEM KEYPAD
- HK – SECURITY SYSTEM HORN
- UNIT HEATER
- MOTORIZED WIER
- MOTORIZED VALVE
- UTILITY POLE
- GUY ANCHOR ASSEMBLY



LIGHTING PLAN
SCALE: 1/4"=1'-0"

CALLED NORTH

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

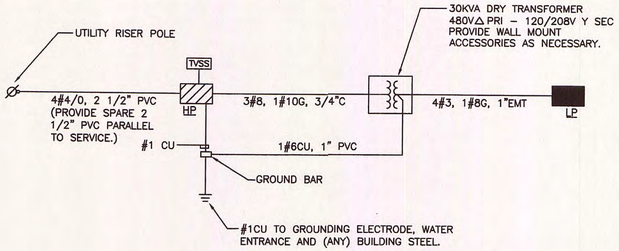
NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

LIGHTING PLAN, LEGEND, AND SCHEDULE

DRAWN BY	DATE
ELB	AUGUST 2001
CHECKED BY	PROJ. NO.
–	N13816F5
PROJ. ENG.	DRAW. NO.
–	–
SHEET	E1



ONE LINE DIAGRAM

NO SCALE

NOTES:
1. REFER TO ELECTRICAL SITE PLANS, DWG E3 AND E6, FOR NOTES REGARDING COORDINATION WITH UTILITY.

PANEL SCHEDULE

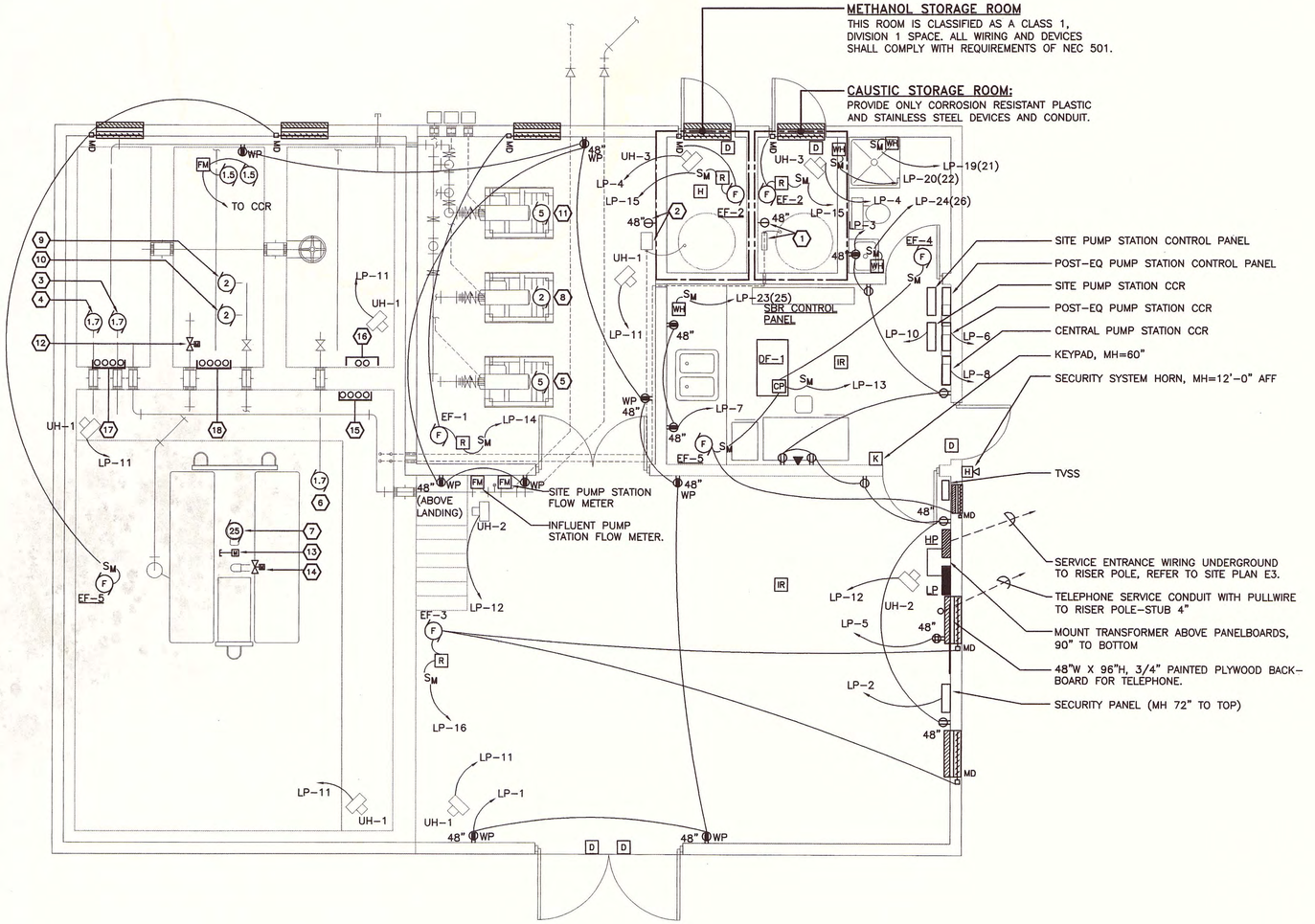
PANEL HP	400 AMP.		MAIN. 200A MCB		BRANCH BREAKER SUMMARY					
BUSES	W/GRD BUS	X	W/ISO. GRD BUS	X	POLES	AMPS.	USED.	SPARE	TOTAL	TOTAL POLES
277/480VAC, 3 PHASE, 4 WIRE					3	150	1	0	1	3
BREAKER INTERR'G CAPACITY			18,000 AIC		–	–	–	–	–	–
NEMA–12 ENCLOSURE			COVER TYPE		3	50	1	0	1	3
SURFACE MOUNT		X	CLAMPED ONLY	X	3	20	0	1	1	3
FLUSH MOUNT			DOOR–IN–DOOR		3	15	2	0	1	3
CIRCUIT BREAKER TYPE					1	20	3	9	12	12
BOLT–ON		X	PLUG–IN				BLANKS		12	42

BRANCH CIRCUITS NO.	BREAKERS POLE	BREAKERS AMP.	PH.	CON. LOAD KW.	CON. LOAD HP.	EQUIPMENT	WIRING LOAD WIRE	WIRING GROUND WIRE	WIRING COND.
1(3,5)	3	150	3	75.0	–	SBR CONTROL PANEL	4#1/0	1#6	2"
2(4,6)	3	50	3	30.0	–	SUBFEED LP (VIA XFRMR)	REFER TO ONE LINE DIAGRAM		
7,8	1	20	1	3.0	–	INTERIOR LIGHTING	2#12	1#12	3/4"
9	1	20	1	1.0	–	EXTERIOR LIGHTING	2#12	1#12	3/4"
10	1	20	1	–	–	SPARE	–	–	–
11(13,15)	3	40	3	6.0	–	SITE PUMP STATION	3#10	1#10	1"
12(14,16)	3	15	3	5.1	–	POST–EQ PUMP STATION	3#12	1#12	1"
–	–	–	–	–	–	–	–	–	–
18(20,22)	3	30	3	–	–	TVSS	3#6	1#10	1"
23	1	20	1	–	–	SPARE	–	–	–
24	1	20	1	–	–	SPARE	–	–	–
25	1	20	1	–	–	SPARE	–	–	–
26–30	1	20	1	–	–	SPARE	–	–	–
17,19,21, 31–42	1	20	1	–	–	SPACE	–	–	–

PANEL SCHEDULE

PANEL LP	100 AMP.		MAIN. 50A MCB		BRANCH BREAKER SUMMARY					
BUSES	W/GRD BUS	X	W/ISO. GRD BUS	X	POLES	AMPS.	USED.	SPARE	TOTAL	TOTAL POLES
120/208VAC, 3PH, 4W.					1	20	16	11	27	27
BREAKER INTERR'G CAPACITY			10,000 AIC		2	45	4	0	4	8
NEMA–12 ENCLOSURE			COVER TYPE							
SURFACE MOUNT		X	CLAMPED ONLY	X						
FLUSH MOUNT			DOOR–IN–DOOR							
CIRCUIT BREAKER TYPE										
BOLT–ON		X	PLUG–IN				BLANKS		0	36

BRANCH CIRCUITS NO.	BREAKERS POLE	BREAKERS AMP.	PH.	CON. LOAD KW.	CON. LOAD HP.	EQUIPMENT	WIRING LOAD WIRE	WIRING GROUND WIRE	WIRING COND.
1,3,5,7	1	20	1	3.1	–	RECEPTACLES	2#12	1#12	1/2"
2	1	20	1	0.1	–	SECURITY PANEL	2#12	1#12	1/2"
4	1	20	1	–	–	SPARE	–	–	–
6,8,10	1	20	1	0.3	–	FLOW METERS (EFFLUENT, SITE, INFLUENT)	2#12	1#12	1/2"
9	1	20	1	–	–	SPARE	–	–	–
11,12	1	20	1	0.2	–	UH–1, UH–2	2#12	1#12	1/2"
–	–	–	–	–	–	–	–	–	–
13	1	20	1	–	1/4	DF–1, EF4, EF5	2#12	1#12	1/2"
14	1	20	1	–	1/4	EF–1	2#12	1#12	1/2"
15	1	20	1	–	1/6	EF–2	2#12	1#12	1/2"
16	1	20	1	–	1/4	EF–3	2#12	1#12	1/2"
19(21),20(22), 23(25),24(26)	2	45	1	28.8	–	(4) WATER HEATERS	2#8	1#10	3/4"
17,18,28, 30–36	1	20	1	–	–	SPARE	–	–	–
27(29)	2	45	1	5.6	–	UH–3	2#8	1#10	3/4"



POWER & SIGNAL PLAN

SCALE: 1/4"=1'–0"

CALLED NORTH

NOTES:
1. (#) = WATER TREATMENT SYSTEM EQUIPMENT; REFER TO SBR CONTROL PANEL WIRING DIAGRAM, DWG E4.
2. TREATMENT SYSTEM EQUIPMENT AND PIPING INDICATED FOR INFORMATIONAL/COORDINATION PURPOSES ONLY.
3. REFER TO DETAILS FOR SPECIFIC EQUIPMENT CONNECTION INFORMATION.

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
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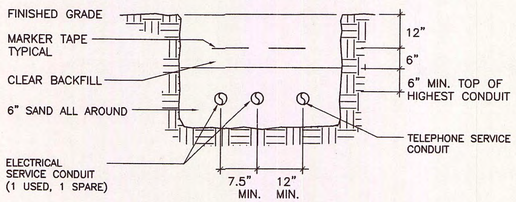
PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

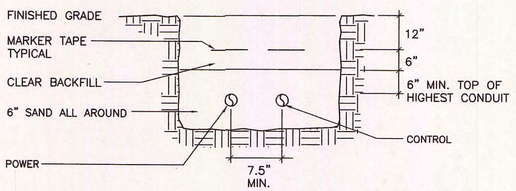
POWER AND SIGNAL PLAN, SCHEDULES AND DETAILS

DRAWN BY	DATE
ELB	AUGUST 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
–	–
SHEET E2	



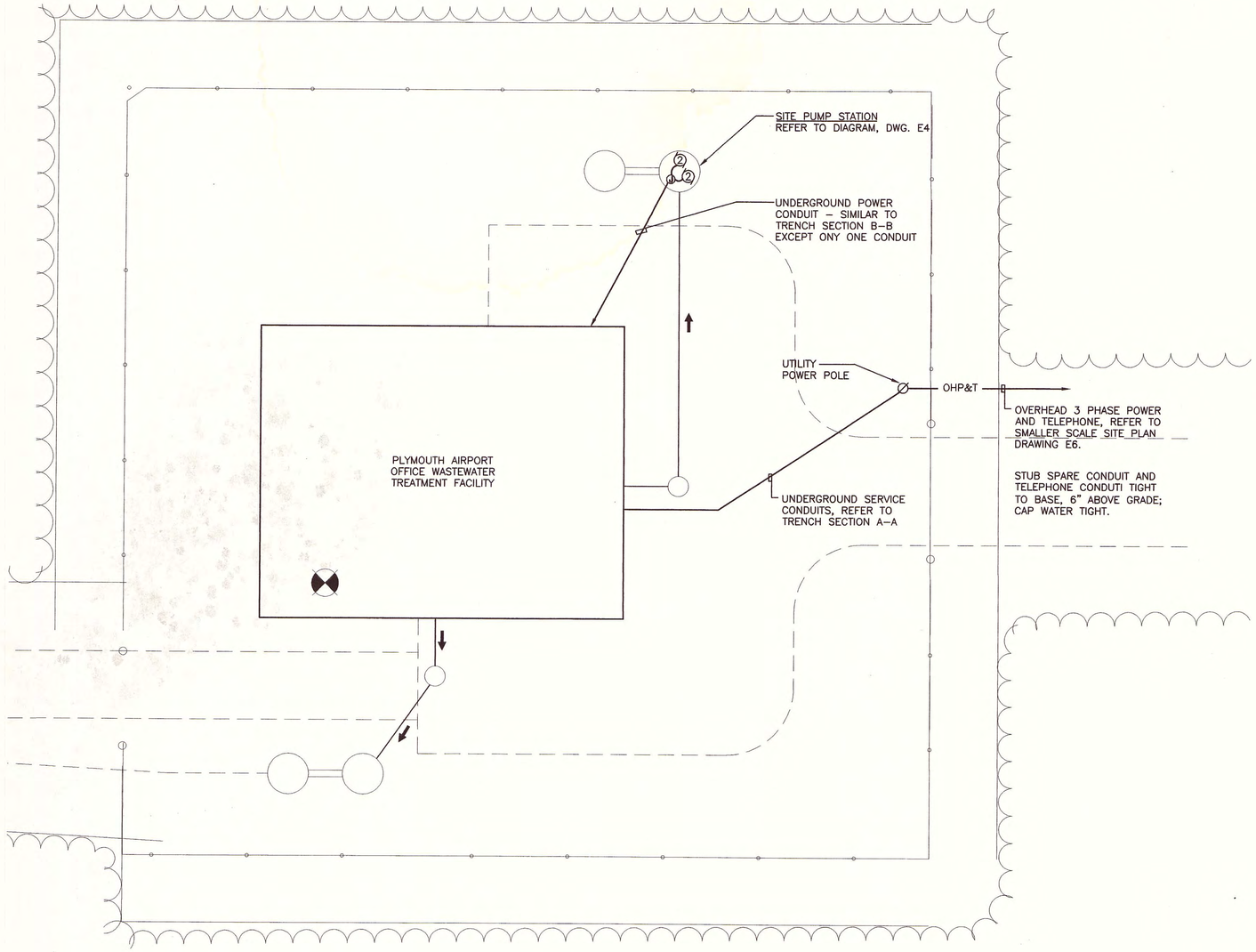
TRENCH SECTION A–A

NOT TO SCALE



TRENCH SECTION B–B

NOT TO SCALE



ELECTRICAL SITE PLAN

SCALE: 1"=10'–0"

CALLED NORTH

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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

date AUG 2 2 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

ELECTRICAL SITE PLANAND TRENCH DETAIL

DRAWN BY EL.B	DATE AUGUST 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. CPB	DRAW. NO. E1381603
SHEET E3	

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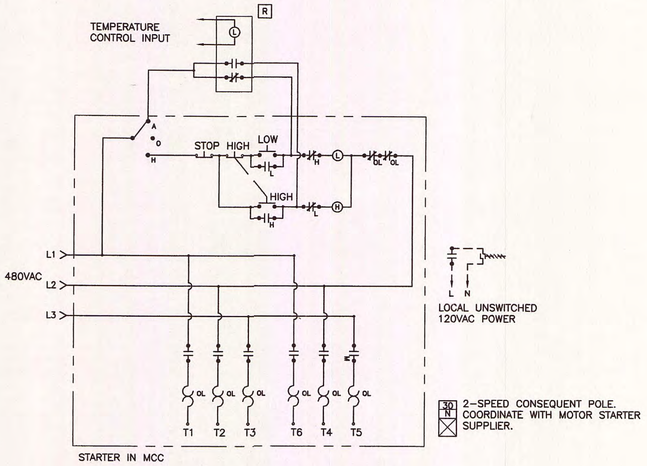
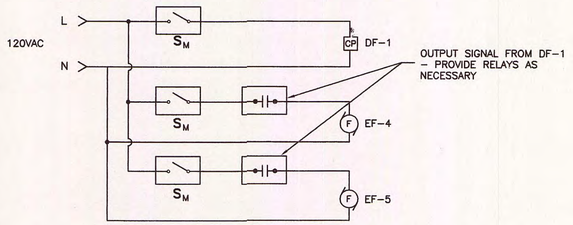


MOTOR STARTER WIRING DIAGRAM

NO SCALE

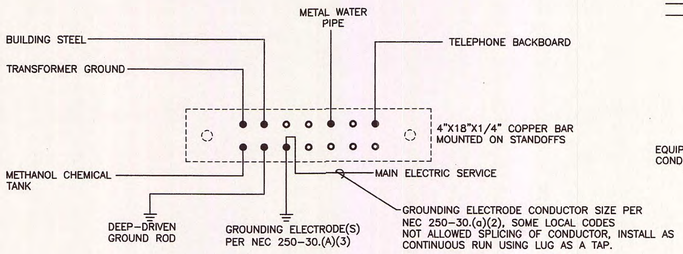
NOTES:
1. BONDING CONDUCTOR IS NOT INDICATED



DF-1/EF-4/EF-5 CONTROL WIRING DIAGRAM

NO SCALE

NOTES:
1. BONDING CONDUCTOR IS NOT INDICATED.

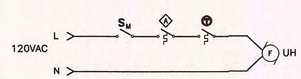


MASTER GROUND BAR

NO SCALE

NOTES:

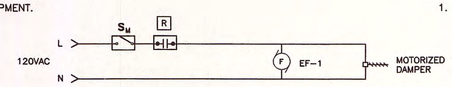
1. REFER TO ONE LINE DIAGRAM (E2) FOR RELATED INFORMATION.
2. MOUNT GROUND BAR ON WALL ABOVE ELECTRICAL EQUIPMENT.



UNIT HEATER WIRING DIAGRAM

NO SCALE

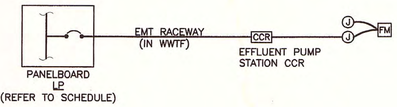
NOTES:
1. BONDING CONDUCTOR IS NOT SHOWN.
2. TYPICAL OF 8.



EXHAUST FAN WIRING DIAGRAM

NO SCALE

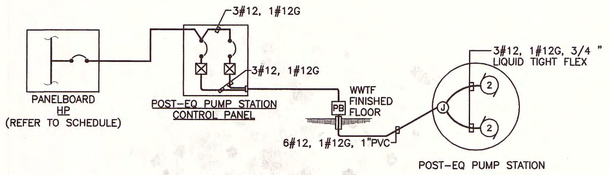
NOTES
1. BONDING CONDUCTOR IS NOT SHOWN.
2. TYPICAL FOR EF-1, EF-2, EF-3



EFFLUENT PUMP STATION POWER & SIGNAL WIRING DIAGRAM

NO SCALE

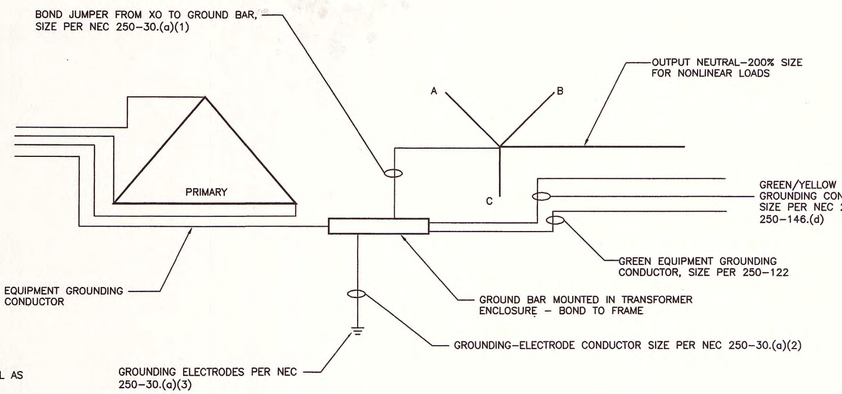
NOTES:
1. 4-20mA SIGNAL WIRING BETWEEN CHART RECORDERS AND FLOW METERS SHALL BE 16/6 TSP, SHIELDED, 1" RACEWAY
2. SIMILAR FOR SITE PUMP STATION, EXCEPT FLOW METER IS LOCATED IN THE WWTF. (REFER TO DRAWING E2)
3. SIMILAR FOR CENTRAL PUMP STATION EXCEPT NO PUMPS AND THE FLOW METER IS LOCATED IN THE WWTF. (REFER TO DRAWING E2)
4. REFER TO SPECIFICATION, DIVISION 14 FOR DESCRIPTION/COMPONANTS OF THE EFFLUENT AND SITE PUMP STATION CONTROL PANELS.



POST-EQ PUMP STATION POWER & SIGNAL WIRING DIAGRAM

NO SCALE

NOTES:
1. 4-20mA SIGNAL WIRING BETWEEN CHART RECORDERS AND FLOW METERS SHALL BE 16/6 TSP, SHIELDED, 1" RACEWAY
2. SIMILAR FOR SITE PUMP STATION, EXCEPT FLOW METER IS LOCATED IN THE WWTF. (REFER TO DRAWING E2)
3. SIMILAR FOR CENTRAL PUMP STATION EXCEPT NO PUMPS AND THE FLOW METER IS LOCATED IN THE WWTF. (REFER TO DRAWING E2)
4. REFER TO SPECIFICATION, DIVISION 14 FOR DESCRIPTION/COMPONANTS OF THE EFFLUENT AND SITE PUMP STATION CONTROL PANELS.

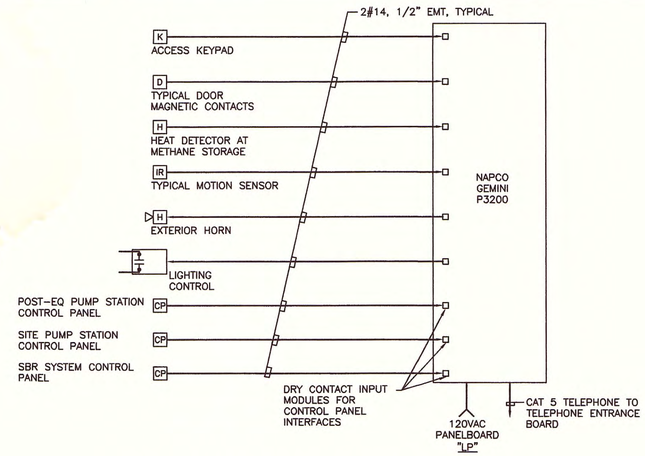


TRANSFORMER WIRING DIAGRAM FOR STANDARD DELTA-WYE SYSTEM

NO SCALE

NOTES:

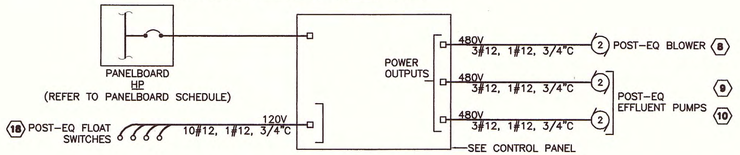
1. REFER TO ONE LINE DIAGRAM (E2) FOR RELATED INFORMATION.



SECURITY SYSTEM WIRING DIAGRAM

NO SCALE

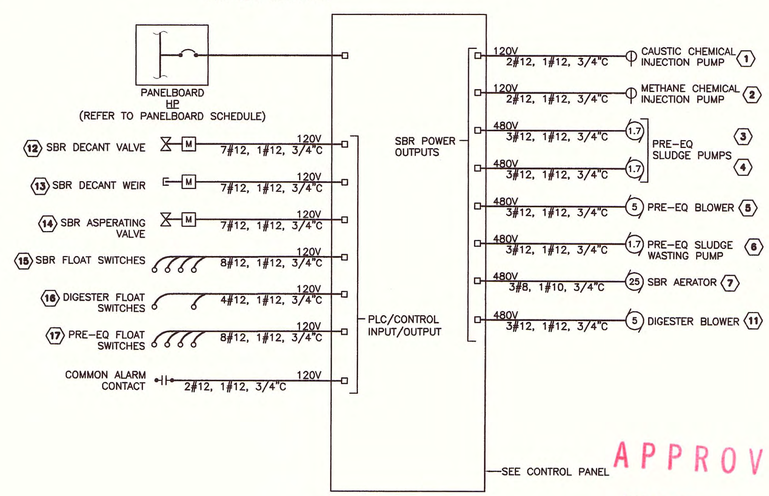
NOTES:
1. SYSTEM DIGITAL COMMUNICATOR SHALL BE PROGRAMMED TO COMMUNICATE UNAUTHORIZED ACCESS, EXCESS HEAT, AND PROCESS CONTROL PANELS AS SEPARATE AND DISTINCT SIGNALS OF ALARM.
2. PROVIDE A MINIMUM OF 4 SPARE INPUTS.



CONTROL PANEL WIRING DIAGRAM

NO SCALE

NOTES:
1. REFER TO POWER & SIGNAL FLOOR PLAN, DRAWING E2, FOR EQUIPMENT LOCATIONS.



SBR CONTROL PANEL WIRING DIAGRAM

NO SCALE

NOTES:
1. REFER TO POWER & SIGNAL FLOOR PLAN, DRAWING E2, FOR EQUIPMENT LOCATIONS.

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MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
AUG 8 2001

NO.	DATE	REVISIONS	BY	CK'D

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PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

ELECTRICAL DETAILS

DRAWN BY	DATE
ELB	AUGUST 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
-	-

SHEET E4

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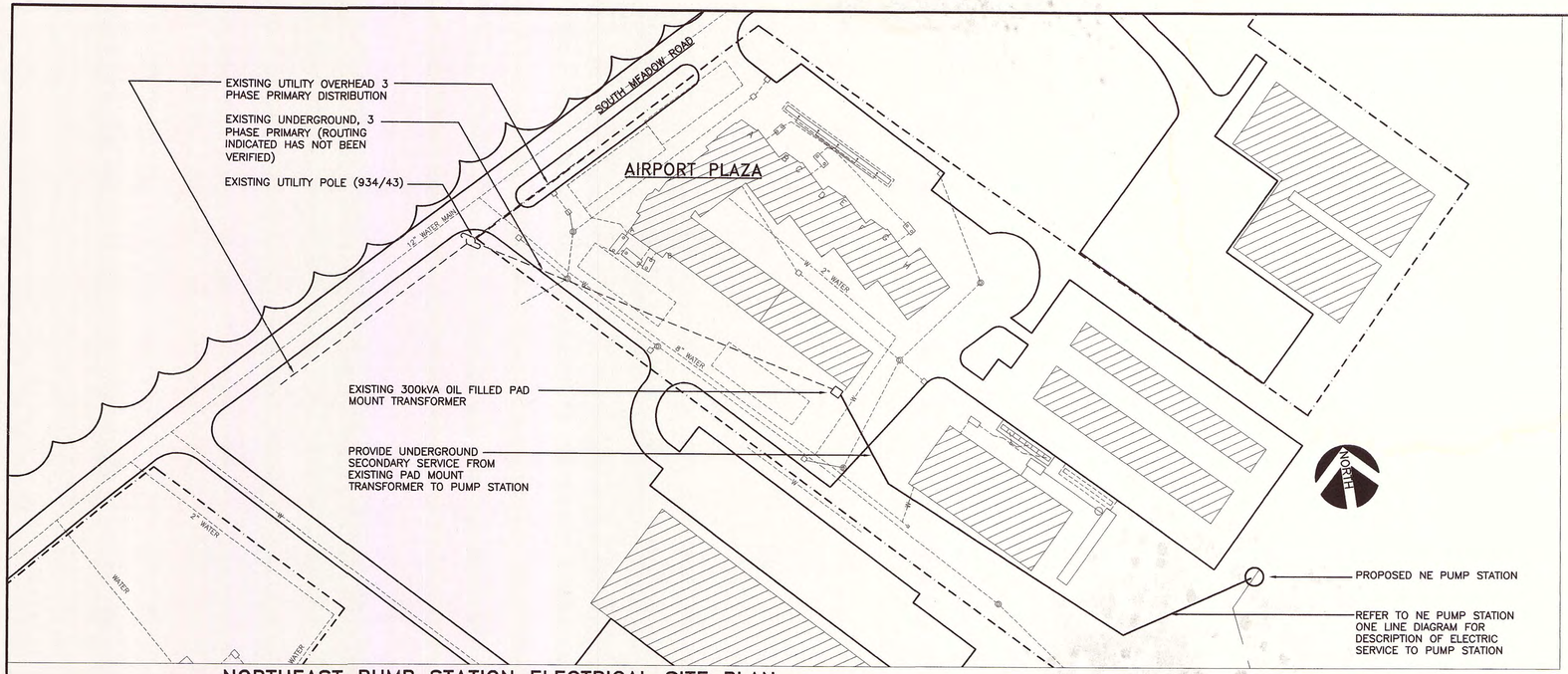
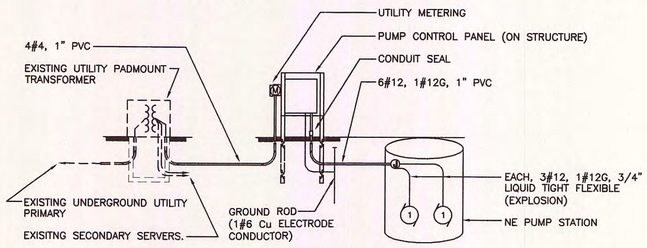


NORTHEAST PUMP STATION ELECTRICAL SITE PLAN

SCALE: 1"=60'-0"

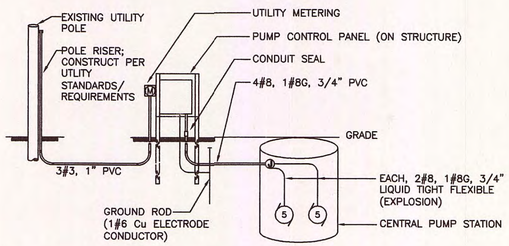


ONE LINE DIAGRAM – NORTHEST PUMP STATION

NO SCALE

NOTES:

1. CONTRACTOR SHALL MAKE FINAL CONNECTIONS AT PUMP STATION AND AT PUMPS.
2. WIRING WITHIN THE MANHOLE SHALL UTILIZE CLASS I, DIVISION 2 MEANS AND METHODS DUE TO POSSIBLE METHANE ATMOSPHERE.
3. PROVIDE SLIP JOINTS WHERE CONDUITS RISE ABOVE GRADE.
4. 120/208V, 3ø, 4W, 60A SERVICE TO PUMP STATION.



ONE LINE DIAGRAM – CENTRAL PUMP STATION

NO SCALE

NOTES:

1. CONTRACTOR SHALL MAKE FINAL CONNECTIONS AT PUMP STATION AND AT PUMPS.
2. WIRING WITHIN THE MANHOLE SHALL UTILIZE CLASS I, DIVISION 2 MEANS AND METHODS DUE TO POSSIBLE METHANE ATMOSPHERE.
3. PROVIDE SLIP JOINTS WHERE DONDUITS RISE ABOVE GRADE.
4. 120/240V, 1ø, 3W, 100A SERVICE TO PUMP STATION.
5. COORDINATE RISER WITH THE EXISTING RISER(S) ON THE POLE.

PUMP STATION ELECTRICAL GENERAL NOTES:

1. THESE NOTES APPLY TO BOTH CENTRAL AND NE PUMP STATION ELECTRICAL CONSTRUCTION.
2. ELECTRIC UTILITY SERVING THIS PROJECT IS NSTAR. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION DETAILS, METERING, TRANSFORMERS AND CONNECTIONS TO UTILITY PRIMARY WITH UTILITY ENGINEER, ON SITE, PRIOR TO COMMENCING ANY WORK.
3. UTILITY SHALL PERFORM FINAL CONNECTIONS TO TRANSFORMERS. UNDERGROUND PRIMARY CONSTRUCTION AND SECONDARY POLE RISER CONSTRUCTION SHALL BE AS PER UTILITY REQUIREMENTS AND STANDARDS; COORDINATE WITH UTILITY ENGINEER ON SITE, PRIOR TO COMMENCING ANY WORK.
4. CONTRACTOR SHALL CONSULT WITH DIG-SAFE AND DETERMINE ROUTING OF ALL EXISTING UNDERGROUND SERVICES THAT CROSS OR ARE IN GENERAL AREA OF ANY UNDERGROUND CONSTRUCTION INDICATED AS PART OF THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING UNDERGROUND SERVICES IN AREA OF CONSTRUCTION, IN THEIR PRESENT CONDITION.
5. ANY AND ALL SURFACES AFFECTED BY THE UNDERGROUND CONSTRUCTION SHALL BE PATCHED AND REPAIRED TO MATCH THE SURROUNDING SURFACES, MATCHING EXISTING MATERIALS AND METHODS (AS A MINIMUM).
6. REFER TO TRENCHING DETAILS, DWG E3.

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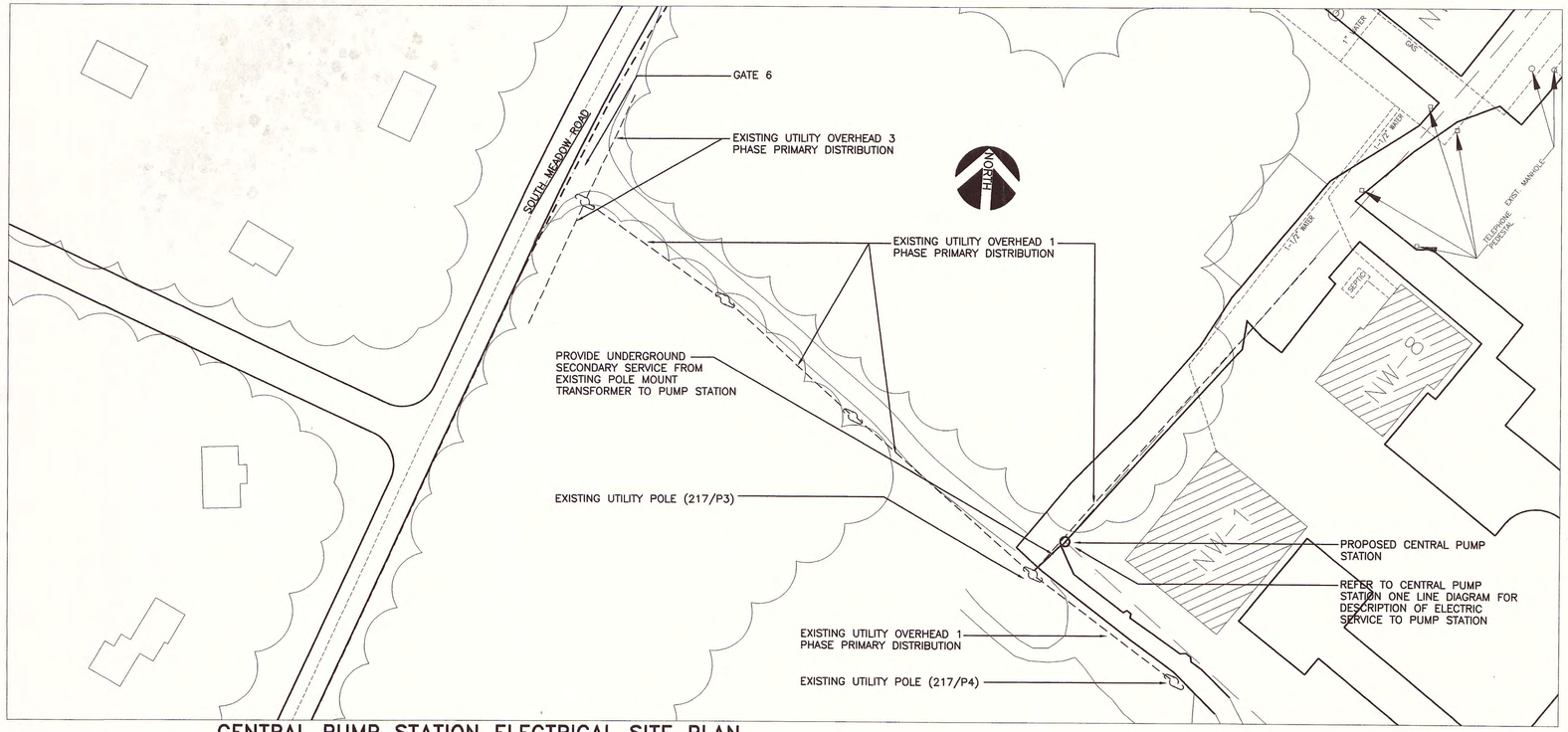
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

date NOV 22 2001



CENTRAL PUMP STATION ELECTRICAL SITE PLAN

SCALE: 1"=60'-0"

NO.	DATE	REVISIONS	BY	CK'D

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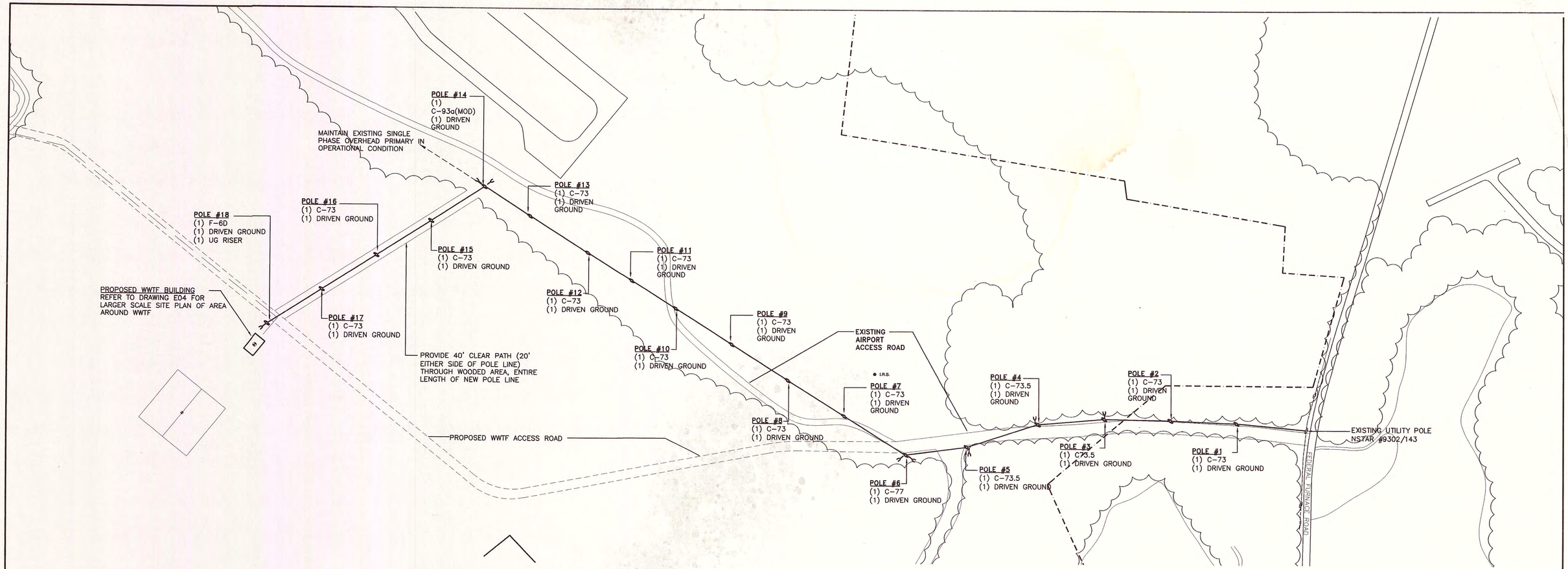
PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

PUMP STATION POWER SITE PLANS & DETAILS

DRAWN BY ELB	DATE AUGUST 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. –	DRAW. NO. –
SHEET E5	



POLE LINE SITE PLAN

SCALE: 1"=150'

CALLED NORTH

LEGEND

- UTILITY POLE
- GUY/ANCHOR ASSEMBLY

OVERHEAD SERVICE CONSTRUCTION GENERAL NOTES:

1. ELECTRIC UTILITY SERVING THIS PROJECT IS NSTAR. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION DETAILS, METERING, TRANSFORMERS AND CONNECTIONS TO UTILITY PRIMARY WITH UTILITY ENGINEER, ON SITE, PRIOR TO BEGINNING ANY WORK.

2. UTILITY SHALL PROVIDE ALL NECESSARY FRAMING MODIFICATIONS TO THEIR EXISTING POLE, ALL NECESSARY FUSING, CUTOUTS AND CONDUCTORS FROM THEIR POLE TO POLE 1. UTILITY SHALL MAKE FINAL CONNECTIONS TO BOTH SIDES OF THEIR CUTOUTS.

3. PRIMARY VOLTAGE SHALL BE 25kV, PHASE TO PHASE. MEANS AND METHODS SHALL BE SUCH THAT OVERHEAD POLE LINE CONSTRUCTION SHALL BE RATED 34.5kV, PHASE TO PHASE.

4. EXISTING OVERHEAD SINGLE PHASE PRIMARY SHALL BE CONVERTED TO 3 PHASE CONSTRUCTION ON POLES 1 THROUGH 14; EXISTING 40' CLASS C POLES SHALL BE RE-USED. POLE 14 SHALL BE REPLACED WITH A 45' CLASS C POLE.

5. UTILITY POLES 15 THROUGH 18 ARE NEW OVERHEAD LINE CONSTRUCTION. THESE POLES SHALL BE 45' CLASS C.

6. FUSED CUT OUTS AT POLE 14 FOR SINGLE PHASE OVERHEAD LINE SHALL BE _____.

7. FUSED CUT OUTS AT PRIMARY SIDE OF TRANSFORMER BANK SHALL BE _____.

8. PROVIDE CLEAR PATH FOR NEW POLE LINE THROUGH WOODS AS INDICATED ON SITE PLAN. PROVIDE CLEARING AS NECESSARY TO ACCOMMODATE 3 PHASE LINE UPGRADE.

9. CONTRACTOR SHALL COORDINATE WITH LOCAL TELEPHONE UTILITY TO PROVIDE TELEPHONE SERVICE ALONG THE OVERHEAD POLE LINE TO THE WASTE WATER TREATMENT PLANT (INTO THE BUILDING).

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

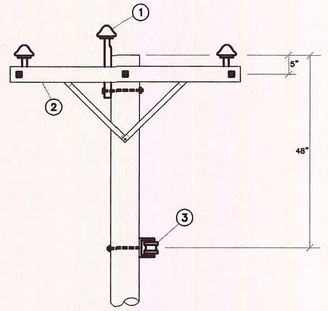
NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT
AND COLLECTION SYSTEM

POLE LINE CONVERSION/EXTENSION
SITE PLAN & NOTES

DRAWN BY ELB	DATE AUGUST 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. –	DRAW. NO. –
SHEET E6	



NOT TO SCALE

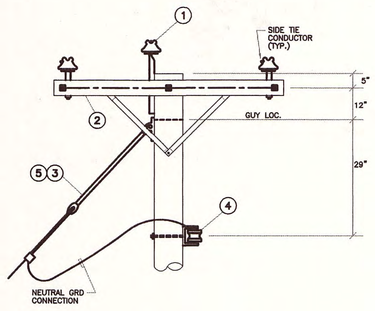
ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	INSUL. & POLE TOP PIN	PTP	1	8			
2	X-ARM ASSEMBLY	S-6	1	9			
3	CLEVIS & SPOOL INSULATOR	CLEVIS-NB	1	10			
4				11			
5				12			
6				13			
7				14			

DISTRIBUTION STANDARDS

FLAT CONSTRUCTION STRAIGHT LINE

APPROVED:
DATE:

C-73



NOT TO SCALE

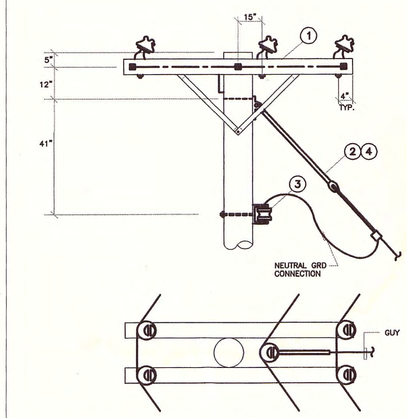
ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	INSUL. & POLE TOP PIN	PTP	1	8			
2	X-ARM ASSEMBLY	S-6	1	9			
3	GUY ASSEMBLY, 7/16"	GUY7-16	1	10			
4	CLEVIS & SPOOL INSUL.	CLEVIS-N.B.	1	11			
5	ANCHOR, 3/4"9x10"HELIX	ANCHOR	1	12			
6				13			
7				14			

DISTRIBUTION STANDARDS

FLAT CONSTRUCTION DEVIATION ANGLE 2°-10°

APPROVED:
DATE:

C-73.5



NOT TO SCALE

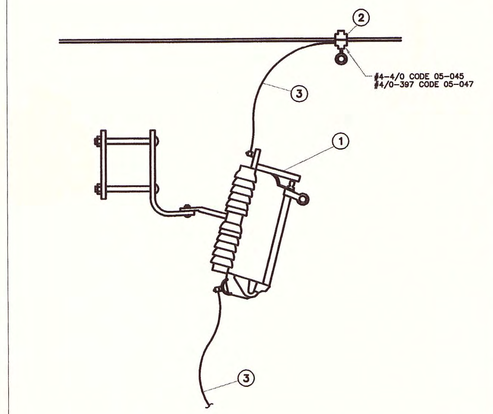
ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	X-ARM ASSEMBLY	D-8x-ARM	1	8			
2	GUY ASSEMBLY, 7/16"	GUY7-16	1	9			
3	CLEVIS & SPOOL INSUL.	CLEVIS-N.B.	1	10			
4	ANCHOR, 3/4"9x14"HELIX	ANCHOR	1	11			
5				12			
6				13			
7				14			

DISTRIBUTION STANDARDS

FLAT CONSTRUCTION DEVIATION ANGLE 20°-45°

APPROVED:
DATE:

C-77



NOT TO SCALE

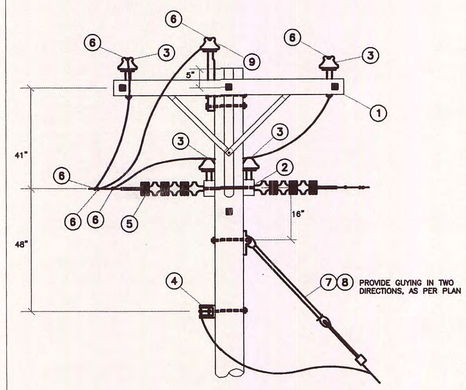
ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	CUTOUT, 27KV, 100A, W/ BRKT	03-133	1	8			
2	CLAMP, HOT LINE	C_HOT	1	9			
3	#2 CU STR BARE	24-032	8'	10			
4				11			
5				12			
6				13			
7				14			

DISTRIBUTION STANDARDS

CUTOUT INSTALLATION

APPROVED:
DATE:

CUTOUT



NOT TO SCALE

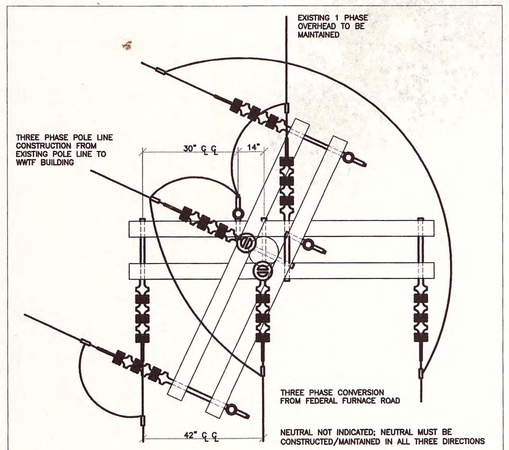
ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	SINGLE X-ARM ASSEMBLY	S-6X-ARM	1	8	ANCHOR	ANCHOR	1
2	DOUBLE X-ARM ASSEMBLY	D-6X-ARM	1	9	INSUL. & POLE TOP PIN	PTP	1
3	34.5KV INSULATOR AND PIN	INS.-PIN	4	10			
4	CLEVIS & SPOOL INSULATOR	CLEVIS-NB	2	11			
5	EPOXY DEAD END ASSEMBLY	EPOXY-D.E.	3	12			
6	PHASE CONNECTOR	PH CONN.	6	13			
7	GUY ASSEMBLY 5/16"	GUYS-16	1	14			

DISTRIBUTION STANDARDS

3ø TAP

APPROVED:
DATE:

C-93 (MOD) SHT. 1 OF 3



NOT TO SCALE

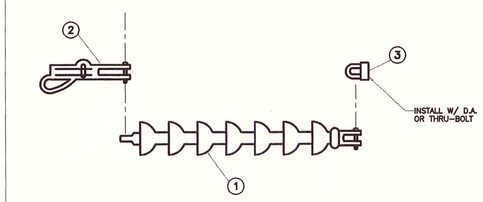
ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1				8			
2				9			
3				10			
4				11			
5				12			
6				13			
7				14			

DISTRIBUTION STANDARDS

3ø FUSED TAP

APPROVED:
DATE:

C-93A (MOD) SHT. 2 OF 2



CLAMPS TO BE DEADEND OR ANGLE, AS REQ'D

D.E. CLAMP, 1/0

ANGLE CLAMP, DISTR.

NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	INSUL., EPOXY	11-041	1	8			
2	CLAMP, AL.	SEE AB.	1	9			
3	EYELET	12-093	1	10			
4				11			
5				12			
6				13			
7				14			

DISTRIBUTION STANDARDS

EPOXY DEADEND ASSEMBLY

APPROVED:
DATE:

EPOXY. D.E.

APPROVED
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
date AUG 22 2001

NO.	DATE	REVISIONS	BY	CK'D

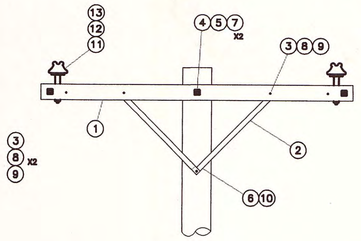
DuBois & King inc.
engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

POLE LINE CONVERSION/EXTENSION DETAILS

DRAWN BY	DATE
ELB	AUGUST 2001
CHECKED BY	PROJ. NO.
	N13816F5
PROJ. ENG.	DRAW. NO.
–	–

SHEET E7



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	X-ARM, 6-PIN	02-021	1	8	WASHER, 3/8 RD	04-219	6
2	BRACE, WOOD X-ARM (PR)	02-054	1	9	WASHER, 3/8 LOCK	04-208	4
3	BOLT, 3/8 X 4 1/2 CARRIAGE	04-015	4	10	WASHER, 1/2 LOCK	04-209	1
4	BOLT, 5/8 X 14 MACH.	04-099	1	11	INSUL., 23 KV PIN	11-014	2
5	WASHER, 5/8 LOCK	04-210	1	12	PIN, 6" X-ARM	12-206	2
6	SCREW, LAG 1/2 X 4	04-201	1	13	TIE WIRE, #4 AL	23-098	15'
7	WASHER, 2 1/4 SQ.	04-225	2	14			

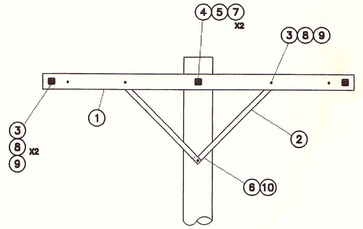
DISTRIBUTION STANDARDS

SINGLE X-ARM ASSEMBLY (WITH INSULATORS)

APPROVED:

DATE:

S-6



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	X-ARM, 6-PIN	02-021	1	8	WASHER, 3/8 RD	04-219	6
2	BRACE, WOOD X-ARM (PR)	02-054	1	9	WASHER, 3/8 LOCK	04-208	4
3	BOLT, 3/8 X 4 1/2 CARRIAGE	04-015	4	10	WASHER, 1/2 LOCK	04-209	1
4	BOLT, 5/8 X 14 MACH.	04-099	1	11			
5	WASHER, 5/8 LOCK	04-210	1	12			
6	SCREW, LAG 1/2 X 4	04-201	1	13			
7	WASHER, 2 1/4 SQ.	04-225	2	14			

DISTRIBUTION STANDARDS

SINGLE X-ARM ASSEMBLY

APPROVED:

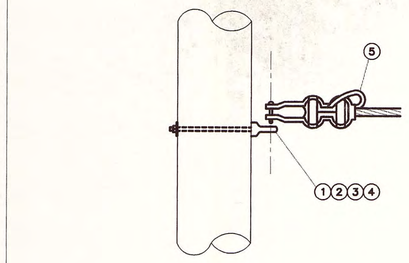
DATE:

S-6X-ARM

APPROVED

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

date JUL 2 2 2005



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	BOLT, 5/8 X 10 MACH.	04-097	1	8			
2	EYELET	12-093	1	9			
3	WASHER, 5/8 LOCK	04-210	1	10			
4	WASHER, 5/8 X 2 1/4 SQ.	04-225	1	11			
5	STRAIN CLAMP	05-086	1	12			
6				13			
7				14			

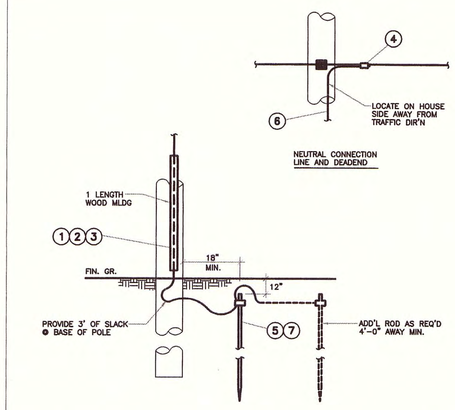
DISTRIBUTION STANDARDS

NEUTRAL DEADEND

APPROVED:

DATE:

D.E.-NEUT.



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	#6 CU SOL. (SCRAP)	17-007	50'	8			
2	WOOD MOULDING	01-090	1	9			
3	MOULD'G STAPLES 3"	01-161	4	10			
4	CONN'R #6 CU - #1/0 AAAC	07-120	1	11			
5	CLAMP GROUND ROD	01-050	1	12			
6	COPPER STAPLES, 2"	01-160	13	13			
7	ROD, 5/8 X 8' COPPERWELD	01-130	1	14			

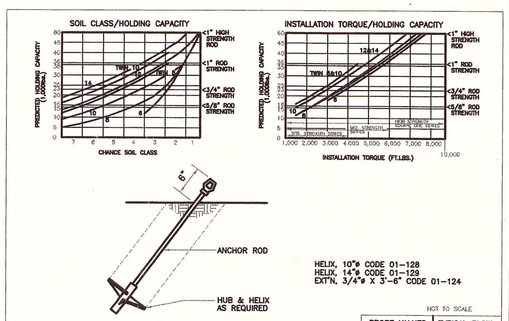
DISTRIBUTION STANDARDS

POLE GROUND

APPROVED:

DATE:

DRIVEN-GRND



NOT TO SCALE

CLASS	COMMON SOIL-TYPE DESCRIPTION	GEOLOGICAL SOIL CLASSIFICATION	PROBE VALUES IN-LBS. (NM)	TYPICAL BLOW COUNT 'N' PER ASTM-D1586
0	SOUND HARD ROCK, UNWEATHERED	GRANITE, BASALT, MASSIVE LIMESTONE	N.A.	N.A. ROD=50 1/2
1	VERY DENSE AND/OR CEMENTED SANDS; COURSE GRAVEL AND COBBLES	CALICHE, (NITRATE-BEARING GRAVEL/ROCK)	750-1800 (80-200)	60-100+
2	DENSE FINE SAND; VERY HARD SILTS AND CLAYS (MAY BE PRELOADED)	BASAL TILL; BOULDER CLAY; CALICHE; WEATHERED LAMINATED ROCK	600-750 (75-85)	45-60
3	DENSE CLAYS; SANDS AND GRAVEL; HARD SILTS AND CLAYS	GLACIAL TILL; WEATHERED SHALES, SCHIST, GNEISS AND SILTSTONE	500-600 (65-75)	35-50
4	MEDIUM DENSE SANDY GRAVEL; VERY STIFF TO HARD SILTS AND CLAYS	GLACIAL TILL; HARDPAN; MARLS	450-500 (52-65)	24-40
5	MEDIUM DENSE COURSE SAND AND SANDY GRAVELS; STIFF TO VERY STIFF SILTS AND CLAYS	SAPROLITES, RESIDUAL SOILS	300-400 (38-52)	14-25
6	LOOSE TO MEDIUM DENSE FINE TO COURSE SAND; FIRM TO STIFF CLAYS AND SILTS	DENSE HYDRAULIC FILL; COMPACTED FILL; RESIDUAL SOIL	200-300 (26-39)	7-14
**7	LOOSE FINE SAND; ALLUVIAL LOCSS; SOFT-FIRM CLAYS; MIXED CLAYS; FILL	FLOOD PLAIN SOILS; LAKE CLAYS; ADOBE; GUMBO, FILL	100-200 (13-26)	4-8
**8	PEAT, ORGANIC SILTS; INUNDATED SILTS, FLY ASH	MISCELLANEOUS FILL, SWAMP MARSH	LESS THAN 100 (0-13)	0-5

CLASS 1 SOILS ARE DIFFICULT TO PROBE CONSISTENTLY AND THE ASTM BLOW COUNT MAY BE OF QUESTIONABLE VALUE.
** IT IS ADVISABLE TO INSTALL ANCHORS DEEP ENOUGH, BY THE USE OF EXTENSIONS, TO PENETRATE A CLASS 5 OR 6, UNDERLYING THE CLASS 7 OR 8 SOILS.

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	ROD W/ EYE, 3/4"ø X 7'	01-123	1	6			
2	HELIX	UL-ANC	1	7			
3				8			
4				9			
5				10			

DISTRIBUTION STANDARDS

POWER DRIVEN SCREW ANCHOR

APPROVED:

DATE:

ANCHOR

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.

engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT

WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

POLE LINE CONVERSION/EXTENSION DETAILS

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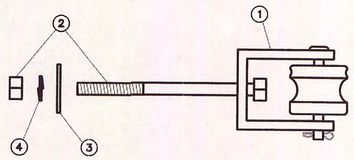
SHEET E8	



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	CLEVIS W/ INSUL. SPOOL	12-070	1	8			
2	BOLT 5/8 X 10 MACH.	04-097	1	9			
3	WASHER 2 1/4 SQ.	04-225	1	10			
4	WASHER 5/8 LOCK	04-210	1	11			
5	TIE WIRE #4 AL	23-098	5	12			
6				13			
7				14			

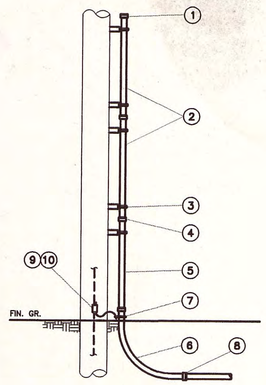
DISTRIBUTION STANDARDS

CLEVIS & SPLOOL INSUL.

APPROVED:

DATE:

CLEVIS-N.B.



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	LA. TERMINATOR & RISER, 3#	UG-RISER	1	8	RACEWAY CONNECTION (RGS TO PVC)	–	1
2	SCHED. 40 PVC	–	AS REQ'D	9	POLE GROUND	DRIVEN-GRND	1
3	STAND OFF BRACKET	–	5	10	GROUND ELECTRODE CONDUCTOR (#2 CU)	–	1
4	RACEWAY CONNECTION	–	AS REQ'D	11			
5	RIGID GALVANIZED CONDUIT	–	AS REQ'D	12			
6	RIGID GALVANIZED CONDUIT 90° SWEEP	–	1	13			
7	GROUNDING ELECTRODE CLAMP	–	1	14			

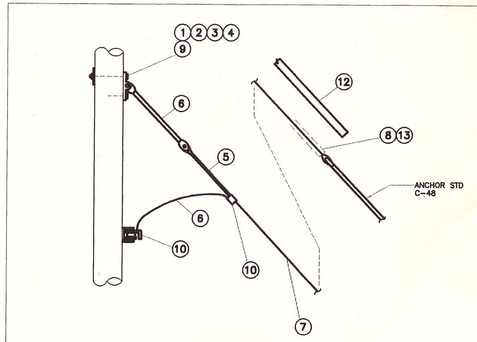
DISTRIBUTION STANDARDS

UNDERGROUND RISER

APPROVED:

DATE:

UG-RISER (MOD)



NOT TO SCALE

GUY 5-16				GUY 7-16			
ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	BOLT, 5/8 X 12 MACH.	04-098	1	1	BOLT, 3/4 X 12 MACH.	04-123	1
2	WASHER, 2 1/4 SQ.	04-225	1	2	WASHER, 3" SQ.	04-227	1
3	PLATE, GUY ATTACH'T	01-081	1	3	PLATE, GUY ATTACH'T	01-081	1
4	SCREW, LAG 5/8 X 4	04-206	1	4	SCREW, LAG 5/8 X 4	04-206	1
5	GRIP, 5/16 GUY	05-174	1	5	GRIP, 7/16 GUY	05-172	1
6	INSUL. F.G. STRAIN	11-056	1	6	INSUL. F.G. STRAIN	11-056	1
7	GUY WIRE, 5/16" H.S.	24-059	40	7	GUY WIRE, 7/16" H.S.	24-060	40
8	VICE, AUTO	05-171	1	8	CLAMP, J-BOLT	05-154	1
9	WASHER, 5/8 LOCK	04-210	1	9	WASHER, 5/8 LOCK	04-210	1
10	CONN'R, ALL PURPOSE	07-120	2	10	CONN'R, ALL PURPOSE	07-120	2
11	#6 CU SOL. (SCRAP)	17-007	10 LF	11	#6 CU SOL. (SCRAP)	17-007	10 LF
12	GUARD, PLASTIC	01-110	7	12	GUARD, PLASTIC	01-110	7
13				13	SLEEVE, SERVING	SL-SER	1

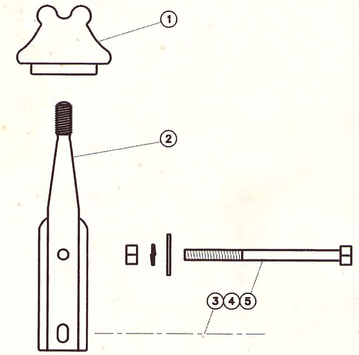
DISTRIBUTION STANDARDS

GUY ASSEMBLY

APPROVED:

DATE:

GUY



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	INSULATOR, 23 KV PIN	11-014	1	8			
2	POLE TOP PIN	12-226	1	9			
3	BOLT, 5/8 X 10 MACH	04-097	2	10			
4	WASHER, 2 1/4 SQ.	04-225	2	11			
5	WASHER, 5/8 LOCK	04-210	2	12			
6	TIE WIRE, #4 ALUM.	23-098	7'	13			
7				14			

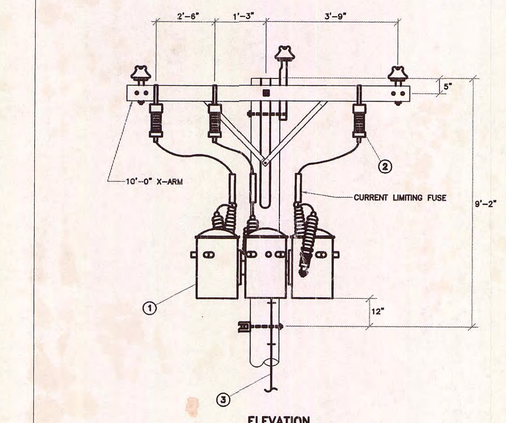
DISTRIBUTION STANDARDS

POLE TOP PIN

APPROVED:

DATE:

PTP



ELEVATION

NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	TRANSF. ASSEMBLY	45KVA	1	8			
2	CUTOUT, 27KV, 100A	CUTOUT	3	9			
3	GROUND	DRIVEN-GRND	1	10			
4				11			
5				12			
6				13			
7				14			

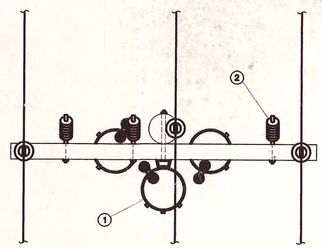
DISTRIBUTION STANDARDS

THREE PHASE TRANSFORMER BANK

APPROVED:

DATE:

F-6 SHT. 1 OF 2



PLAN

NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1				8			
2				9			
3				10			
4				11			
5				12			
6				13			
7				14			

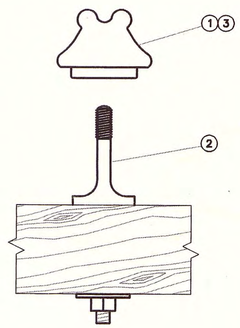
DISTRIBUTION STANDARDS

THREE PHASE TRANSFORMER BANK

APPROVED:

DATE:

F-6 SHT. 2 OF 2



NOT TO SCALE

ITEM	DESCRIPTION	C.U. No.	REQ.	ITEM	DESCRIPTION	C.U. No.	REQ.
1	INSULATOR, 34.5KV PIN	11-014	1	8			
2	PIN, 6" X-ARM	12-206	1	9			
3	TIE WIRE, #4 ALUM.	23-098	7'	10			
4				11			
5				12			
6				13			
7				14			

DISTRIBUTION STANDARDS

34.5KV INSULATOR & PIN

APPROVED:

DATE:

INS.-PIN

APPROVED

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

date

NO.	DATE	REVISIONS	BY	CK'D

DuBois & King inc.

engineering planning management development

PLYMOUTH MUNICIPAL AIRPORT
WASTE WATER TREATMENT PLANT AND COLLECTION SYSTEM

POLE LINE CONVERSION/EXTENSION DETAILS

DRAWN BY ELB	DATE AUGUST 2001
CHECKED BY	PROJ. NO. N13816F5
PROJ. ENG. –	DRAW. NO. –
SHEET E9	

I:\Projects\L13816\DWG\E13816D9.dwg Fri Aug 10 14:55:27 2001