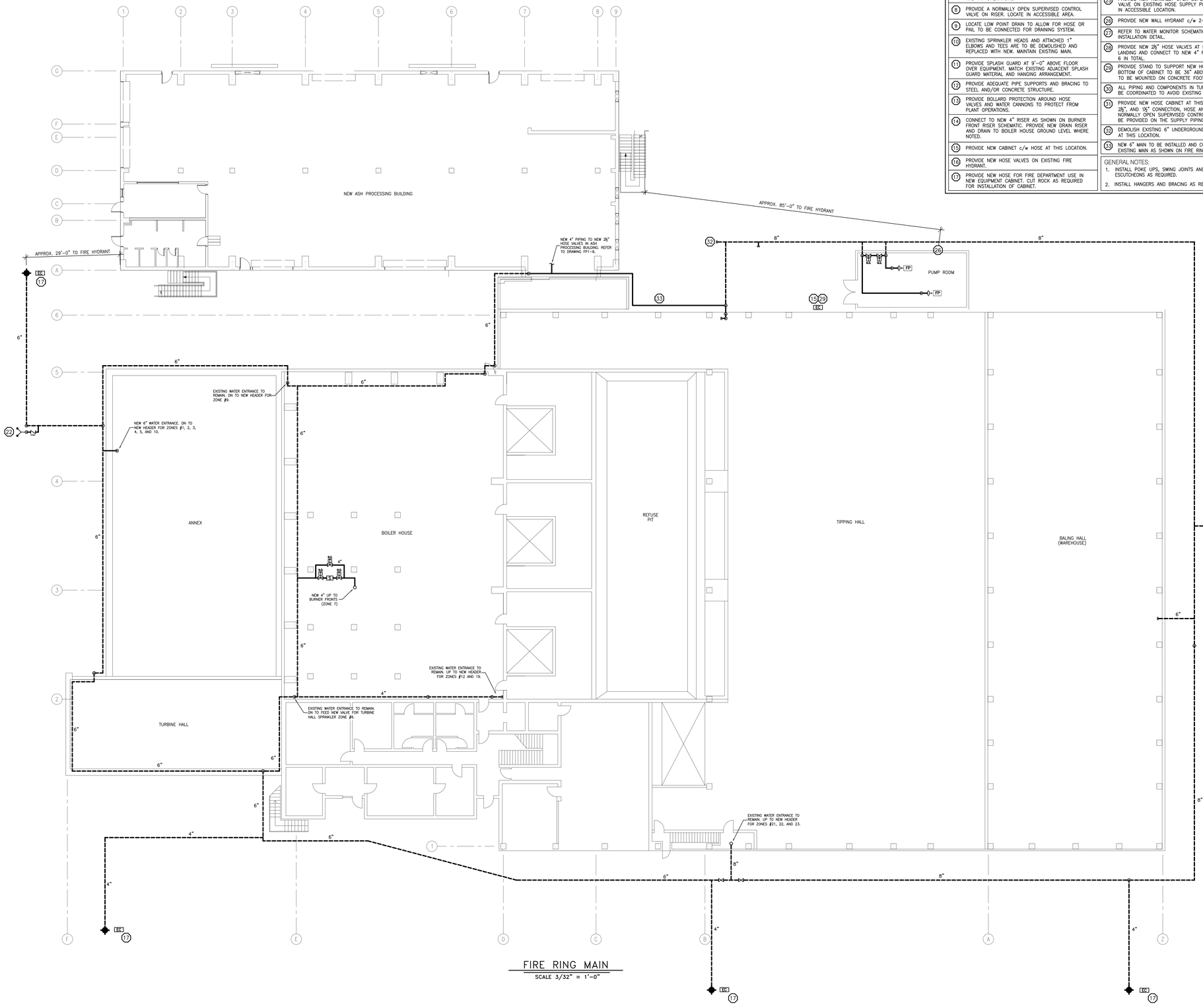


DRAWING NOTES

1. PIPE DRAIN TO EXTERIOR OR SUITABLE FLOOR DRAIN.
2. BRANCH PIPING TO FOLLOW SLOPE OF CEILING IN THIS AREA.
3. NEW VALVE ROOM IN MAINTENANCE SHOP. VALVES FOR SPRINKLER ZONE # 1, 2, 3, 4, 5, AND 10. REFER TO NEW VALVE ROOM RISER SCHEMATIC.
4. EXISTING BRANCH PIPING TO REMAIN IN THIS AREA AND MAIN TO BE REPLACED. OPEN NOZZLES TO BE REPLACED WITH NEW UPRIGHT SPRINKLERS. NEW SPRINKLER HEADS ARE TO BE LOCATED WITHIN 12" OF THE CEILING.
5. EXISTING VALVE ROOM TO BE EQUIPPED WITH NEW DOOR AND NEW CEILING. VALVES FOR SPRINKLER ZONES #21, 22, AND 23 TO BE LOCATED IN THIS ROOM.
6. PROVIDE AND INSTALL SPRINKLER HEADS DIRECTLY ABOVE WINDOWS. SPRINKLER HEADS SHALL BE COMPLETE WITH WATERSHIELD/HEAD GUARD. PROVIDE 1 SPRINKLER PER PANE OF GLASS. ALLOW FOR A MINIMUM OF 6 SPRINKLERS.
7. LOCATE MAIN TIGHT TO WALL TO AVOID OBSTRUCTIONS AND PIT OPERATIONS.
8. PROVIDE A NORMALLY OPEN SUPERVISED CONTROL VALVE ON RISER. LOCATE IN ACCESSIBLE AREA.
9. LOCATE LOW POINT DRAIN TO ALLOW FOR HOSE OR PAIL TO BE CONNECTED FOR DRAINING SYSTEM.
10. EXISTING SPRINKLER HEADS AND ATTACHED 1" ELBOWS AND TEES ARE TO BE DEMOLISHED AND REPLACED WITH NEW. MAINTAIN EXISTING MAIN.
11. PROVIDE SPLASH GUARD AT 9'-0" ABOVE FLOOR OVER EQUIPMENT. MATCH EXISTING ADJACENT SPLASH GUARD MATERIAL AND HANGING ARRANGEMENT.
12. PROVIDE ADEQUATE PIPE SUPPORTS AND BRACING TO STEEL AND/OR CONCRETE STRUCTURE.
13. PROVIDE BOLLARD PROTECTION AROUND HOSE VALVES AND WATER CANNONS TO PROTECT FROM PLANT OPERATIONS.
14. CONNECT TO NEW 4" RISER AS SHOWN ON BURNER FRONT RISER SCHEMATIC. PROVIDE NEW DRAIN RISER AND DRAIN TO BOILER HOUSE GROUND LEVEL WHERE NOTED.
15. PROVIDE NEW CABINET c/w HOSE AT THIS LOCATION.
16. PROVIDE NEW HOSE VALVES ON EXISTING FIRE HYDRANT.
17. PROVIDE NEW HOSE FOR FIRE DEPARTMENT USE IN NEW EQUIPMENT CABINET. CUT ROCK AS REQUIRED FOR INSTALLATION OF CABINET.
18. PROVIDE WATERSHIELD/HEAD GUARD ON SPRINKLER HEADS.
19. DEMOLISH EXISTING DELUGE VALVE HEADER AND PROVIDE NEW CONTROL VALVE AND FLOW SWITCH ASSEMBLY FOR ZONE #9. REFER TO SECOND FLOOR STORAGE RISER SCHEMATIC.
20. PIPE ALL SYSTEM DRAINS FOR THE VALVE HEADERS IN THE MAINTENANCE SHOP TO THIS LOCATION.
21. PROVIDE STEEL SUPPORT BETWEEN EXISTING COLUMNS FOR SUPPORTING NEW BRANCH PIPING.
22. PROVIDE NEW FIRE DEPARTMENT CONNECTION AT THIS LOCATION. FIRE DEPARTMENT CONNECTION AND PIPING TO BE SECURED TO ADJACENT COLUMN. LOCATE BETWEEN 36" AND 48" ABOVE GRADE.
23. PROVIDE NEW BULKHEAD TO CONCEAL SPRINKLER SYSTEM MAIN. PAINT COLOUR TO MATCH ADJACENT WALLS.
24. PROVIDE SPRINKLER PROTECTION IN THIS ROOM. CONNECT TO MAINTENANCE SHOP SPRINKLER ZONE.
25. PROVIDE NEW NORMALLY OPEN SUPERVISED CONTROL VALVE ON EXISTING HOSE SUPPLY PIPING. VALVE TO BE IN ACCESSIBLE LOCATION.
26. PROVIDE NEW WALL HYDRANT c/w 2-2½" VALVES.
27. REFER TO WATER MONITOR SCHEMATIC FOR INSTALLATION DETAIL.
28. PROVIDE NEW 2½" HOSE VALVES AT EACH STAIR LANDING AND CONNECT TO NEW 4" RISER. ALLOW FOR 6 IN TOTAL.
29. PROVIDE STAND TO SUPPORT NEW HOSE CABINET. BOTTOM OF CABINET TO BE 36" ABOVE GRADE. STAND TO BE MOUNTED ON CONCRETE FOOTINGS.
30. ALL PIPING AND COMPONENTS IN TURBINE HALL SHALL BE COORDINATED TO AVOID EXISTING OVERHEAD CRANE.
31. PROVIDE NEW HOSE CABINET AT THIS LOCATION, c/w 2½", AND 1½" CONNECTION, HOSE AND NOZZLE. A NORMALLY OPEN SUPERVISED CONTROL VALVE IS TO BE PROVIDED ON THE SUPPLY PIPING.
32. DEMOLISH EXISTING 6" UNDERGROUND PIPING AND CAP AT THIS LOCATION.
33. NEW 6" MAIN TO BE INSTALLED AND CONNECTED TO EXISTING MAIN AS SHOWN ON FIRE RING MAIN DRAWING.

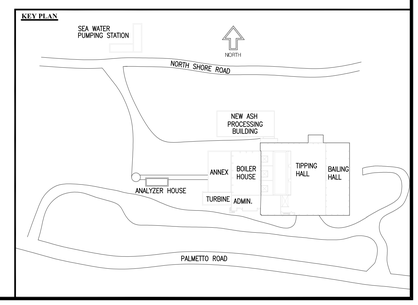
GENERAL NOTES:

1. INSTALL POKE UPS, SWING JOINTS AND DEEP CUP ESCUTCHEONS AS REQUIRED.
2. INSTALL HANGERS AND BRACING AS REQUIRED.

LEGEND

- STANDARD RESPONSE UPRIGHT SPRINKLER, 200°F, ½" ORIFICE, K = 8.0
- STANDARD RESPONSE UPRIGHT SPRINKLER, 286°F, ½" ORIFICE, K = 8.0
- QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 155°F, ½" ORIFICE, K = 5.6
- QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 286°F, ½" ORIFICE, K = 5.6
- QUICK RESPONSE DRY PENDENT SPRINKLER, 200°F, K = 5.6
- HIGH VELOCITY OPEN SPRAY NOZZLE, 3/8" ORIFICE, K = 1.6
- SPRINKLER HEAD GUARD
- PIPE DOWN
- RISER UP
- TEE DOWN
- PREACTION VALVE
- DELUGE VALVE
- CONTROL VALVE
- N.C. NORMALLY CLOSED CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
- N.O. NORMALLY OPEN CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
- OS&Y GATE VALVE
- F FLOW SWITCH
- FLUSHING/CAPPED CONNECTION
- AUXILIARY DRAIN VALVE
- CHECK VALVE
- AS ALARM SWITCH
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- REMOTE INSPECTOR'S TEST CONNECTION
- HR HOSE REEL c/w 1-½" HOSE CONNECTION AND HOSE
- PAP PREACTION RELEASING PANEL (BY OTHERS)
- WM WATER MONITOR c/w PROTECTIVE COVER
- FC FIRE HYDRANT EQUIPMENT CABINET
- FP FIRE PUMP
- S STRAINER
- AC AIR COMPRESSOR
- AMD AIR MAINTENANCE DEVICE
- LAPS LOW AIR PRESSURE SWITCH
- PAP PREACTION PANEL
- FM FLOW METER
- RV RELIEF VALVE
- FPC FIRE PUMP CONTROLLER
- HC INTERIOR HOSE CABINET c/w 1½" HOSE AND 2½" HOSE VALVE
- INSPECTOR'S TEST CONNECTION
- 2½" HOSE VALVE

KEY PLAN



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REGISTERED PROFESSIONAL ENGINEER
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Ian C. MacDonald
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DATE
Province du Nouveau-Brunswick
INGÉNIEUR IMMATRICULÉ

THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

CONSULTANT

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Fire Protection Engineers
Building Code Consultants
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ISSUE / REVISION

No.		Date:
6	-	-
5	ISSUED FOR TENDER	10/01/15
4	ISSUED FOR PERMIT APPLICATION	09/05/11
3	ISSUED FOR FINAL REVIEW	08/02/29
2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: — Date: -

DESIGN
Prepared By: *AM/LD* — Date: -
Checked By: *AM* — Date: -

DRAWING
Prepared By: *LD* — Date: -
Checked By: *IM* — Date: -

Approved By: -

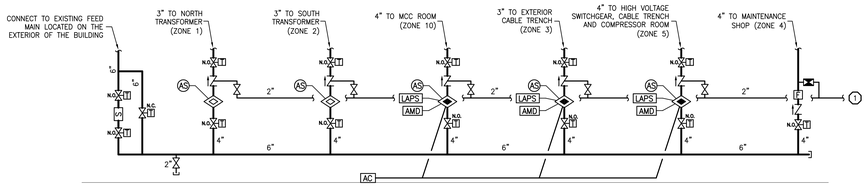
Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
SPRINKLER SYSTEM FIRE PROTECTION RING MAIN

Revision: 5

Sheet Number: **FP1-1**



NEW VALVE ROOM – RISER SCHEMATIC

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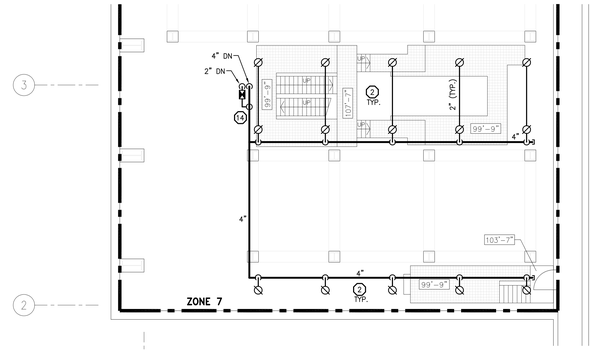
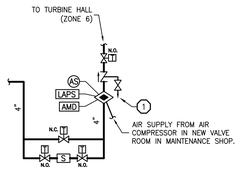


BURNER FRONT PLAN AT ELEV. 107'–7"

SCALE 1/8" = 1'-0"

HAZARD TABLE

LOCATION	OCCUPANCY	DESIGN CRITERIA
ZONE 1 (PREACTION)	NORTH TRANSFORMER	0.25 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
ZONE 2 (PREACTION)	SOUTH TRANSFORMER	0.25 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
ZONE 3 (PREACTION)	EXTERIOR CABLE TRENCH	0.30 USgpm/ft² OVER THE MOST REMOTE 100 LINEAL FEET OF THE TRENCH 500 USgpm HOSE DEMAND
ZONE 4 (WET)	ORDINARY HAZARD GROUP 2 (MAINTENANCE SHOP)	0.20 USgpm/ft² OVER A MINIMUM OF 1500 ft² 500 USgpm HOSE DEMAND
ZONE 5 (PREACTION)	HIGH VOLTAGE SWITCHGEAR	0.30 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
	ORDINARY HAZARD GROUP 2 (COMPRESSOR ROOM)	0.20 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
	INTERIOR CABLE TRENCH	0.30 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
ZONE 6 (PREACTION)	TURBINE HALL	0.30 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
ZONE 7 (WET)	BURNER FRONTS	0.25 USgpm/ft² OVER THE PROTECTED AREA 500 USgpm HOSE DEMAND
ZONE 9 (WET)	ORDINARY HAZARD GROUP 2 (SECOND FLOOR STORAGE ROOM)	0.20 USgpm/ft² OVER A MINIMUM OF 1500 ft² 500 USgpm HOSE DEMAND
ZONE 10 (PREACTION)	MCC ROOM	0.30 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND



TURBINE HALL RISER SCHEMATIC

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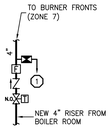
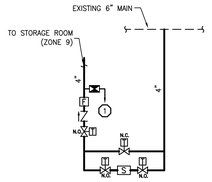


BURNER FRONT RISER SCHEMATIC

N.T.S.



SECOND FLOOR STORAGE RISER SCHEMATIC

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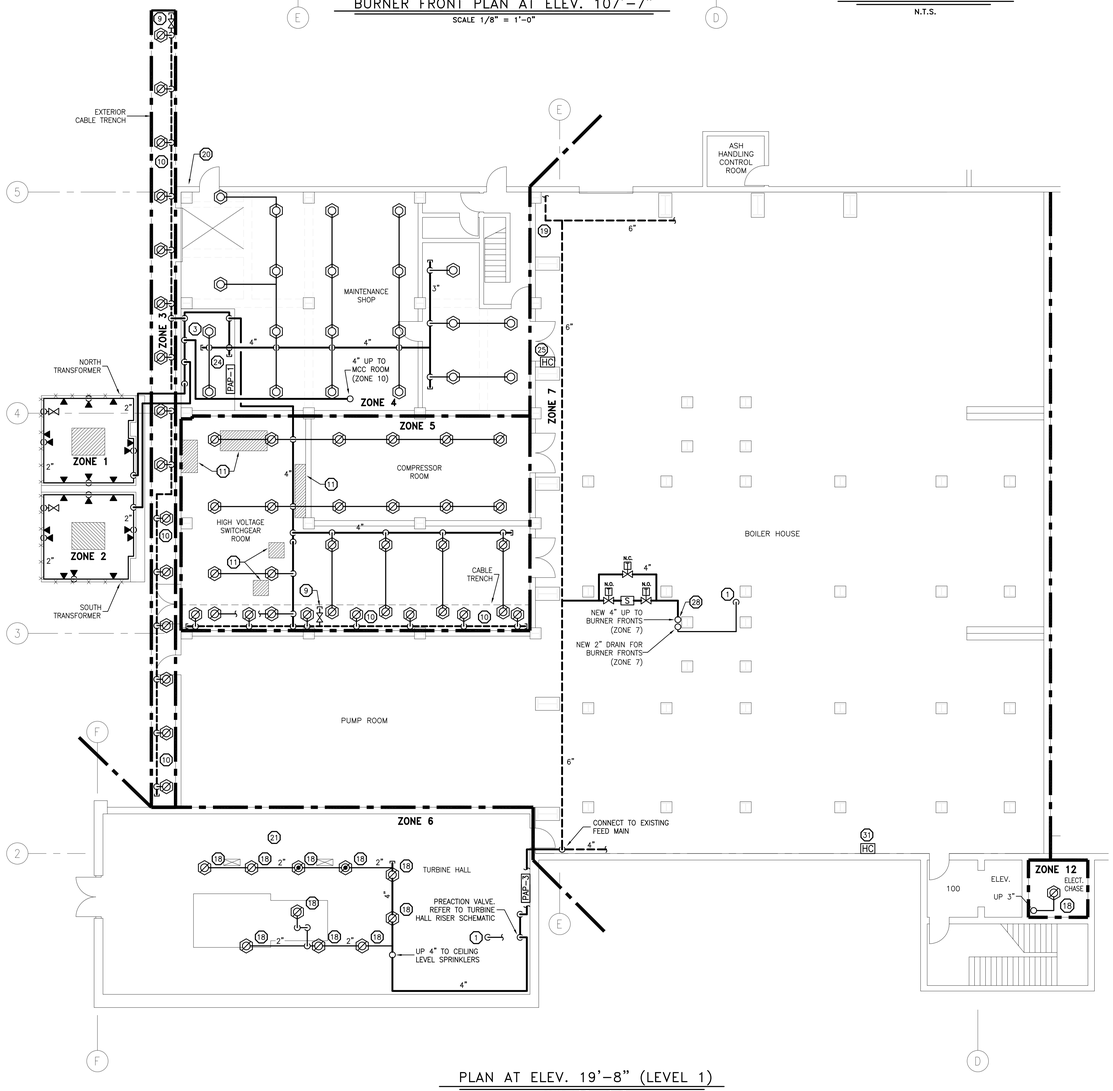
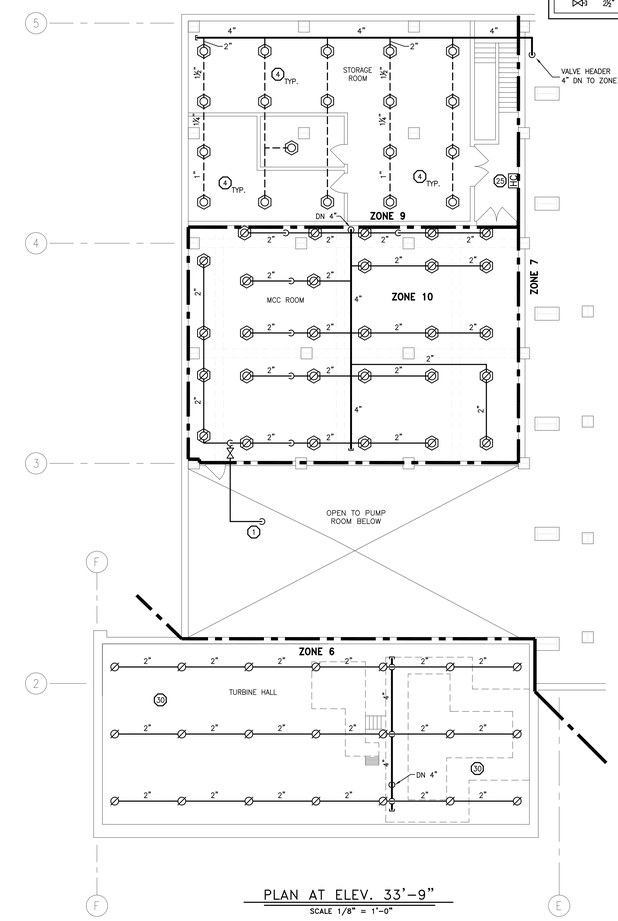


PLAN AT ELEV. 19'–8" (LEVEL 1)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 33'–9"

SCALE 1/8" = 1'-0"

LEGEND

○	STANDARD RESPONSE UPRIGHT SPRINKLER, 200°F, ½" ORIFICE, K = 8.0
⌀	STANDARD RESPONSE UPRIGHT SPRINKLER, 286°F, ½" ORIFICE, K = 8.0
◉	QUICK RESPONSE SEMI–RECESSED PENDENT SPRINKLER, 155°F, ½" ORIFICE, K = 5.6
⌀	QUICK RESPONSE SEMI–RECESSED PENDENT SPRINKLER, 286°F, ½" ORIFICE, K = 5.6
◉	QUICK RESPONSE DRY PENDENT SPRINKLER, 200°F, K = 5.6
◀	HIGH VELOCITY OPEN SPRAY NOZZLE, 3/8" ORIFICE, K = 1.6
⬡	SPRINKLER HEAD GUARD
—⊸	PIPE DOWN
○	RISER UP
—⊖—	TEE DOWN
◈	PREACTION VALVE
◇	DELUGE VALVE
⋈	CONTROL VALVE
N.C	NORMALLY CLOSED CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
N.O	NORMALLY OPEN CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
OS&Y	OS&Y GATE VALVE
F	FLOW SWITCH
←	FLUSHING/CAPPED CONNECTION
⋈	AUXILIARY DRAIN VALVE
⋈	CHECK VALVE
AS	ALARM SWITCH
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT
☽	REMOTE INSPECTOR'S TEST CONNECTION
HR	HOSE REEL c/w 1–½" HOSE CONNECTION AND HOSE
PAP	PREACTION RELEASING PANEL (BY OTHERS)
WM	WATER MONITOR c/w PROTECTIVE COVER
EC	FIRE HYDRANT EQUIPMENT CABINET
FP	FIRE PUMP
S	STRAINER
AC	AIR COMPRESSOR
AMD	AIR MAINTENANCE DEVICE
LAPS	LOW AIR PRESSURE SWITCH
PAP	PREACTION PANEL
FM	FLOW METER
RV	RELIEF VALVE
FPC	FIRE PUMP CONTROLLER
HC	INTERIOR HOSE CABINET c/w 1½" HOSE AND 2½" HOSE VALVE
	INSPECTOR'S TEST CONNECTION
	2½" HOSE VALVE

DRAWING NOTES

1. PIPE DRAIN TO EXTERIOR OR SUITABLE FLOOR DRAIN.
2. BRANCH PIPING TO FOLLOW SLOPE OF CEILING IN THIS AREA.
3. NEW VALVE ROOM IN MAINTENANCE SHOP. VALVES FOR SPRINKLER ZONE # 1, 2, 3, 4, 5, AND 10. REFER TO NEW VALVE ROOM RISER SCHEMATIC.
4. EXISTING BRANCH PIPING TO REMAIN IN THIS AREA AND MAIN TO BE REPLACED. OPEN NOZZLES TO BE REPLACED WITH NEW UPRIGHT SPRINKLERS. NEW SPRINKLER HEADS ARE TO BE LOCATED WITHIN 12" OF THE CEILING.
5. EXISTING VALVE ROOM TO BE EQUIPPED WITH NEW DOOR AND NEW CEILING. VALVES FOR SPRINKLER ZONES #21, 22, AND 23 TO BE LOCATED IN THIS ROOM.
6. PROVIDE AND INSTALL SPRINKLER HEADS DIRECTLY ABOVE WINDOWS. SPRINKLER HEADS SHALL BE COMPLETE WITH WATERSHIELD/HEAD GUARD. PROVIDE 1 SPRINKLER PER PANE OF GLASS. ALLOW FOR A MINIMUM OF 6 SPRINKLERS.
7. LOCATE MAIN TIGHT TO WALL TO AVOID OBSTRUCTIONS AND PIT OPERATIONS.
8. PROVIDE A NORMALLY OPEN SUPERVISED CONTROL VALVE ON RISER. LOCATE IN ACCESSIBLE AREA.
9. LOCATE LOW POINT DRAIN TO ALLOW FOR HOSE OR PAIL TO BE CONNECTED FOR DRAINING SYSTEM.
10. EXISTING SPRINKLER HEADS AND ATTACHED 1" ELBOWS AND TEES ARE TO BE DEMOLISHED AND REPLACED WITH NEW. MAINTAIN EXISTING MAIN.
11. PROVIDE SPLASH GUARD AT 9'–0" ABOVE FLOOR OVER EQUIPMENT. MATCH EXISTING ADJACENT SPLASH GUARD MATERIAL AND HANGING ARRANGEMENT.
12. PROVIDE ADEQUATE PIPE SUPPORTS AND BRACING TO STEEL AND/OR CONCRETE STRUCTURE.
13. PROVIDE BOLLARD PROTECTION AROUND HOSE VALVES AND WATER MONITORS TO PROTECT FROM PLANT OPERATIONS.
14. CONNECT TO NEW 4" RISER AS SHOWN ON BURNER FRONT RISER SCHEMATIC. PROVIDE NEW DRAIN RISER AND DRAIN TO BOILER HOUSE GROUND LEVEL WHERE NOTED.
15. PROVIDE NEW CABINET c/w HOSE AT THIS LOCATION.
16. PROVIDE NEW HOSE VALVES ON EXISTING FIRE HYDRANT.
17. PROVIDE NEW HOSE FOR FIRE DEPARTMENT USE IN NEW EQUIPMENT CABINET. CUT ROCK AS REQUIRED FOR INSTALLATION OF CABINET.
18. PROVIDE WATERSHIELD/HEAD GUARD ON SPRINKLER HEADS.
19. DEMOLISH EXISTING DELUGE VALVE HEADER AND PROVIDE NEW CONTROL VALVE AND FLOW SWITCH ASSEMBLY FOR ZONE #9. REFER TO SECOND FLOOR STORAGE RISER SCHEMATIC.
20. PIPE ALL SYSTEM DRAINS FOR THE VALVE HEADERS IN THE MAINTENANCE SHOP AT THIS LOCATION.
21. PROVIDE STEEL SUPPORT BETWEEN EXISTING COLUMNS FOR SUPPORTING NEW BRANCH PIPING.
22. PROVIDE NEW FIRE DEPARTMENT CONNECTION AT THIS LOCATION. FIRE DEPARTMENT CONNECTION AND PIPING TO BE SECURED TO ADJACENT COLUMN. LOCATE BETWEEN 36" AND 48" ABOVE GRADE.
23. PROVIDE NEW BULKHEAD TO CONCEAL SPRINKLER SYSTEM MAIN. PAINT COLOUR TO MATCH ADJACENT WALLS.
24. PROVIDE SPRINKLER PROTECTION IN THIS ROOM. CONNECT TO MAINTENANCE SHOP SPRINKLER ZONE.
25. PROVIDE NEW NORMALLY OPEN SUPERVISED CONTROL VALVE ON EXISTING HOSE SUPPLY PIPING. VALVE TO BE IN ACCESSIBLE LOCATION.
26. PROVIDE NEW WALL HYDRANT c/w 2–2½" VALVES.
27. REFER TO WATER MONITOR SCHEMATIC FOR INSTALLATION DETAIL.
28. PROVIDE NEW 2½" HOSE VALVES AT EACH STAIR LANDING AND CONNECT TO NEW 4" RISER. ALLOW FOR 6 IN TOTAL.
29. PROVIDE STAND TO SUPPORT NEW HOSE CABINET. BOTTOM OF CABINET TO BE 36" ABOVE GRADE. STAND TO BE MOUNTED ON CONCRETE FOOTINGS.
30. ALL PIPING AND COMPONENTS IN TURBINE HALL SHALL BE COORDINATED TO AVOID EXISTING OVERHEAD CRANE.
31. PROVIDE NEW HOSE CABINET AT THIS LOCATION, c/w 2½", AND 1½" CONNECTION, HOSE AND NOZZLE. A NORMALLY OPEN SUPERVISED CONTROL VALVE IS TO BE PROVIDED ON THE SUPPLY PIPING.

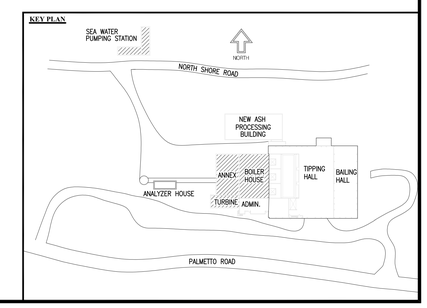
GENERAL NOTES:

1. INSTALL POKE UPS, SWING JOINTS AND DEEP CUP ESCUTCHEONS AS REQUIRED.
2. INSTALL HANGERS AND BRACING AS REQUIRED.

PIPE SIZE TABLE

No. OF HEADS (BRANCH LINE)	PIPE SIZE	CROSSMAIN SIZE	FEED MAIN SIZE
1 & 2	1"	SEE DWG.	SEE DWG.
3	1¼"		
4	1½"		
REMAINDER	2"		

NOTES:
- PIPE SIZES ARE TO BE AS STATED ABOVE UNLESS NOTED OTHERWISE.
- RISER NIPPLES ARE TO FOLLOW SAME PIPE SIZE FORMAT AS BRANCH LINES.



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Ian C. MacDonald
SIGNATURE
2010-01-15
DATE
Province du Nouveau – Brunswick
INGÉNIEUR IMMATRICULÉ

THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

CONSULTANT

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ISSUE / REVISION

No.		Date:
6	-	-
5	ISSUED FOR TENDER	10/01/15
4	ISSUED FOR PERMIT APPLICATION	09/05/11
3	ISSUED FOR FINAL REVIEW	08/02/29
2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: AM/LD Date: -
Checked By: AM Date: -

DRAWING
Prepared By: LD Date: -
Checked By: IM Date: -

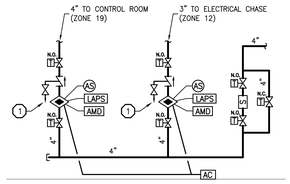
Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

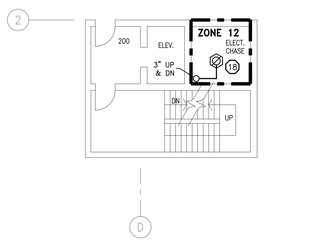
Sheet Title:
SPRINKLER SYSTEM ANNEX BUILDING, TURBINE HALL AND BOILER HOUSE

Revision: 5 | Sheet Number: **FP1-2**



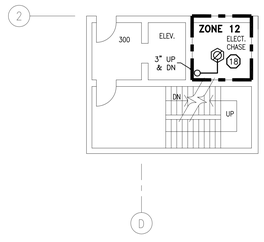
RISER SCHEMATIC

N.T.S.



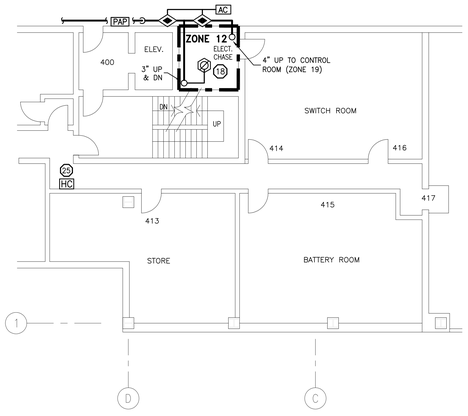
PLAN AT ELEV. 36'-9" (LEVEL 2)

SCALE 1/8" = 1'-0"



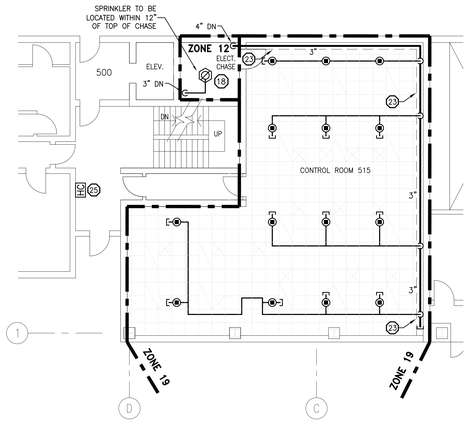
PLAN AT ELEV. 49'-3" (LEVEL 3)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 62'-4" (LEVEL 4)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 75'-6" (LEVEL 5)

SCALE 1/8" = 1'-0"

DRAWING NOTES

1. PIPE DRAIN TO EXTERIOR OR SUITABLE FLOOR DRAIN.
2. BRANCH PIPING TO FOLLOW SLOPE OF CEILING IN THIS AREA.
3. NEW VALVE ROOM IN MAINTENANCE SHOP. VALVES FOR SPRINKLER ZONE # 1, 2, 3, 4, 5, AND 10. REFER TO NEW VALVE ROOM RISER SCHEMATIC.
4. EXISTING BRANCH PIPING TO REMAIN IN THIS AREA AND MAIN TO BE REPLACED. OPEN NOZZLES TO BE REPLACED WITH NEW UPRIGHT SPRINKLERS. NEW SPRINKLER HEADS ARE TO BE LOCATED WITHIN 12" OF THE CEILING.
5. EXISTING VALVE ROOM TO BE EQUIPPED WITH NEW DOOR AND NEW CEILING. VALVES FOR SPRINKLER ZONES #21, 22, AND 23 TO BE LOCATED IN THIS ROOM.
6. PROVIDE AND INSTALL SPRINKLER HEADS DIRECTLY ABOVE WINDOWS. SPRINKLER HEADS SHALL BE COMPLETE WITH WATERSHIELD/HEAD GUARD. PROVIDE 1 SPRINKLER PER PANE OF GLASS. ALLOW FOR A MINIMUM OF 6 SPRINKLERS.
7. LOCATE MAIN TIGHT TO WALL TO AVOID OBSTRUCTIONS AND PIT OPERATIONS.
8. PROVIDE A NORMALLY OPEN SUPERVISED CONTROL VALVE ON RISER. LOCATE IN ACCESSIBLE AREA.
9. LOCATE LOW POINT DRAIN TO ALLOW FOR HOSE OR PAIL TO BE CONNECTED FOR DRAINING SYSTEM.
10. EXISTING SPRINKLER HEADS AND ATTACHED 1" ELBOWS AND TEES ARE TO BE DEMOLISHED AND REPLACED WITH NEW. MAINTAIN EXISTING MAIN.
11. PROVIDE SPLASH GUARD AT 9'-0" ABOVE FLOOR OVER EQUIPMENT. MATCH EXISTING ADJACENT SPLASH GUARD MATERIAL AND HANGING ARRANGEMENT.
12. PROVIDE ADEQUATE PIPE SUPPORTS AND BRACING TO STEEL AND/OR CONCRETE STRUCTURE.
13. PROVIDE BOLLARD PROTECTION AROUND HOSE VALVES AND WATER MONITORS TO PROTECT FROM PLANT OPERATIONS.
14. CONNECT TO NEW 4" RISER AS SHOWN ON BURNER FRONT RISER SCHEMATIC. PROVIDE NEW DRAIN RISER AND DRAIN TO BOILER HOUSE GROUND LEVEL WHERE NOTED.
15. PROVIDE NEW CABINET c/w HOSE AT THIS LOCATION.
16. PROVIDE NEW HOSE VALVES ON EXISTING FIRE HYDRANT.
17. PROVIDE NEW HOSE FOR FIRE DEPARTMENT USE IN NEW EQUIPMENT CABINET. CUT ROCK AS REQUIRED FOR INSTALLATION OF CABINET.
18. PROVIDE WATERSHIELD/HEAD GUARD ON SPRINKLER HEADS.
19. DEMOLISH EXISTING DELUGE VALVE HEADER AND PROVIDE NEW CONTROL VALVE AND FLOW SWITCH ASSEMBLY FOR ZONE #9. REFER TO SECOND FLOOR STORAGE RISER SCHEMATIC.
20. PIPE ALL SYSTEM DRAINS FOR THE VALVE HEADERS IN THE MAINTENANCE SHOP AT THIS LOCATION.
21. PROVIDE STEEL SUPPORT BETWEEN EXISTING COLUMNS FOR SUPPORTING NEW BRANCH PIPING.
22. PROVIDE NEW FIRE DEPARTMENT CONNECTION AT THIS LOCATION. FIRE DEPARTMENT CONNECTION AND PIPING TO BE SECURED TO ADJACENT COLUMN. LOCATE BETWEEN 36" AND 48" ABOVE GRADE.
23. PROVIDE NEW BULKHEAD TO CONCEAL SPRINKLER SYSTEM MAIN. PAINT COLOUR TO MATCH ADJACENT WALLS.
24. PROVIDE SPRINKLER PROTECTION IN THIS ROOM. CONNECT TO MAINTENANCE SHOP SPRINKLER ZONE.
25. PROVIDE NEW NORMALLY OPEN SUPERVISED CONTROL VALVE ON EXISTING HOSE SUPPLY PIPING. VALVE TO BE IN ACCESSIBLE LOCATION.
26. PROVIDE NEW WALL HYDRANT c/w 2-2½" VALVES.
27. REFER TO WATER MONITOR SCHEMATIC FOR INSTALLATION DETAIL.
28. PROVIDE NEW 2½" HOSE VALVES AT EACH STAIR LANDING AND CONNECT TO NEW 4" RISER. ALLOW FOR 6 IN TOTAL.
29. PROVIDE STAND TO SUPPORT NEW HOSE CABINET. BOTTOM OF CABINET TO BE 36" ABOVE GRADE. STAND TO BE MOUNTED ON CONCRETE FOOTINGS.
30. ALL PIPING AND COMPONENTS IN TURBINE HALL SHALL BE COORDINATED TO AVOID EXISTING OVERHEAD CRANE.
31. PROVIDE NEW HOSE CABINET AT THIS LOCATION, c/w 2½", AND 1½" CONNECTION, HOSE AND NOZZLE. A NORMALLY OPEN SUPERVISED CONTROL VALVE IS TO BE PROVIDED ON THE SUPPLY PIPING.

GENERAL NOTES:

1. INSTALL POKE UPS, SWING JOINTS AND DEEP CUP ESCUTCHEONS AS REQUIRED.
2. INSTALL HANGERS AND BRACING AS REQUIRED.

LEGEND

- STANDARD RESPONSE UPRIGHT SPRINKLER, 200°F, ½" ORIFICE, K = 8.0
- STANDARD RESPONSE UPRIGHT SPRINKLER, 286°F, ½" ORIFICE, K = 8.0
- QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 155°F, ½" ORIFICE, K = 5.6
- QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 286°F, ½" ORIFICE, K = 5.6
- QUICK RESPONSE DRY PENDENT SPRINKLER, 200°F, K = 5.6
- HIGH VELOCITY OPEN SPRAY NOZZLE, 3/8" ORIFICE, K = 1.6
- SPRINKLER HEAD GUARD
- PIPE DOWN
- RISER UP
- TEE DOWN
- PREACTION VALVE
- DELUGE VALVE
- CONTROL VALVE
- NC — NORMALLY CLOSED CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
- NO — NORMALLY OPEN CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
- OS&Y GATE VALVE
- F — FLOW SWITCH
- FLUSHING/CAPPED CONNECTION
- AUXILIARY DRAIN VALVE
- CHECK VALVE
- AS — ALARM SWITCH
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- REMOTE INSPECTOR'S TEST CONNECTION
- HR — HOSE REEL c/w 1-½" HOSE CONNECTION AND HOSE
- PAP — PREACTION RELEASING PANEL (BY OTHERS)
- WM — WATER MONITOR c/w PROTECTIVE COVER
- EC — FIRE HYDRANT EQUIPMENT CABINET
- FP — FIRE PUMP
- S — STRAINER
- AC — AIR COMPRESSOR
- AMD — AIR MAINTENANCE DEVICE
- LAPS — LOW AIR PRESSURE SWITCH
- PAP — PREACTION PANEL
- FM — FLOW METER
- RV — RELIEF VALVE
- FPC — FIRE PUMP CONTROLLER
- HC — INTERIOR HOSE CABINET c/w 1½" HOSE AND 2½" HOSE VALVE
- INSPECTOR'S TEST CONNECTION
- 2½" HOSE VALVE

PIPE SIZE TABLE

No. OF HEADS (BRANCH LINE)	PIPE SIZE	CROSSMAIN SIZE	FEED MAIN SIZE
1 & 2	1"	SEE DWG.	SEE DWG.
3	1¼"		
4	1½"		
REMAINDER	2"		

NOTES:
- PIPE SIZES ARE TO BE AS STATED ABOVE UNLESS NOTED OTHERWISE.
- RISER NIPPLES ARE TO FOLLOW SAME PIPE SIZE FORMAT AS BRANCH LINES.

HAZARD TABLE

LOCATION	OCCUPANCY	DESIGN CRITERIA
ZONE 12 (PREACTION)	ELECTRICAL CHASE	0.30 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
ZONE 19 (PREACTION)	LIGHT HAZARD CONTROL ROOM	0.10 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND

MINISTRY OF WORKS AND ENGINEERING

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REGISTERED PROFESSIONAL ENGINEER
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Ian C. MacDonald
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2010-01-15
DATE
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INGÉNIEUR IMMATRICULÉ

THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

CONSULTANT

RJ Bartlett Engineering Ltd
Fire Protection Engineers
Building Code Consultants
www.rjbartlett.com

ISSUE / REVISION

No.		Date:
1	-	-
5	ISSUED FOR TENDER	10/01/15
4	ISSUED FOR PERMIT APPLICATION	09/05/11
3	ISSUED FOR FINAL REVIEW	08/02/29
2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: AM/LD Date: -
Checked By: AM Date: -

DRAWING
Prepared By: LD Date: -
Checked By: IM Date: -

Approved By: -

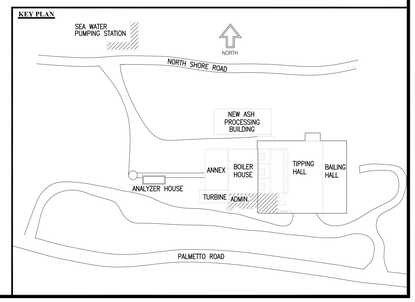
Project Number: **07031**

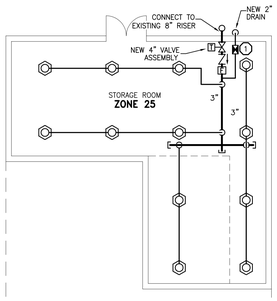
Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
SPRINKLER SYSTEM ADMINISTRATION BUILDING

Revision: 5 | Sheet Number: **FP1-3**

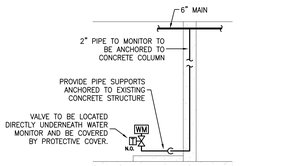
KEY PLAN





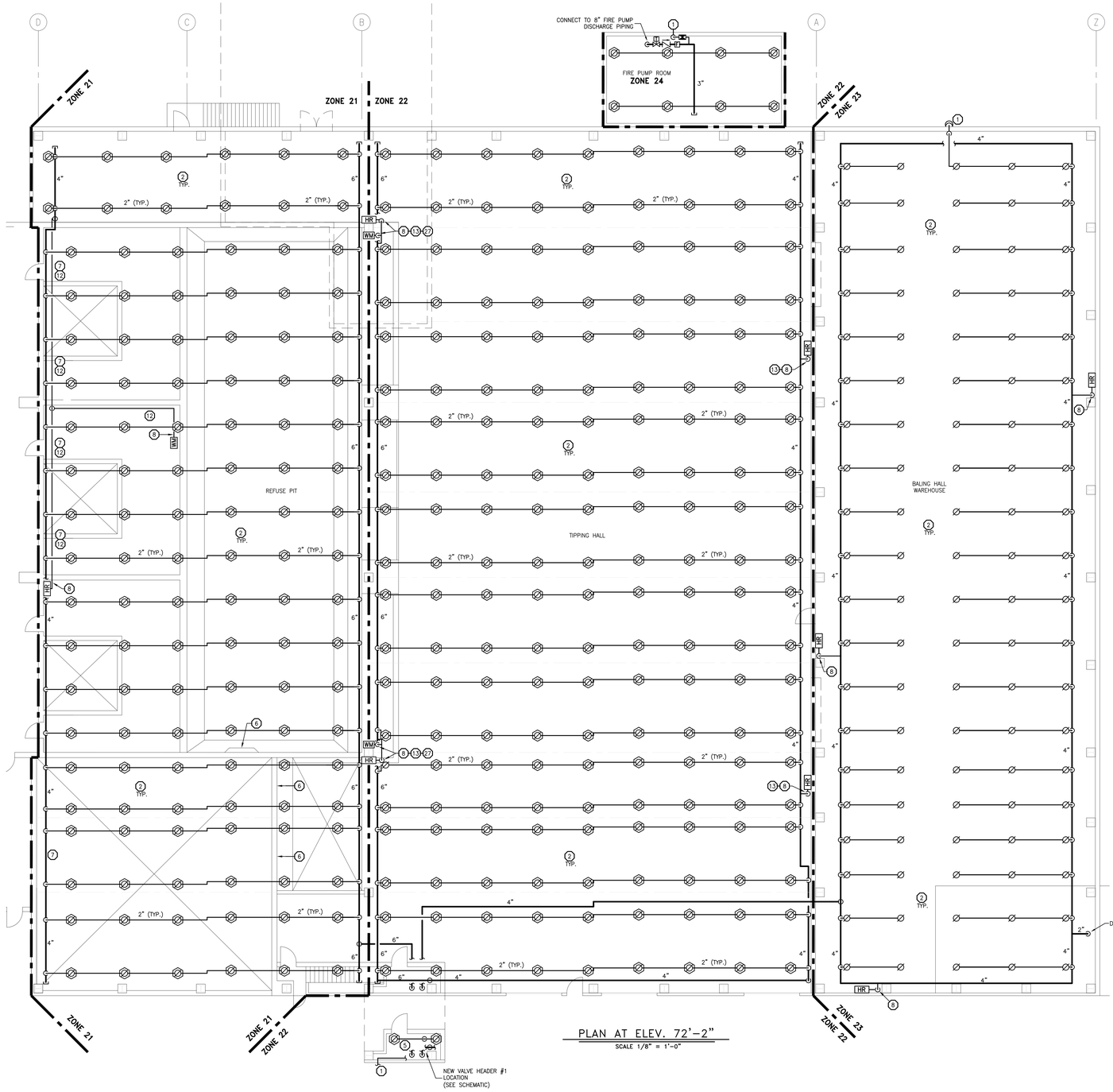
PLAN AT ELEV. 60'-0"

SCALE 1/8" = 1'-0"



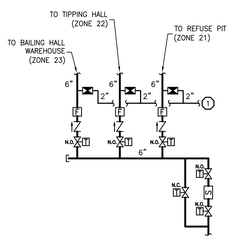
WATER MONITOR SCHEMATIC

N.T.S.



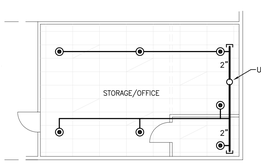
PLAN AT ELEV. 72'-2"

SCALE 1/8" = 1'-0"



VALVE HEADER #1 RISER SCHEMATIC

N.T.S.



DRAWING NOTES

1. PIPE DRAIN TO EXTERIOR OR SUITABLE FLOOR DRAIN.
2. BRANCH PIPING TO FOLLOW SLOPE OF CEILING IN THIS AREA.
3. NEW VALVE ROOM IN MAINTENANCE SHOP. VALVES FOR SPRINKLER ZONE # 1, 2, 3, 4, 5, AND 10. REFER TO NEW VALVE ROOM RISER SCHEMATIC.
4. EXISTING BRANCH PIPING TO REMAIN IN THIS AREA AND MAIN TO BE REPLACED. OPEN NOZZLES TO BE REPLACED WITH NEW UPRIGHT SPRINKLERS. NEW SPRINKLER HEADS ARE TO BE LOCATED WITHIN 12" OF THE CEILING.
5. EXISTING VALVE ROOM TO BE EQUIPPED WITH NEW DOOR AND NEW CEILING. VALVES FOR SPRINKLER ZONES #21, 22, AND 23 TO BE LOCATED IN THIS ROOM.
6. PROVIDE AND INSTALL SPRINKLER HEADS DIRECTLY ABOVE WINDOWS. SPRINKLER HEADS SHALL BE COMPLETE WITH WATERSHIELD/HEAD GUARD. PROVIDE 1 SPRINKLER PER PANE OF GLASS. ALLOW FOR A MINIMUM OF 6 SPRINKLERS.
7. LOCATE MAIN TIGHT TO WALL TO AVOID OBSTRUCTIONS AND PIT OPERATIONS.
8. PROVIDE A NORMALLY OPEN SUPERVISED CONTROL VALVE ON RISER. LOCATE IN ACCESSIBLE AREA.
9. LOCATE LOW POINT DRAIN TO ALLOW FOR HOSE OR PAIL TO BE CONNECTED FOR DRAINING SYSTEM.
10. EXISTING SPRINKLER HEADS AND ATTACHED 1" ELBOWS AND TEES ARE TO BE DEMOLISHED AND REPLACED WITH NEW. MAINTAIN EXISTING MAIN.
11. PROVIDE SPLASH GUARD AT 9'-0" ABOVE FLOOR OVER EQUIPMENT. MATCH EXISTING ADJACENT SPLASH GUARD MATERIAL AND HANGING ARRANGEMENT.
12. PROVIDE ADEQUATE PIPE SUPPORTS AND BRACING TO STEEL AND/OR CONCRETE STRUCTURE.
13. PROVIDE BOLLARD PROTECTION AROUND HOSE VALVES AND WATER MONITORS TO PROTECT FROM PLANT OPERATIONS.
14. CONNECT TO NEW 4" RISER AS SHOWN ON BURNER FRONT RISER SCHEMATIC. PROVIDE NEW DRAIN RISER AND DRAIN TO BOILER HOUSE GROUND LEVEL WHERE NOTED.
15. PROVIDE NEW CABINET c/w HOSE AT THIS LOCATION.
16. PROVIDE NEW HOSE VALVES ON EXISTING FIRE HYDRANT.
17. PROVIDE NEW HOSE FOR FIRE DEPARTMENT USE IN NEW EQUIPMENT CABINET. CUT ROCK AS REQUIRED FOR INSTALLATION OF CABINET.
18. PROVIDE WATERSHIELD/HEAD GUARD ON SPRINKLER HEADS.
19. DEMOLISH EXISTING DELUGE VALVE HEADER AND PROVIDE NEW CONTROL VALVE AND FLOW SWITCH ASSEMBLY FOR ZONE #3. REFER TO SECOND FLOOR STORAGE RISER SCHEMATIC.
20. PIPE ALL SYSTEM DRAINS FOR THE VALVE HEADERS IN THE MAINTENANCE SHOP AT THIS LOCATION.
21. PROVIDE STEEL SUPPORT BETWEEN EXISTING COLUMNS FOR SUPPORTING NEW BRANCH PIPING.
22. PROVIDE NEW FIRE DEPARTMENT CONNECTION AT THIS LOCATION. FIRE DEPARTMENT CONNECTION AND PIPING TO BE SECURED TO ADJACENT COLUMN. LOCATE BETWEEN 36" AND 48" ABOVE GRADE.
23. PROVIDE NEW BULKHEAD TO CONCEAL SPRINKLER SYSTEM MAIN. PAINT COLOUR TO MATCH ADJACENT WALLS.
24. PROVIDE SPRINKLER PROTECTION IN THIS ROOM. CONNECT TO MAINTENANCE SHOP SPRINKLER ZONE.
25. PROVIDE NEW NORMALLY OPEN SUPERVISED CONTROL VALVE ON EXISTING HOSE SUPPLY PIPING. VALVE TO BE IN ACCESSIBLE LOCATION.
26. PROVIDE NEW WALL HYDRANT c/w 2-2½" VALVES.
27. REFER TO WATER MONITOR SCHEMATIC FOR INSTALLATION DETAIL.
28. PROVIDE NEW 2½" HOSE VALVES AT EACH STAIR LANDING AND CONNECT TO NEW 4" RISER. ALLOW FOR 6 IN TOTAL.
29. PROVIDE STAND TO SUPPORT NEW HOSE CABINET. BOTTOM OF CABINET TO BE 36" ABOVE GRADE. STAND TO BE MOUNTED ON CONCRETE FOOTINGS.
30. ALL PIPING AND COMPONENTS IN TURBINE HALL SHALL BE COORDINATED TO AVOID EXISTING OVERHEAD CRANE.
31. PROVIDE NEW HOSE CABINET AT THIS LOCATION, c/w 2½", AND 1½" CONNECTION, HOSE AND NOZZLE. A NORMALLY OPEN SUPERVISED CONTROL VALVE IS TO BE PROVIDED ON THE SUPPLY PIPING.

GENERAL NOTES:

1. INSTALL POKE UPS, SWING JOINTS AND DEEP CUP ESCUTCHEONS AS REQUIRED.
2. INSTALL HANGERS AND BRACING AS REQUIRED.

LEGEND

○	STANDARD RESPONSE UPRIGHT SPRINKLER, 200°F, ½" ORIFICE, K = 8.0
⌀	STANDARD RESPONSE UPRIGHT SPRINKLER, 286°F, ½" ORIFICE, K = 8.0
◉	QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 155°F, ½" ORIFICE, K = 5.6
⌀	QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 286°F, ½" ORIFICE, K = 5.6
◉	QUICK RESPONSE DRY PENDENT SPRINKLER, 200°F, K = 5.6
◀	HIGH VELOCITY OPEN SPRAY NOZZLE, 3/8" ORIFICE, K = 1.6
⬡	SPRINKLER HEAD GUARD
—⊸	PIPE DOWN
○	RISER UP
—○—	TEE DOWN
◈	PREACTION VALVE
◈	DELUGE VALVE
⋈	CONTROL VALVE
N.C.	NORMALLY CLOSED CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
N.O.	NORMALLY OPEN CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
⋈	OS&Y GATE VALVE
F	FLOW SWITCH
⊢	FLUSHING/CAPPED CONNECTION
⋈	AUXILIARY DRAIN VALVE
⋈	CHECK VALVE
AS	ALARM SWITCH
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT
	REMOTE INSPECTOR'S TEST CONNECTION
HR	HOSE REEL c/w 1-½" HOSE CONNECTION AND HOSE
PAP	PREACTION RELEASING PANEL (BY OTHERS)
WM	WATER MONITOR c/w PROTECTIVE COVER
EC	FIRE HYDRANT EQUIPMENT CABINET
FP	FIRE PUMP
S	STRAINER
AC	AIR COMPRESSOR
AMD	AIR MAINTENANCE DEVICE
LAPS	LOW AIR PRESSURE SWITCH
PAP	PREACTION PANEL
FM	FLOW METER
RV	RELIEF VALVE
FPC	FIRE PUMP CONTROLLER
HC	INTERIOR HOSE CABINET c/w 1½" HOSE AND 2½" HOSE VALVE
	INSPECTOR'S TEST CONNECTION
	2½" HOSE VALVE

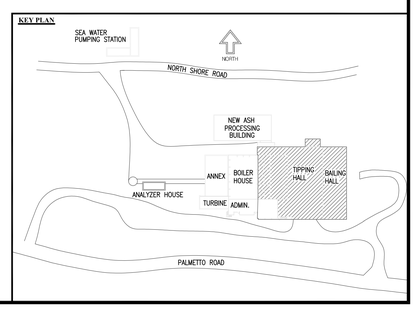
PIPE SIZE TABLE

No. OF HEADS (BRANCH LINE)	PIPE SIZE	CROSSMAIN SIZE	FEED MAIN SIZE
1 & 2	1"	SEE DWG.	SEE DWG.
3	1¼"		
4	1½"		
REMAINDER	2"		

NOTES:
- PIPE SIZES ARE TO BE AS STATED ABOVE UNLESS NOTED OTHERWISE.
- RISER NIPPLES ARE TO FOLLOW SAME PIPE SIZE FORMAT AS BRANCH LINES.

HAZARD TABLE

LOCATION	OCCUPANCY	DESIGN CRITERIA
ZONE 21 (WET)	REFUSE PIT	0.25 USgpm/ft² OVER A MINIMUM OF 3000ft² 500 USgpm HOSE DEMAND
ZONE 22 (WET)	TIPPING HALL	0.25 USgpm/ft² OVER A MINIMUM OF 3000ft² 500 USgpm HOSE DEMAND
ZONE 23 (WET)	ORDINARY HAZARD GROUP 1 (STORAGE/OFFICE)	0.15 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
	CLASS IV COMMODITY (BAILING HALL WAREHOUSE AND STORAGE AREA)	0.30 USgpm/ft² OVER A MINIMUM OF 2000ft² 500 USgpm HOSE DEMAND
ZONE 24 (WET)	FIRE PUMP ROOM	0.25 USgpm/ft² OVER THE ENTIRE AREA 500 USgpm HOSE DEMAND
ZONE 25 (WET)	ORDINARY HAZARD GROUP 2 (STORAGE ROOM BELOW TIPPING HALL)	0.20 USgpm/ft² OVER A MINIMUM OF 1500ft² 500 USgpm HOSE DEMAND



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THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE.

CONSULTANT

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ISSUE / REVISION

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3	ISSUED FOR FINAL REVIEW	08/02/29
2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: AS NOTED

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: AM/LD Date: -
Checked By: AM Date: -

DRAWING
Prepared By: LD Date: -
Checked By: IM Date: -

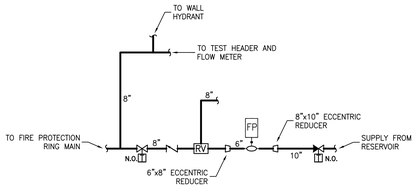
Approved By: -

Project Number: 07031

Project Title: TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

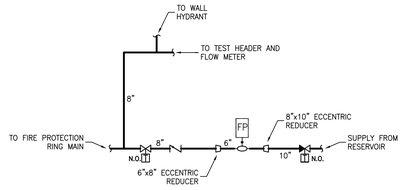
Sheet Title: SPRINKLER SYSTEM REFUSE PIT, TIPPING HALL AND BAILING HALL

Revision: 5 Sheet Number: FP1-4



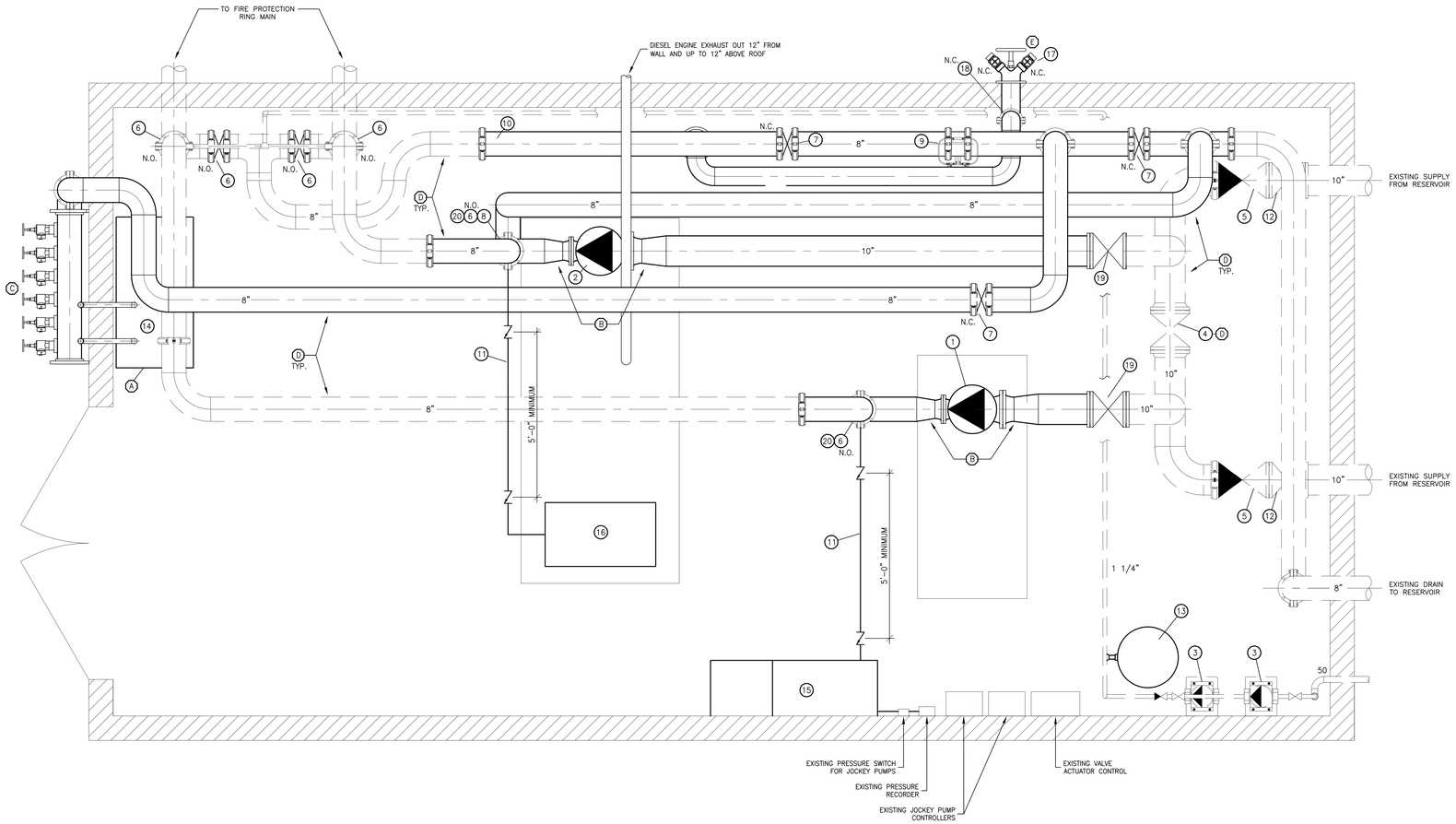
DIESEL FIRE PUMP SCHEMATIC

N.T.S.



ELECTRIC FIRE PUMP SCHEMATIC

N.T.S.



PUMP ROOM PLAN

SCALE 3/4"=1'-0"

DRAWING NOTES

A	CONTRACTOR TO PROVIDE NEW STAND FOR NEW DIESEL TANK. STAND SHALL BE AT PROPER ELEVATION AS REQUIRED FOR PROVIDING FUEL TO THE DIESEL ENGINE FUEL INJECTORS.
B	PROVIDED LIQUID FILLED PRESSURE GAUGES ON SUCTION AND DISCHARGE SIDES OF FIRE PUMP.
C	TEST HEADER SHALL BE LOCATED 4'-0" ABOVE GRADE AND BRACED TO THE EXTERIOR WALL. PROVIDE 2½" GALVANIZED CAPS TO REPLACE VALVES WHEN THE TEST HEADER IS NOT UTILIZED.
D	SOLID LINES INDICATE NEW PIPING/COMPONENTS. DASHED LINES INDICATE EXISTING TO REMAIN.
E	WALL HYDRANT TO BE MOUNTED 4'-0" ABOVE GRADE. WALL POST INDICATOR TO BE MOUNTED 3'-0" ABOVE GRADE.
F	PROVIDE NEW TAMPER SWITCH FOR EXISTING VALVE.

EQUIPMENT LEGEND

1	NEW ELECTRIC MOTOR DRIVEN HORIZONTAL SPLIT CASE PUMP 1500 USGPM @ 150 PSI INSTALLED ON EXISTING CONCRETE PAD.
2	NEW DIESEL ENGINE DRIVE HORIZONTAL SPLIT CASE PUMP 1500 USgpm @ 150 PSI INSTALLED ON EXISTING CONCRETE PAD.
3	EXISTING JOCKEY PUMP.
4	EXISTING OS&Y GATE VALVE.
5	EXISTING CHECK VALVE.
6	NEW NORMALLY OPENED SUPERVISED CONTROL VALVE.
7	NEW NORMALLY CLOSED SUPERVISED CONTROL VALVE.
8	NEW 8" SEAWATER SERVICE RELIEF VALVE C/W WASTE CONE.
9	NEW FLOWMETER.
10	CONNECT HERE FOR PUMP ROOM SPRINKLER SYSTEM.
11	NEW STAINLESS STEEL PRESSURE SENSING LINE.
12	EXISTING MOTOR OPERATED GATE VALVE.
13	NEW 150 GALLON EXPANSION TANK COMPLETE WITH ACCESS HATCH, PRESSURE GAUGE AND REMOVABLE BLADDER.
14	NEW 260 US GALLON DOUBLE WALL DIESEL FUEL TANK c/w FUEL FILL LINE AND FUEL VENT
15	NEW ELECTRIC FIRE PUMP CONTROLLER c/w TRANSFER SWITCH.
16	NEW DIESEL FIRE PUMP CONTROLLER.
17	NEW WALL HYDRANT c/w 2 HOSE VALVES
18	NEW 6" NORMALLY CLOSED OS&Y GATE VALVE c/w WALL POST INDICATOR.
19	NEW NORMALLY OPEN SUPERVISED OS&Y GATE VALVE
20	NEW CHECK VALVE

LEGEND

○	STANDARD RESPONSE UPRIGHT SPRINKLER, 200°F, ½" ORIFICE, K = 8.0
⌀	STANDARD RESPONSE UPRIGHT SPRINKLER, 286°F, ½" ORIFICE, K = 8.0
◉	QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 155°F, ½" ORIFICE, K = 5.6
⌀	QUICK RESPONSE SEMI-RECESSED PENDENT SPRINKLER, 286°F, ½" ORIFICE, K = 5.6
◉	QUICK RESPONSE DRY PENDENT SPRINKLER, 200°F, K = 5.6
◀	HIGH VELOCITY OPEN SPRAY NOZZLE, 3/8" ORIFICE, K = 1.6
⬡	SPRINKLER HEAD GUARD
	PIPE DOWN
○	RISER UP
	TEE DOWN
	PREACTION VALVE
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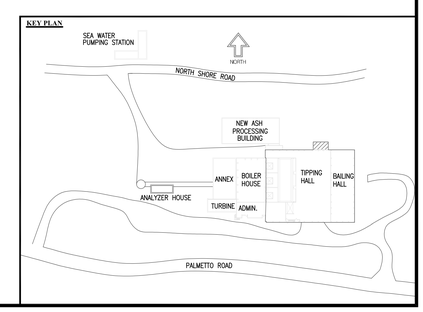
	CONTROL VALVE
N.C.	NORMALLY CLOSED CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
N.O.	NORMALLY OPEN CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
	OS&Y GATE VALVE
F	FLOW SWITCH
	FLUSHING/CAPPED CONNECTION
	AUXILIARY DRAIN VALVE
	CHECK VALVE
AS	ALARM SWITCH
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT
	REMOTE INSPECTOR'S TEST CONNECTION
HR	HOSE REEL c/w 1-½" HOSE CONNECTION AND HOSE
PAP	PREACTION RELEASING PANEL (BY OTHERS)
WM	WATER MONITOR c/w PROTECTIVE COVER
EC	FIRE HYDRANT EQUIPMENT CABINET
FP	FIRE PUMP
S	STRAINER
AC	AIR COMPRESSOR
AMD	AIR MAINTENANCE DEVICE
LAPS	LOW AIR PRESSURE SWITCH
PAP	PREACTION PANEL
FM	FLOW METER
RV	RELIEF VALVE
FPC	FIRE PUMP CONTROLLER
HC	INTERIOR HOSE CABINET c/w 1½" HOSE AND 2½" HOSE VALVE
	INSPECTOR'S TEST CONNECTION
	2½" HOSE VALVE

KEY PLAN



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THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

CONSULTANT

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2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: AM/LD Date: -
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DRAWING
Prepared By: LD Date: -
Checked By: IM Date: -

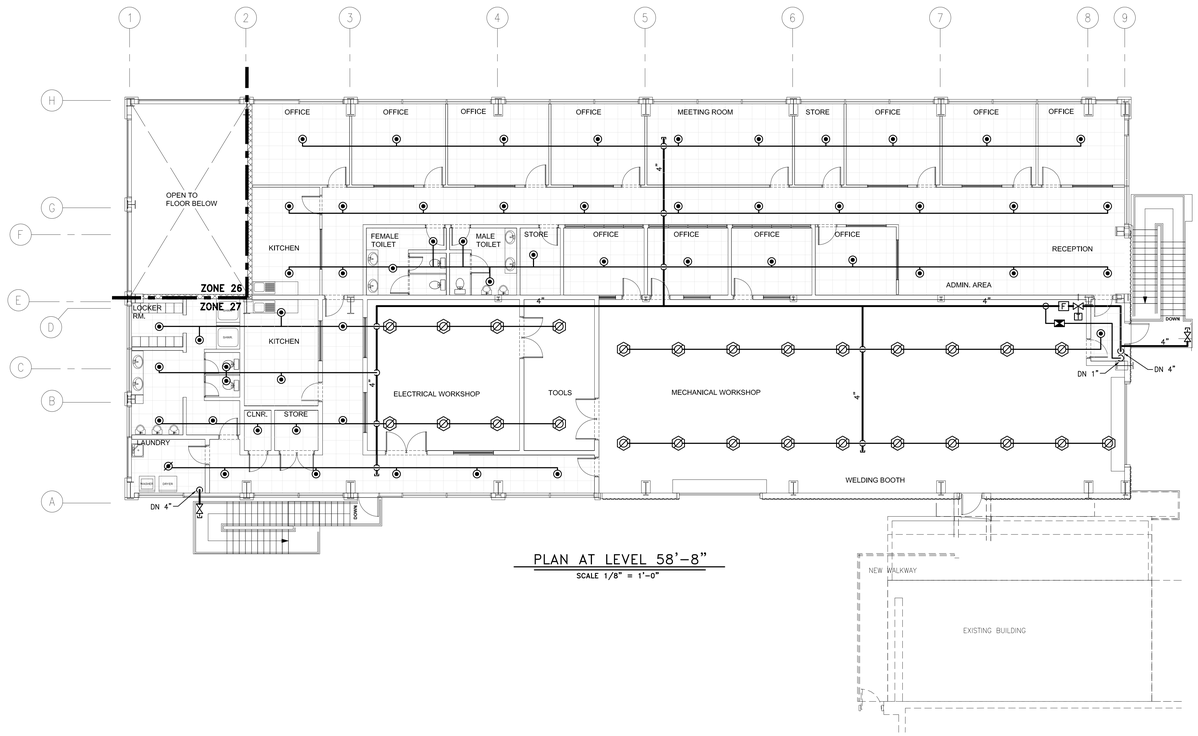
Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

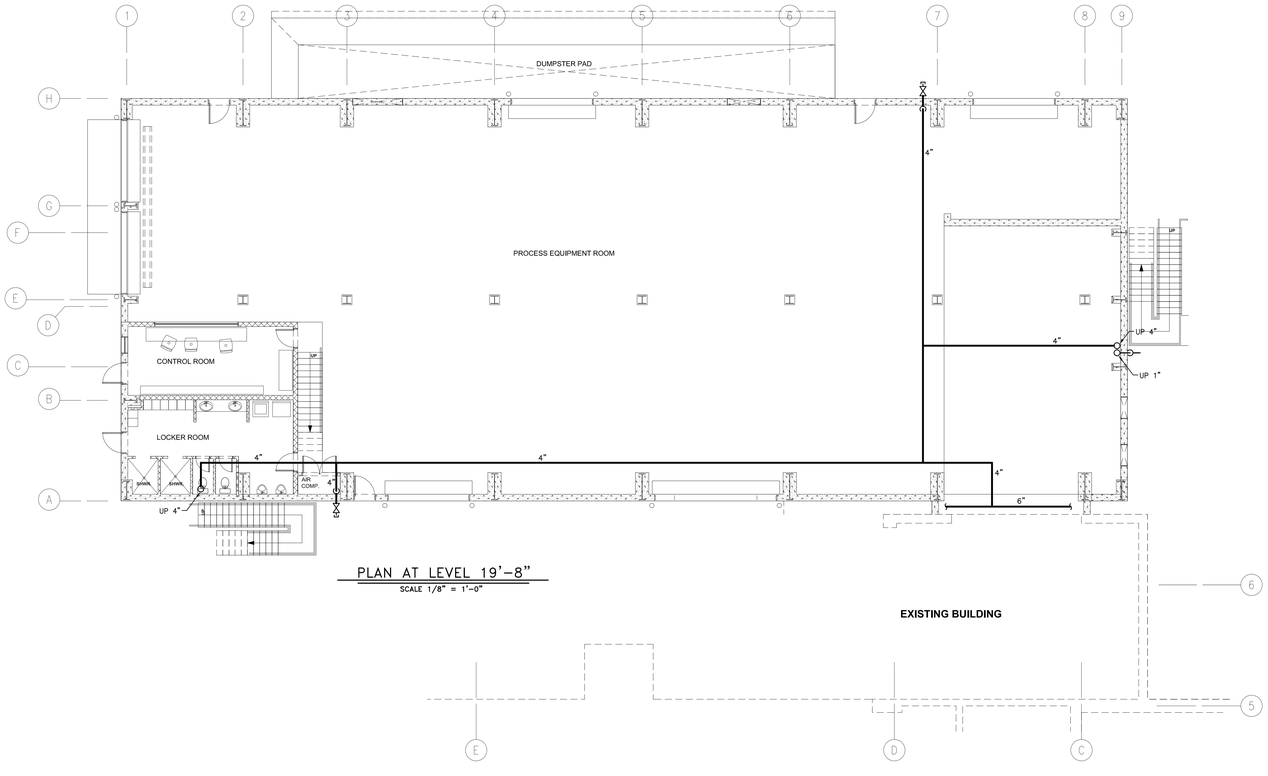
Sheet Title:
SPRINKLER SYSTEM FIRE PUMP ROOM

Revision: 5 | Sheet Number: **FP1-5**



PLAN AT LEVEL 58'–8"

SCALE 1/8" = 1'–0"



PLAN AT LEVEL 19'–8"

SCALE 1/8" = 1'–0"

DRAWING NOTES

1. PIPE DRAIN TO EXTERIOR OR SUITABLE FLOOR DRAIN.
2. BRANCH PIPING TO FOLLOW SLOPE OF CEILING IN THIS AREA.
3. NEW VALVE ROOM IN MAINTENANCE SHOP. VALVES FOR SPRINKLER ZONE # 1, 2, 3, 4, 5, AND 10. REFER TO NEW VALVE ROOM RISER SCHEMATIC.
4. EXISTING BRANCH PIPING TO REMAIN IN THIS AREA AND MAIN TO BE REPLACED. OPEN NOZZLES TO BE REPLACED WITH NEW UPRIGHT SPRINKLERS. NEW SPRINKLER HEADS ARE TO BE LOCATED WITHIN 12" OF THE CEILING.
5. EXISTING VALVE ROOM TO BE EQUIPPED WITH NEW DOOR AND NEW CEILING. VALVES FOR SPRINKLER ZONES #21, 22, AND 23 TO BE LOCATED IN THIS ROOM.
6. PROVIDE AND INSTALL SPRINKLER HEADS DIRECTLY ABOVE WINDOWS. SPRINKLER HEADS SHALL BE COMPLETE WITH WATERSHIELD/HEAD GUARD. PROVIDE 1 SPRINKLER PER PANE OF GLASS. ALLOW FOR A MINIMUM OF 6 SPRINKLERS.
7. LOCATE MAIN TIGHT TO WALL TO AVOID OBSTRUCTIONS AND PIT OPERATIONS.
8. PROVIDE A NORMALLY OPEN SUPERVISED CONTROL VALVE ON RISER. LOCATE IN ACCESSIBLE AREA.
9. LOCATE LOW POINT DRAIN TO ALLOW FOR HOSE OR PAIL TO BE CONNECTED FOR DRAINING SYSTEM.
10. EXISTING SPRINKLER HEADS AND ATTACHED 1" ELBOWS AND TEES ARE TO BE DEMOLISHED AND REPLACED WITH NEW. MAINTAIN EXISTING MAIN.
11. PROVIDE SPLASH GUARD AT 9'–0" ABOVE FLOOR OVER EQUIPMENT. MATCH EXISTING ADJACENT SPLASH GUARD MATERIAL AND HANGING ARRANGEMENT.
12. PROVIDE ADEQUATE PIPE SUPPORTS AND BRACING TO STEEL AND/OR CONCRETE STRUCTURE.
13. PROVIDE BOLLARD PROTECTION AROUND HOSE VALVES AND WATER MONITORS TO PROTECT FROM PLANT OPERATIONS.
14. CONNECT TO NEW 4" RISER AS SHOWN ON BURNER FRONT RISER SCHEMATIC. PROVIDE NEW DRAIN RISER AND DRAIN TO BOILER HOUSE GROUND LEVEL WHERE NOTED.
15. PROVIDE NEW CABINET c/w HOSE AT THIS LOCATION.
16. PROVIDE NEW HOSE VALVES ON EXISTING FIRE HYDRANT.
17. PROVIDE NEW HOSE FOR FIRE DEPARTMENT USE IN NEW EQUIPMENT CABINET. CUT ROCK AS REQUIRED FOR INSTALLATION OF CABINET.
18. PROVIDE WATERSHIELD/HEAD GUARD ON SPRINKLER HEADS.
19. DEMOLISH EXISTING DELUGE VALVE HEADER AND PROVIDE NEW CONTROL VALVE AND FLOW SWITCH ASSEMBLY FOR ZONE #9. REFER TO SECOND FLOOR STORAGE RISER SCHEMATIC.
20. PIPE ALL SYSTEM DRAINS FOR THE VALVE HEADERS IN THE MAINTENANCE SHOP AT THIS LOCATION.
21. PROVIDE STEEL SUPPORT BETWEEN EXISTING COLUMNS FOR SUPPORTING NEW BRANCH PIPING.
22. PROVIDE NEW FIRE DEPARTMENT CONNECTION AT THIS LOCATION. FIRE DEPARTMENT CONNECTION AND PIPING TO BE SECURED TO ADJACENT COLUMN. LOCATE BETWEEN 36" AND 48" ABOVE GRADE.
23. PROVIDE NEW BULKHEAD TO CONCEAL SPRINKLER SYSTEM MAIN. PAINT COLOUR TO MATCH ADJACENT WALLS.
24. PROVIDE SPRINKLER PROTECTION IN THIS ROOM. CONNECT TO MAINTENANCE SHOP SPRINKLER ZONE.
25. PROVIDE NEW NORMALLY OPEN SUPERVISED CONTROL VALVE ON EXISTING HOSE SUPPLY PIPING. VALVE TO BE IN ACCESSIBLE LOCATION.
26. PROVIDE NEW WALL HYDRANT c/w 2–2½" VALVES.
27. REFER TO WATER MONITOR SCHEMATIC FOR INSTALLATION DETAIL.
28. PROVIDE NEW 2½" HOSE VALVES AT EACH STAIR LANDING AND CONNECT TO NEW 4" RISER. ALLOW FOR 6 IN TOTAL.
29. PROVIDE STAND TO SUPPORT NEW HOSE CABINET. BOTTOM OF CABINET TO BE 36" ABOVE GRADE. STAND TO BE MOUNTED ON CONCRETE FOOTINGS.
30. ALL PIPING AND COMPONENTS IN TURBINE HALL SHALL BE COORDINATED TO AVOID EXISTING OVERHEAD CRANE.
31. PROVIDE NEW HOSE CABINET AT THIS LOCATION, c/w 2½", AND 1½" CONNECTION, HOSE AND NOZZLE. A NORMALLY OPEN SUIPERVISED CONTROL VALVE IS TO BE PROVIDED ON THE SUPPLY PIPING.

GENERAL NOTES:

1. INSTALL POKE UPS, SWING JOINTS AND DEEP CUP ESCUTCHEONS AS REQUIRED.
2. INSTALL HANGERS AND BRACING AS REQUIRED.

LEGEND

- STANDARD RESPONSE UPRIGHT SPRINKLER, 200°F, ½" ORIFICE, K = 8.0
- STANDARD RESPONSE UPRIGHT SPRINKLER, 286°F, ½" ORIFICE, K = 8.0
- QUICK RESPONSE SEMI–RECESSED PENDENT SPRINKLER, 155°F, ½" ORIFICE, K = 5.6
- QUICK RESPONSE SEMI–RECESSED PENDENT SPRINKLER, 286°F, ½" ORIFICE, K = 5.6
- QUICK RESPONSE DRY PENDENT SPRINKLER, 200°F, K = 5.6
- HIGH VELOCITY OPEN SPRAY NOZZLE, 3/8" ORIFICE, K = 1.6
- SPRINKLER HEAD GUARD
- PIPE DOWN
- RISER UP
- TEE DOWN
- PREACTION VALVE
- DELUGE VALVE
- CONTROL VALVE
- N.C. NORMALLY CLOSED CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
- N.O. NORMALLY OPEN CONTROL VALVE c/w SUPERVISED TAMPER SWITCH
- OS&Y GATE VALVE
- F FLOW SWITCH
- FLUSHING/CAPPED CONNECTION
- AUXILIARY DRAIN VALVE
- CHECK VALVE
- AS ALARM SWITCH
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- REMOTE INSPECTOR'S TEST CONNECTION
- HR HOSE REEL c/w 1–½" HOSE CONNECTION AND HOSE
- PAP PREACTION RELEASING PANEL (BY OTHERS)
- WM WATER MONITOR c/w PROTECTIVE COVER
- EC FIRE HYDRANT EQUIPMENT CABINET
- FP FIRE PUMP
- S STRAINER
- AC AIR COMPRESSOR
- AMD AIR MAINTENANCE DEVICE
- LAPS LOW AIR PRESSURE SWITCH
- PAP PREACTION PANEL
- FM FLOW METER
- RV RELIEF VALVE
- FPC FIRE PUMP CONTROLLER
- HC INTERIOR HOSE CABINET c/w 1½" HOSE AND 2½" HOSE VALVE
- INSPECTOR'S TEST CONNECTION
- 2½" HOSE VALVE

HAZARD TABLE

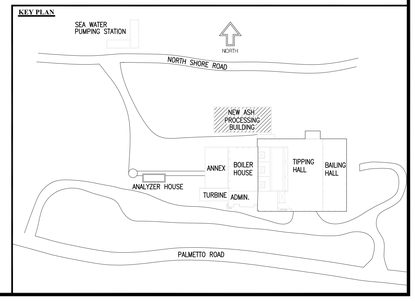
LOCATION	OCCUPANCY	DESIGN CRITERIA
MAIN BUILDING (ZONE 27)	LIGHT HAZARD (OFFICES, CORRIDORS, WASHROOMS)	0.10 USgpm/ft^2 OVER A MINIMUM OF 900ft^2 100 USgpm HOSE DEMAND
	ORDINARY HAZARD GROUP 1 (STORAGE, MECH./ELECT. ROOMS)	0.15 USgpm/ft^2 OVER A MINIMUM OF 900ft^2 250 USgpm HOSE DEMAND

PIPE SIZE TABLE

No. OF HEADS (BRANCH LINE)	PIPE SIZE	CROSSMAIN SIZE	FEED MAIN SIZE
1 & 2	1"	SEE DWG.	SEE DWG.
3	1¼"		
4	1½"		
REMAINDER	2"		

NOTES:
- PIPE SIZES ARE TO BE AS STATED ABOVE UNLESS NOTED OTHERWISE.
- RISER NIPPLES ARE TO FOLLOW SAME PIPE SIZE FORMAT AS BRANCH LINES.

KEY PLAN



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SCALE: *AS NOTED*

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Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
SPRINKLER SYSTEM
NEW ASH PROCESSING BUILDING

Revision: 5 Sheet Number: **FP1-6**

LEGEND

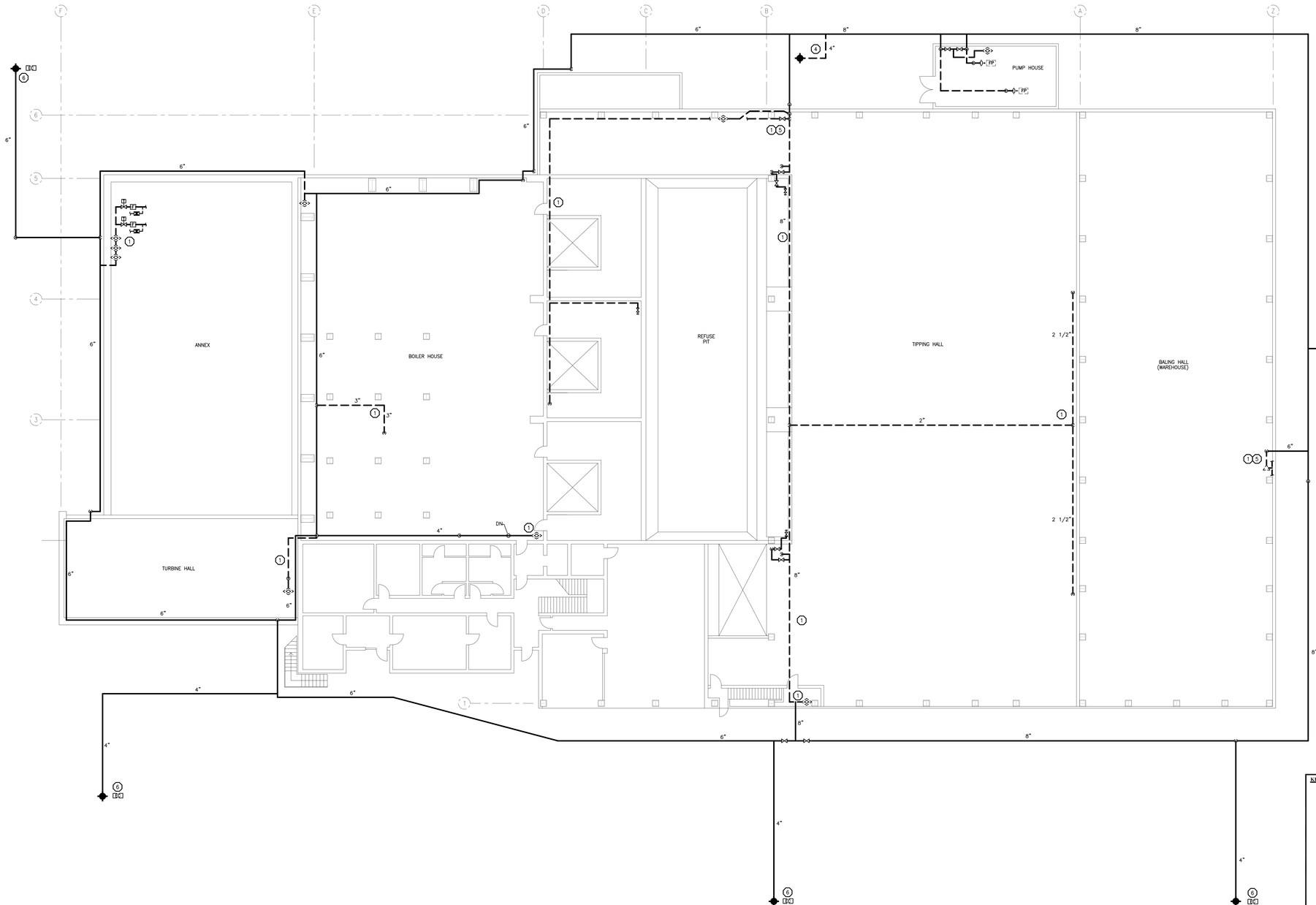
	PENDENT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	HIGH VELOCITY NOZZLE
	PIPE DOWN
	ALARM VALVE
	DELUGE VALVE
	CONTROL VALVE
	MONITOR STATION VALVE
	CONTROL VALVE c/w SUPERVISED SWITCH
	INSPECTORS TEST CONNECTION
FP	FIRE PUMP
EC	EQUIPMENT CABINET
HR	HOSE REELS
MS	MONITOR STATION
F	FLOW SWITCH
	FIRE DEPARTMENT CONNECTION
	HYDRANT
	REMOTE INSPECTOR'S TEST CONNECTION
	PIPE BREAK

DRAWING NOTES

1. DEMOLISH EXISTING SPRINKLER SYSTEM AND ALL ASSOCIATED COMPONENTS INCLUDING VALVES. DISPOSE OF ALL MATERIALS AS PER APPLICABLE REGULATIONS.
2. EXISTING SPRINKLER SYSTEM MAIN PIPING TO REMAIN. REFER TO INSTALLATION DRAWINGS.
3. PORTIONS OF THIS SYSTEM ARE TO REMAIN. REFER TO THE INSTALLATION DRAWINGS.
4. DEMOLISH EXISTING HYDRANT AND ASSOCIATED COMPONENTS. CAP PIPE UNDERGROUND.
5. CAP EXISTING WATER SUPPLY AT 1'-0" ABOVE FINISH FLOOR.
6. DEMOLISH EXISTING EQUIPMENT CABINET ENCLOSURE. DISPOSE OF MATERIAL AS PER APPLICABLE REGULATIONS.
7. REFER TO FP1-5 FOR FIRE PUMPS AND EQUIPMENT REPLACEMENT AND INSTALLATION.

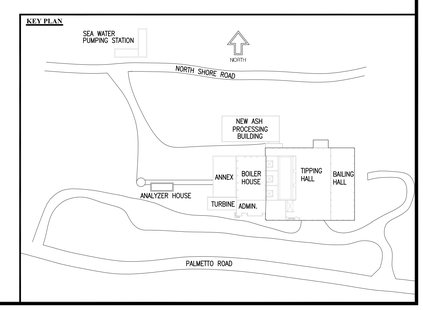
GENERAL NOTES:

1. PIPING AND COMPONENTS SHOWN IN DASHED LINETYPE IS TO BE DEMOLISHED.



SITE PLAN
SCALE 3/32" = 1'-0"

KEY PLAN



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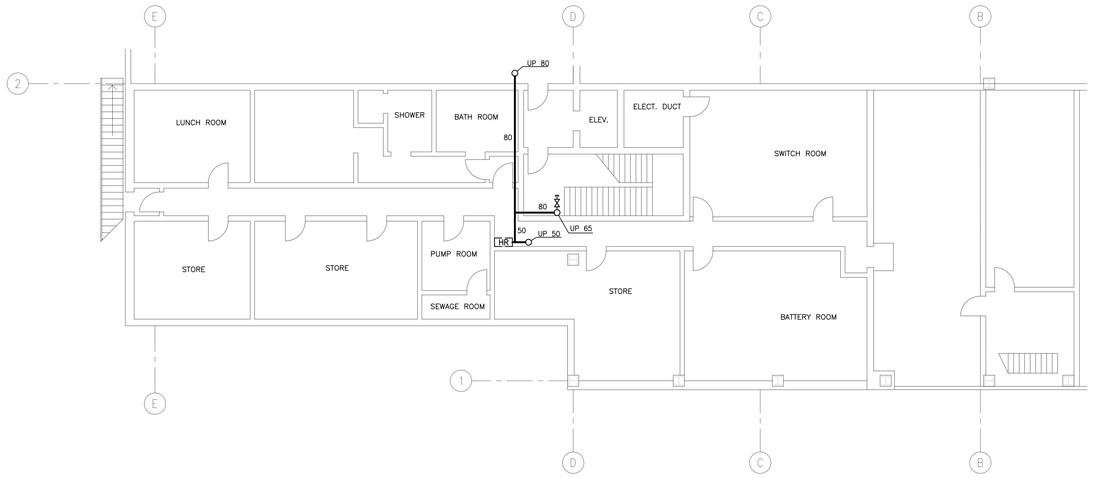
Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
SPRINKLER SYSTEM DEMOLITION SITE PLAN

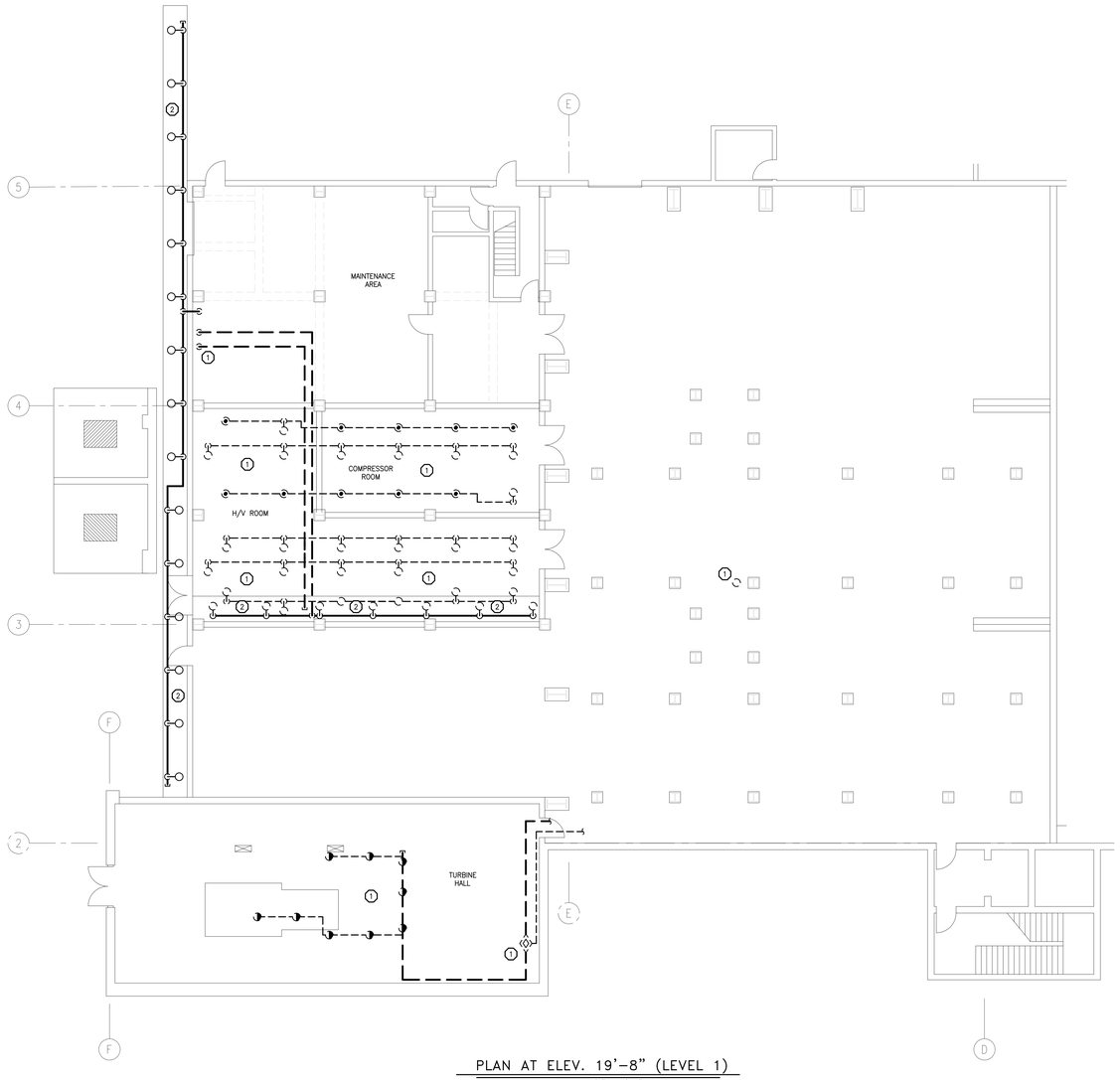
Revision: /4\

Sheet Number: **FP1-D1**



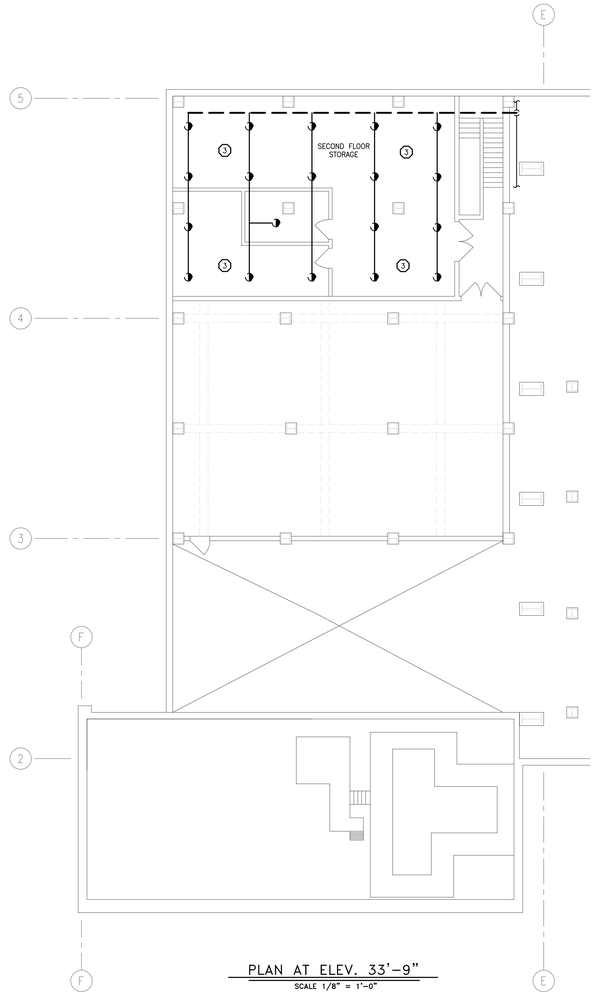
PLAN AT ELEV. 62'-4" (LEVEL 4)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 19'-8" (LEVEL 1)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 33'-9"

SCALE 1/8" = 1'-0"

LEGEND

	PENDENT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	HIGH VELOCITY NOZZLE
	PIPE DOWN
	ALARM VALVE
	DELUGE VALVE
	CONTROL VALVE
	MONITOR STATION VALVE
	CONTROL VALVE c/w SUPERVISED SWITCH
	INSPECTORS TEST CONNECTION
FP	FIRE PUMP
EC	EQUIPMENT CABINET
HR	HOSE REELS
MS	MONITOR STATION
F	FLOW SWITCH
	FIRE DEPARTMENT CONNECTION
	HYDRANT
	REMOTE INSPECTOR'S TEST CONNECTION
	PIPE BREAK

DRAWING NOTES

1. DEMOLISH EXISTING SPRINKLER SYSTEM AND ALL ASSOCIATED COMPONENTS INCLUDING VALVES. DISPOSE OF ALL MATERIALS AS PER APPLICABLE REGULATIONS.
2. EXISTING SPRINKLER SYSTEM MAIN PIPING TO REMAIN. REFER TO INSTALLATION DRAWINGS.
3. PORTIONS OF THIS SYSTEM ARE TO REMAIN. REFER TO THE INSTALLATION DRAWINGS.
4. DEMOLISH EXISTING HYDRANT AND ASSOCIATED COMPONENTS. CAP PIPE UNDERGROUND.
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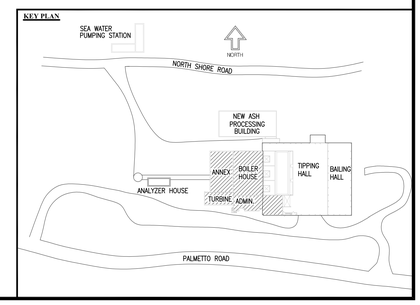
Project Number: 07031

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
SPRINKLER SYSTEM DEMOLITION ADMINISTRATION BUILDING

KEY PLAN



Revision: 4

Sheet Number: FP1-D2

LEGEND

	PENDENT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	HIGH VELOCITY NOZZLE
	PIPE DOWN
	ALARM VALVE
	DELUGE VALVE
	CONTROL VALVE
	MONITOR STATION VALVE
	CONTROL VALVE c/w SUPERVISED SWITCH
	INSPECTORS TEST CONNECTION
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	PIPE BREAK

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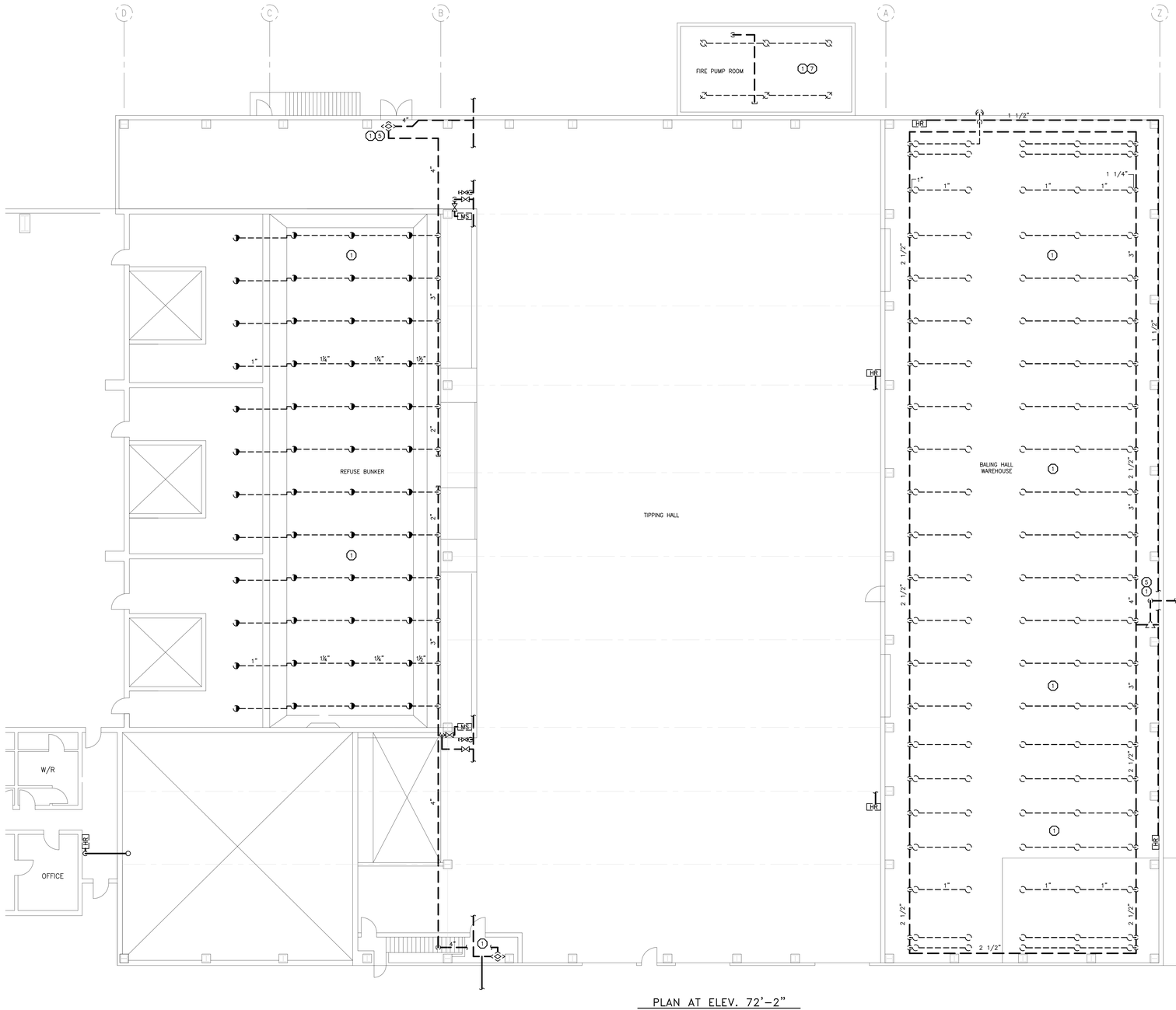
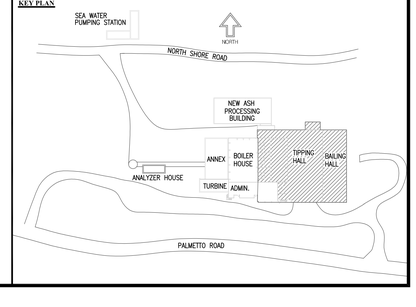


PLAN AT ELEV. 72'-2"
SCALE 1/8" = 1'-0"

KEY PLAN



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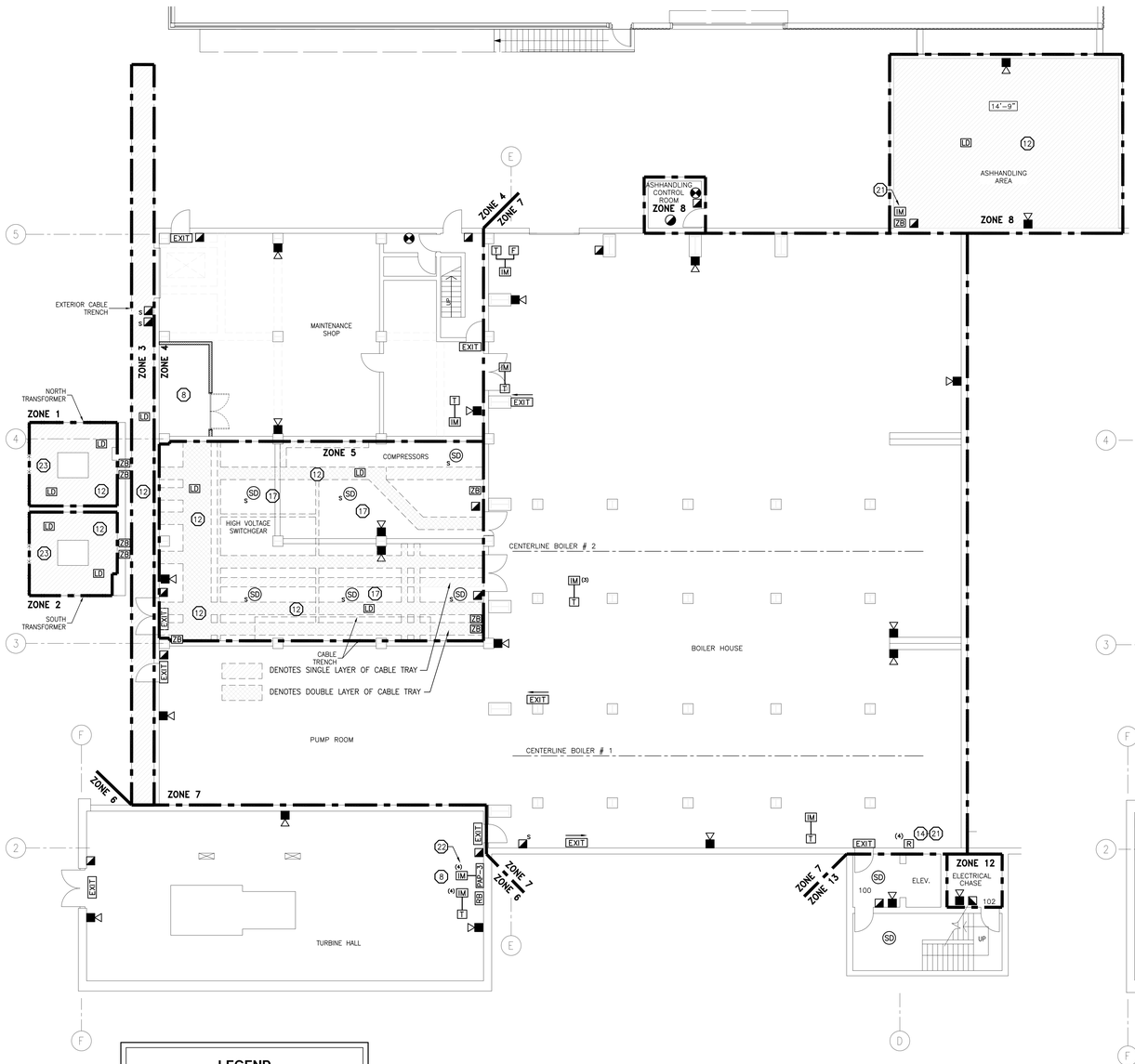
Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
SPRINKLER SYSTEM DEMOLITION ANNEX BUILDING AND BOILER HOUSE

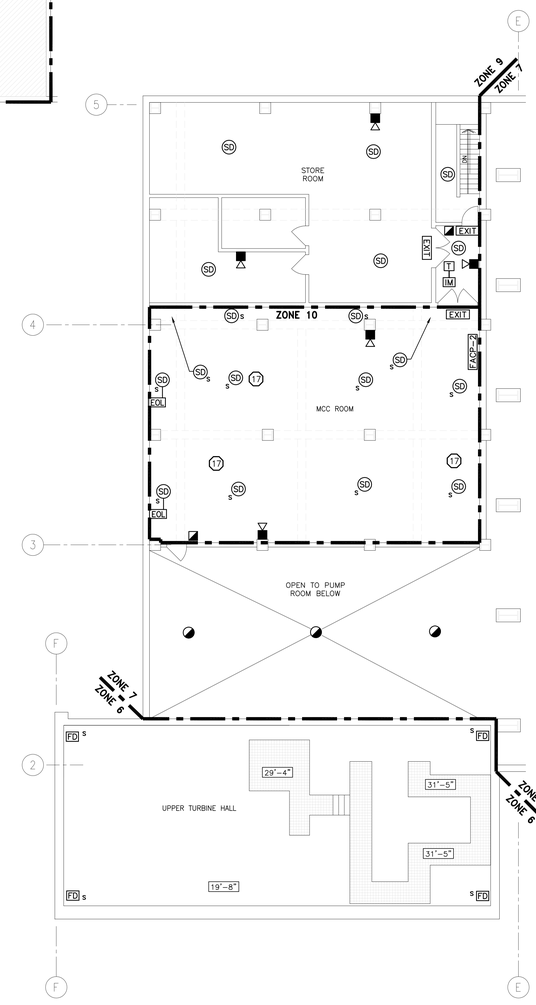
Revision: 4

Sheet Number: **FP1-D3**



PLAN AT ELEV. 19'-8" (LEVEL 1)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 33'-9"

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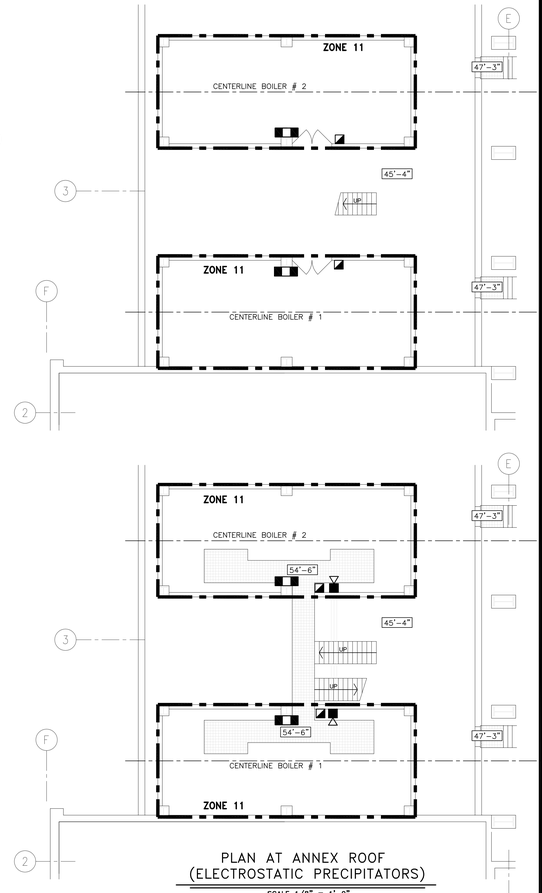

PLAN AT ANNEX ROOF (ELECTROSTATIC PRECIPITATORS)

SCALE 1/8" = 1'-0"

LEGEND

SD	SMOKE DETECTOR
FD	FLAME DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
	HORN/STROBE
	STROBE
EXIT	EXIT SIGN
EXIT	DIRECTIONAL EXIT SIGN
	EMERGENCY LIGHTING
FAA	FIRE ALARM ANNUNCIATOR
FACP-1	FIRE ALARM CONTROL PANEL (#)
PAP-1	PREACTION SYSTEM RELEASING PANEL (#)
SCP	SUPPRESSION CONTROL PANEL (BY OTHERS)
EOL	END OF LINE RESISTOR
EOLR	LINEAR DETECTION END OF LINE RESISTOR WITH TEST BUTTON
IM	INTERFACE MODULE
AS	ALARM SWITCH
F	SPRINKLER SYSTEM FLOW SWITCH
T	SPRINKLER SYSTEM TAMPER SWITCH
R	RELAY
LAPS	LOW AIR PRESSURE SWITCH
LD	LINEAR DETECTION
ZB	LINEAR DETECTION ZONE BOX
PR	PRINTER
DIA	DIALER
FIM	FAULT ISOLATION MODULE
AGD	ACTIVE GRAPHIC DISPLAY
RB	NEMA 4 RELAY/MODULE BOX ENCLOSURE
WC	EXISTING FIRE PROTECTION WATER SUPPLY CONTROLS
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
   - s DEVICE CONNECTED TO SUPPRESSION SYSTEM
   - (3) DEVICE QUANTITY

DRAWING NOTES

1. PEER TO PEER CLASS "A" CONNECTION: #18 AWG TWISTED/SHIELDED FIRE PROTECTED (2 HOUR RATED) CONDUCTORS.
2. DATA COMMUNICATION LOOP: CLASS "A" #18 AWG TWISTED/SHIELDED CONDUCTORS.
3. AUDIBLE SIGNAL CIRCUIT LOOP: CLASS "B" #14 AWG TWISTED/SHIELDED CONDUCTORS.
4. VISUAL SIGNAL CIRCUIT LOOP: CLASS "B" #14 AWG TWISTED/SHIELDED CONDUCTORS.
5. REFER TO CLEAN AGENT SUPPRESSION SYSTEM DRAWING FP2-7 FOR RELEASING PANEL, ADDITIONAL SUPPRESSION AND DETECTION DEVICES IN CONTROL ROOM 515 (ZONE 19).
6. ADDITIONAL FAULT ISOLATOR MODULES TO BE INSTALLED TO SUIT CONDUCTOR ROUTING.
7. LOCATE MODULE AT SPRINKLER ZONE 9 VALVE ASSEMBLY LOCATED IN BOILER HOUSE (REFER TO DRAWING FP2-1).
8. REFER TO VALVE ROOM 1 ENLARGEMENT ON THIS DRAWING AND/OR RISER SCHEMATIC ON DRAWING FP2-6 FOR ADDITIONAL DEVICES CONNECTED TO THE PREACTION RELEASING PANEL.
9. CONNECT ALL FLAME DETECTOR AIR SHIELD DEVICES TO AIR COMPRESSOR AT THIS LOCATION.
10. LOCATE PEER-TO-PEER CONNECTION IN NEW TUNNEL AND IN SEPARATE CONDUIT.
11. PROVIDE RELAYS FOR POWER SHUTDOWN OF TRANSFORMERS AT ALARM. RELAYS SHALL BE PROGRAMMED TO SHUT DOWN POWER TO BOTH TRANSFORMERS UPON FIRST LINEAR DETECTION ALARM. THIS CONTRACTOR SHALL INCLUDE ALL MATERIALS REQUIRED FOR THE TRANSFORMER SHUTDOWN. THIS WORK SHALL BE COORDINATED WITH THE OWNER.
12. HATCHING DENOTES AREA OF LINEAR DETECTION.
13. CONTRACTOR SHALL MAINTAIN THE EXISTING WATER SUPPLY CONTROLS. THESE EXISTING WATER SUPPLY CONTROLS SHALL BE MONITORED BY THE NEW FIRE ALARM SYSTEM. LOCATE ALL MODULES IN NEW FIRE ALARM TUB.
14. CONTRACTOR SHALL INCLUDE FOR FOUR (4) RELAYS AND ALL OTHER REQUIRED MATERIALS FOR FAN SHUTDOWN. EACH FAN SHALL SHUTDOWN ONLY WHEN A FIRE CONDITION IS DETECTED IN THE ASSOCIATED FAN'S SUPPLY/RETURN AREA.
15. RELEASING PANEL TROUBLE
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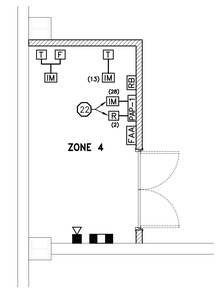
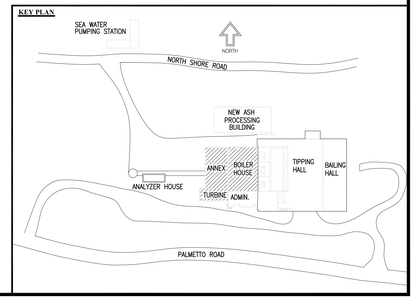
17. ALL SMOKE DETECTORS IN THIS ZONE SHALL BE CONVENTIONAL TYPE AND SHALL BE WIRED IN TWO SEPARATE CIRCUITS FOR CROSS-ZONING.
18. NUMBER OF CONDUCTORS AND MODULES TO BE CONFIRMED BY CONTRACTOR. EACH INDIVIDUAL ALARM, SUPERVISORY, AND TROUBLE CONDITION ARE TO BE MONITORED INDIVIDUALLY ON THE PLANT FIRE ALARM SYSTEM.
19. CLEAN AGENT SUPPRESSION CONTROL PANEL FOR CONTROL ROOM SYSTEM ZONE #19. REFER TO DRAWING FP3-1 FOR SYSTEM SCHEMATIC.
20. EACH RELEASING PANEL SHALL BE COMPLETE WITH LED DISPLAY FOR EACH INDIVIDUAL ALARM AND SUPERVISORY CONDITION.
21. LOCATE IN NEMA 4 ENCLOSURE
22. LOCATE RELAYS/MODULES IN NEMA 4 ENCLOSURE.
23. THE LINEAR DETECTION FOR THE TRANSFORMERS SHALL BE ATTACHED TO THE SPRINKLER SYSTEM PIPING.



VALVE ROOM 1 ENLARGEMENT

SCALE 1/4" = 1'-0"



MINISTRY OF WORKS AND ENGINEERING

DEPARTMENT OF OPERATIONS AND ENGINEERING

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REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
#M4754
Ian C. MacDonald
SIGNATURE
2010-01-15
DATE
Province du Nouveau - Brunswick
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THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

CONSULTANT

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1	-	-
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3	ISSUED FOR FINAL REVIEW	08/02/29
2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: AM/HR Date: -
Checked By: AM Date: -

DRAWING
Prepared By: HR Date: -
Checked By: IM Date: -

Approved By: -

Project Number: **07031**

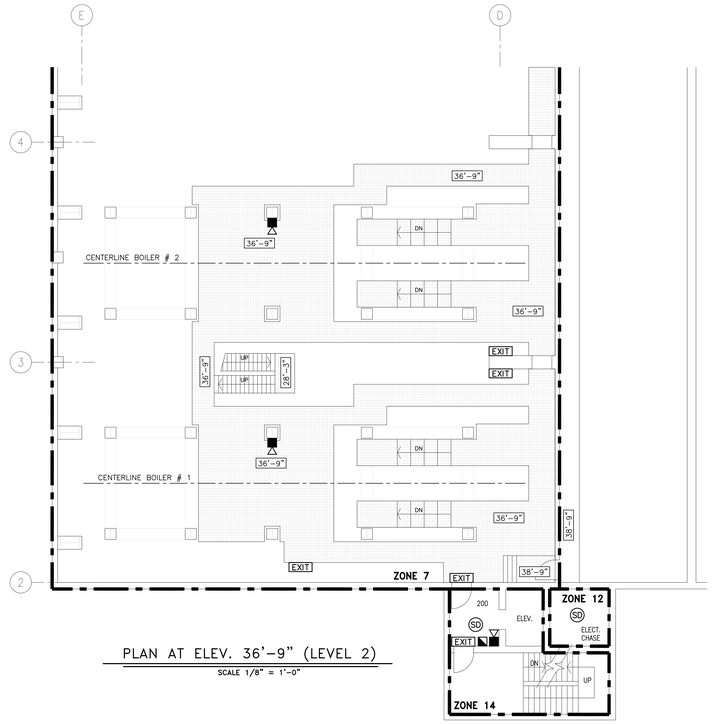
Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

Sheet Title:
FIRE ALARM SYSTEM ANNEX BUILDING, TURBINE HALL AND BOILER HOUSE

Revision: 5 | Sheet Number: **FP2-1**

PLAN AT ELEV. 26'-3"

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 36'-9" (LEVEL 2)

SCALE 1/8" = 1'-0"

LEGEND

SD	SMOKE DETECTOR
FD	FLAME DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
	HORN/STROBE
	STROBE
EXIT	EXIT SIGN
EXIT	DIRECTIONAL EXIT SIGN
	EMERGENCY LIGHTING
FAA	FIRE ALARM ANNUNCIATOR
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FIM	FAULT ISOLATION MODULE
AGD	ACTIVE GRAPHIC DISPLAY
RB	NEMA 4 RELAY/MODULE BOX ENCLOSURE
WC	EXISTING FIRE PROTECTION WATER SUPPLY CONTROLS
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
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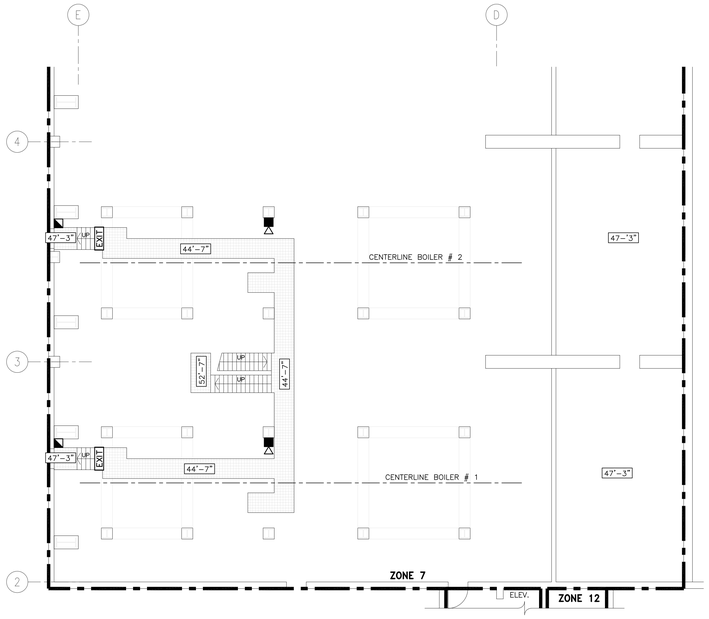
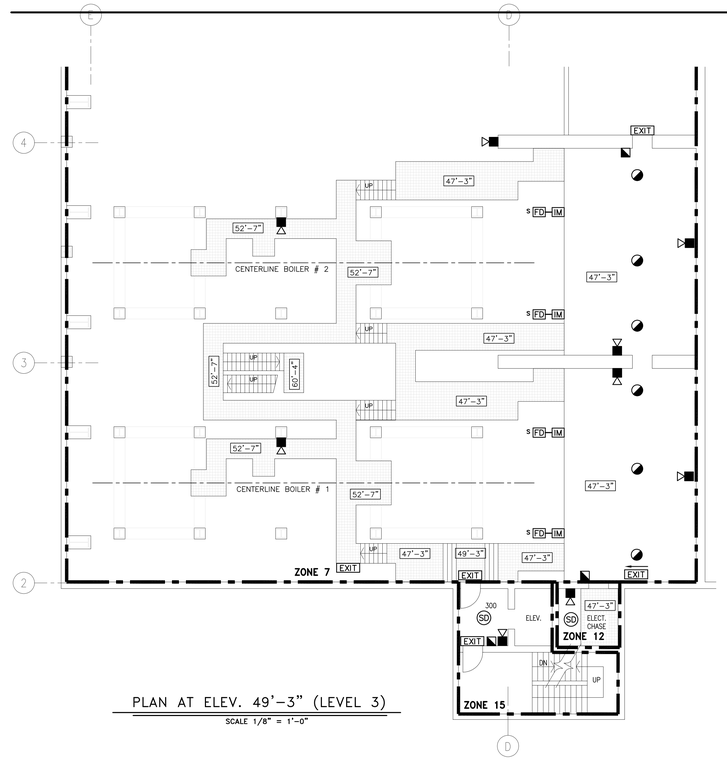
   - (3) DEVICE QUANTITY



PLAN AT ELEV. 44'-7"

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 49'-3" (LEVEL 3)

SCALE 1/8" = 1'-0"

DRAWING NOTES

1. PEER TO PEER CLASS "A" CONNECTION: #18 AWG TWISTED/ SHIELDED FIRE PROTECTED (2 HOUR RATED) CONDUCTORS.
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16. RELAY FOR ELEVATOR HOMING.
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21. LOCATE IN NEMA 4 ENCLOSURE
22. LOCATE RELAYS/MODULES IN NEMA 4 ENCLOSURE.
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SCALE: *AS NOTED*

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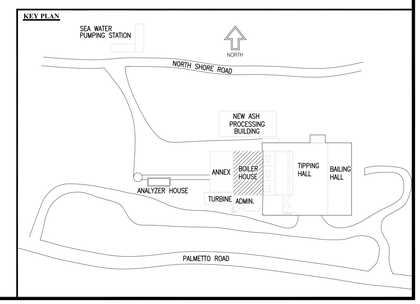
Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
FIRE ALARM SYSTEM BOILER HOUSE

KEY PLAN

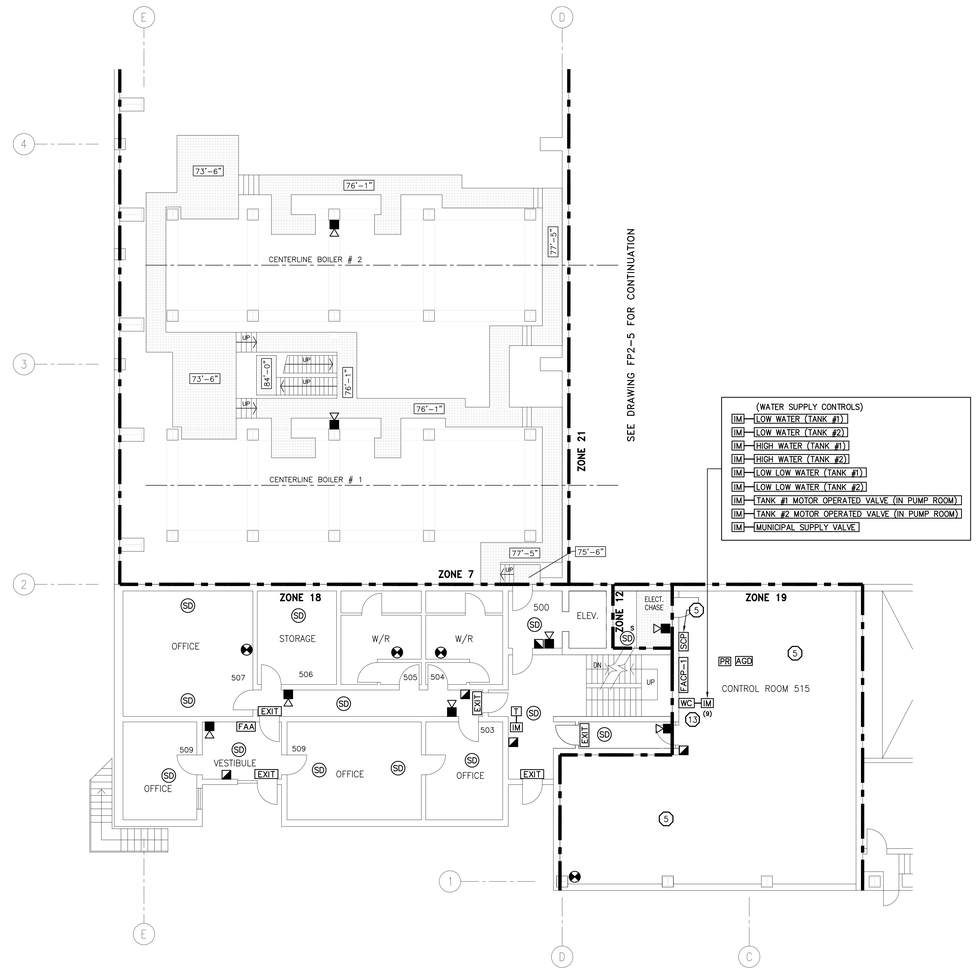


Revision: 5

Sheet Number: **FP2-2**

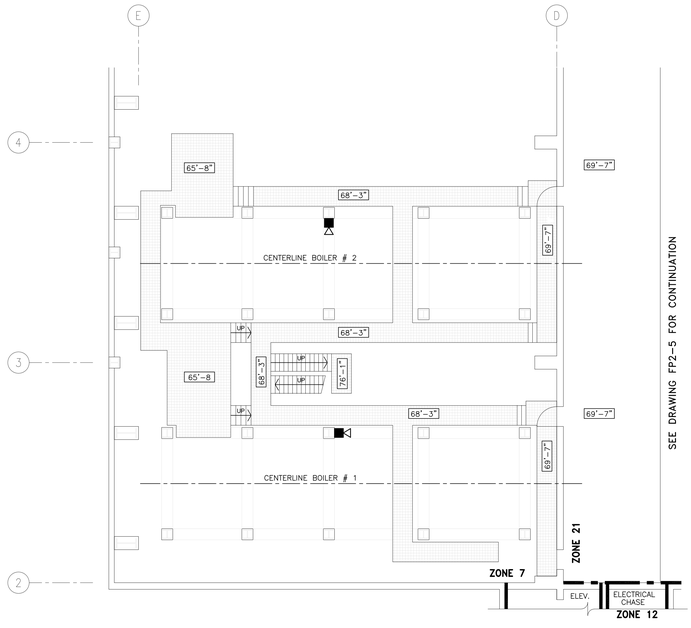
PLAN AT ELEV. 62'-4" (LEVEL 4)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 75'-6" (LEVEL 5)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 68'-3"

SCALE 1/8" = 1'-0"

LEGEND

SD	SMOKE DETECTOR
FD	FLAME DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
	HORN/STROBE
	STROBE
EXIT	EXIT SIGN
EXIT	DIRECTIONAL EXIT SIGN
	EMERGENCY LIGHTING
FAA	FIRE ALARM ANNUNCIATOR
FACP-1	FIRE ALARM CONTROL PANEL (#)
PAP-1	PREACTION SYSTEM RELEASING PANEL (#)
SCP	SUPPRESSION CONTROL PANEL (BY OTHERS)
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LD	LINEAR DETECTION
ZB	LINEAR DETECTION ZONE BOX
PR	PRINTER
DIA	DIALER
FIM	FAULT ISOLATION MODULE
AGD	ACTIVE GRAPHIC DISPLAY
RB	NEMA 4 RELAY/MODULE BOX ENCLOSURE
WC	EXISTING FIRE PROTECTION WATER SUPPLY CONTROLS
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
   - S DEVICE CONNECTED TO SUPPRESSION SYSTEM
   - (X) DEVICE QUANTITY

DRAWING NOTES

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6. ADDITIONAL FAULT ISOLATOR MODULES TO BE INSTALLED TO SUIT CONDUCTOR ROUTING.
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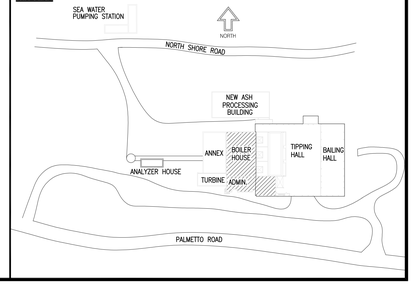
KEY PLAN



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SCALE: AS NOTED

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Approved By: -

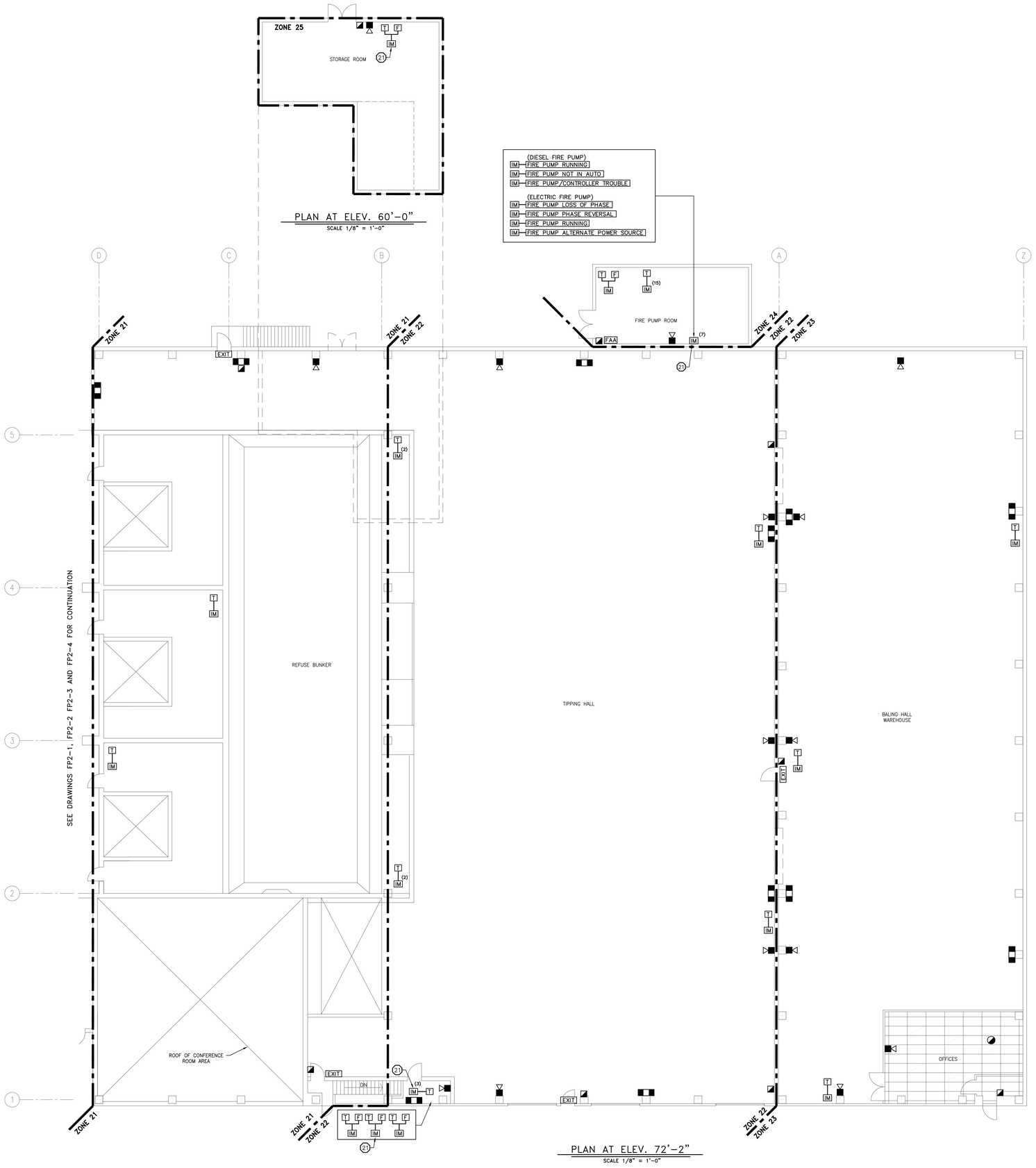
Project Number: 07031

Project Title: TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

Sheet Title: FIRE ALARM SYSTEM BOILER HOUSE AND ADMINISTRATION BUILDING

Revision: 5

Sheet Number: FP2-3



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LEGEND

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	HORN/STROBE
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AGD	ACTIVE GRAPHIC DISPLAY
RB	NEMA 4 RELAY/MODULE BOX ENCLOSURE
WC	EXISTING FIRE PROTECTION WATER SUPPLY CONTROLS
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
   - S DEVICE CONNECTED TO SUPPRESSION SYSTEM
   - (3) DEVICE QUANTITY

MINISTRY OF WORKS AND ENGINEERING

DEPARTMENT OF OPERATIONS AND ENGINEERING

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THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

CONSULTANT

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1	-	-
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3	ISSUED FOR FINAL REVIEW	08/02/29
2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: — Date: -

DESIGN
Prepared By: AM/HR — Date: -
Checked By: AM — Date: -

DRAWING
Prepared By: HR — Date: -
Checked By: IM — Date: -

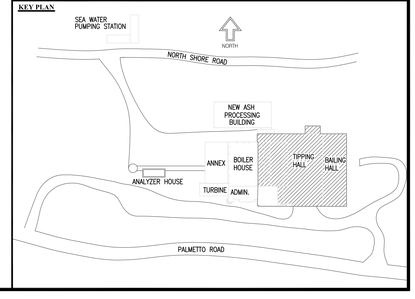
Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

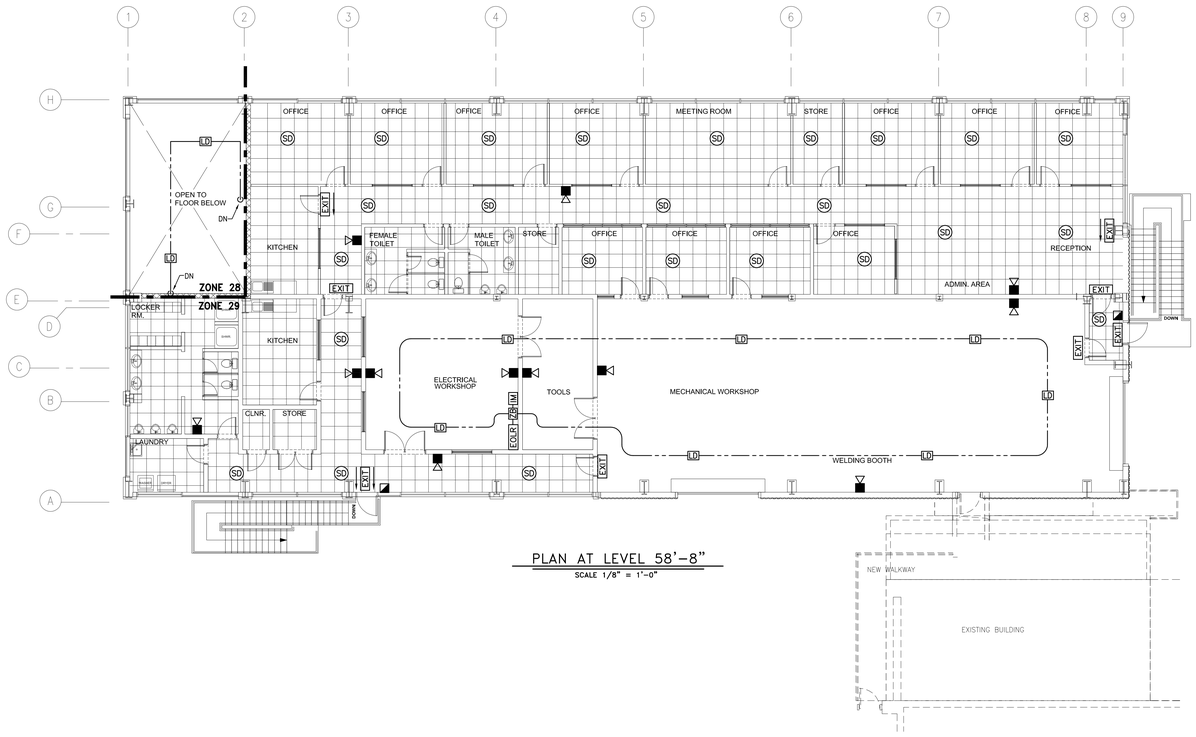
Sheet Title:
FIRE ALARM SYSTEM BAILING HALL, TIPPING HALL AND FIRE PUMP ROOM

KEY PLAN



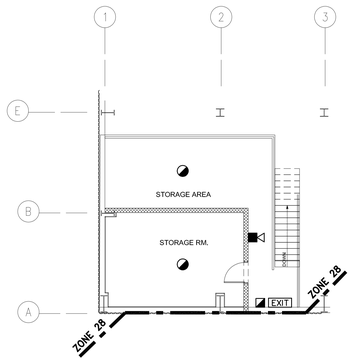
Revision: 5

Sheet Number: **FP2-5**



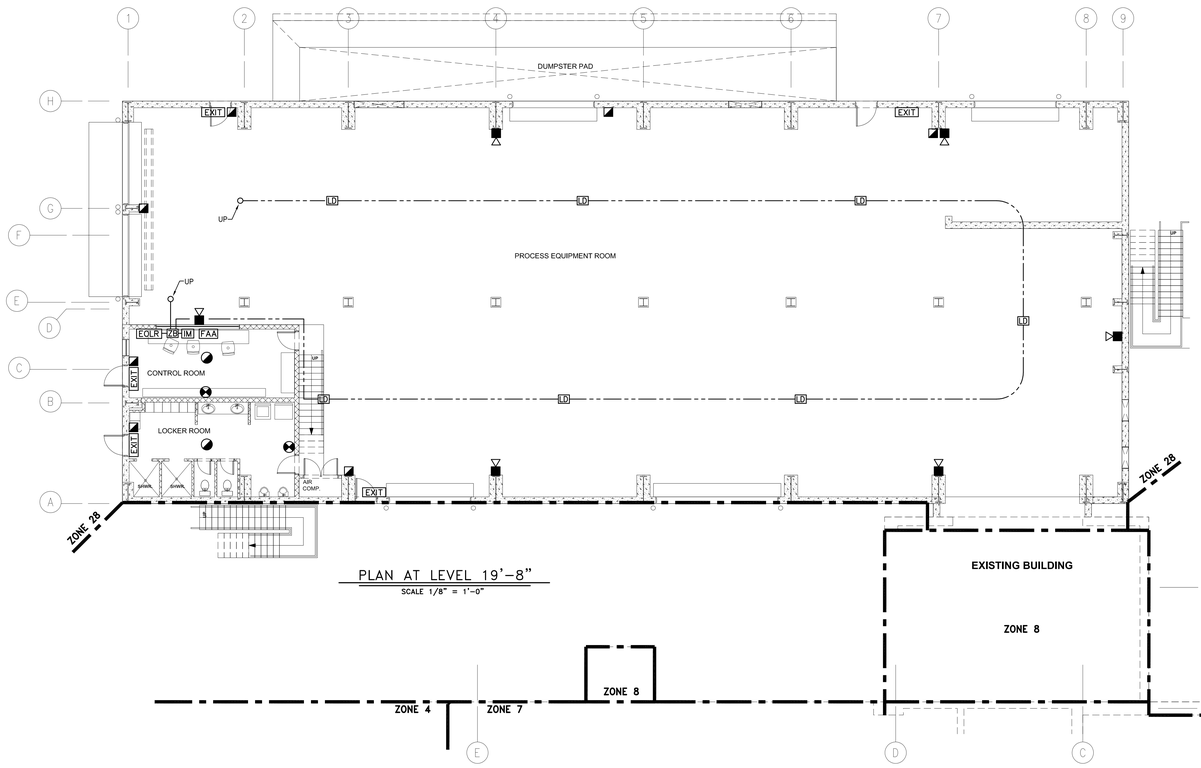
PLAN AT LEVEL 58'-8"

SCALE 1/8" = 1'-0"



PLAN AT LEVEL 30'-2"

SCALE 1/8" = 1'-0"



PLAN AT LEVEL 19'-8"

SCALE 1/8" = 1'-0"

DRAWING NOTES

1. PEER TO PEER CLASS "A" CONNECTION: #18 AWG TWISTED/SHIELDED FIRE PROTECTED (2 HOUR RATED) CONDUCTORS.
2. DATA COMMUNICATION LOOP: CLASS "A" #18 AWG TWISTED/SHIELDED CONDUCTORS.
3. AUDIBLE SIGNAL CIRCUIT LOOP: CLASS "B" #14 AWG TWISTED/SHIELDED CONDUCTORS.
4. VISUAL SIGNAL CIRCUIT LOOP: CLASS "B" #14 AWG TWISTED/SHIELDED CONDUCTORS.
5. REFER TO CLEAN AGENT SUPPRESSION SYSTEM DRAWING FP2-7 FOR RELEASING PANEL, ADDITIONAL SUPPRESSION AND DETECTION DEVICES IN CONTROL ROOM 515 (ZONE 19).
6. ADDITIONAL FAULT ISOLATOR MODULES TO BE INSTALLED TO SUIT CONDUCTOR ROUTING.
7. LOCATE MODULE AT SPRINKLER ZONE 9 VALVE ASSEMBLY LOCATED IN BOILER HOUSE (REFER TO DRAWING FP2-1).
8. REFER TO VALVE ROOM 1 ENLARGEMENT ON THIS DRAWING AND/OR RISER SCHEMATIC ON DRAWING FP2-6 FOR ADDITIONAL DEVICES CONNECTED TO THE PREACTION RELEASING PANEL.
9. CONNECT ALL FLAME DETECTOR AIR SHIELD DEVICES TO AIR COMPRESSOR AT THIS LOCATION.
10. LOCATE PEER-TO-PEER CONNECTION IN NEW TUNNEL AND IN SEPARATE CONDUIT.
11. PROVIDE RELAYS FOR POWER SHUTDOWN OF TRANSFORMERS AT ALARM. RELAYS SHALL BE PROGRAMMED TO SHUT DOWN POWER TO BOTH TRANSFORMERS UPON FIRST LINEAR DETECTION ALARM. THIS CONTRACTOR SHALL INCLUDE ALL MATERIALS REQUIRED FOR THE TRANSFORMER SHUTDOWN. THIS WORK SHALL BE COORDINATED WITH THE OWNER.
12. HATCHING DENOTES AREA OF LINEAR DETECTION.
13. CONTRACTOR SHALL MAINTAIN THE EXISTING WATER SUPPLY CONTROLS. THESE EXISTING WATER SUPPLY CONTROLS SHALL BE MONITORED BY THE NEW FIRE ALARM SYSTEM. LOCATE ALL MODULES IN NEW FIRE ALARM TUB.
14. CONTRACTOR SHALL INCLUDE FOR FOUR (4) RELAYS AND ALL OTHER REQUIRED MATERIALS FOR FAN SHUTDOWN. EACH FAN SHALL SHUTDOWN ONLY WHEN A FIRE CONDITION IS DETECTED IN THE ASSOCIATED FAN'S SUPPLY/RETURN AREA.
15. RELEASING PANEL TROUBLE
16. RELAY FOR ELEVATOR HOMING.
17. ALL SMOKE DETECTORS IN THIS ZONE SHALL BE CONVENTIONAL TYPE AND SHALL BE WIRED IN TWO SEPARATE CIRCUITS FOR CROSS-ZONING.
18. NUMBER OF CONDUCTORS AND MODULES TO BE CONFIRMED BY CONTRACTOR. EACH INDIVIDUAL ALARM, SUPERVISORY, AND TROUBLE CONDITION ARE TO BE MONITORED INDIVIDUALLY ON THE PLANT FIRE ALARM SYSTEM.
19. CLEAN AGENT SUPPRESSION CONTROL PANEL FOR CONTROL ROOM SYSTEM ZONE #19. REFER TO DRAWING FP3-1 FOR SYSTEM SCHEMATIC.
20. EACH RELEASING PANEL SHALL BE COMPLETE WITH LED DISPLAY FOR EACH INDIVIDUAL ALARM AND SUPERVISORY CONDITION.
21. LOCATE IN NEMA 4 ENCLOSURE
22. LOCATE RELAYS/MODULES IN NEMA 4 ENCLOSURE.
23. THE LINEAR DETECTION FOR THE TRANSFORMERS SHALL BE ATTACHED TO THE SPRINKLER SYSTEM PIPING.

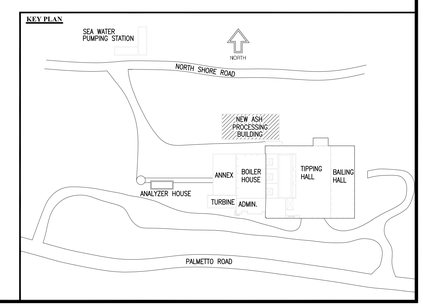
LEGEND

SD	SMOKE DETECTOR
FD	FLAME DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
	HORN/STROBE
	STROBE
EXIT	EXIT SIGN
EXIT	DIRECTIONAL EXIT SIGN
	EMERGENCY LIGHTING
FAA	FIRE ALARM ANNUNCIATOR
FACP-1	FIRE ALARM CONTROL PANEL (#)
PAP-1	PREACTION SYSTEM RELEASING PANEL (#)
SCP	SUPPRESSION CONTROL PANEL (BY OTHERS)
EOL	END OF LINE RESISTOR
EOLR	LINEAR DETECTION END OF LINE RESISTOR WITH TEST BUTTON
IM	INTERFACE MODULE
AS	ALARM SWITCH
F	SPRINKLER SYSTEM FLOW SWITCH
T	SPRINKLER SYSTEM TAMPER SWITCH
R	RELAY
LAPS	LOW AIR PRESSURE SWITCH
LD	LINEAR DETECTION
ZB	LINEAR DETECTION ZONE BOX
PR	PRINTER
DIA	DIALER
FIM	FAULT ISOLATION MODULE
AGD	ACTIVE GRAPHIC DISPLAY
RB	NEMA 4 RELAY/MODULE BOX ENCLOSURE
WC	EXISTING FIRE PROTECTION WATER SUPPLY CONTROLS
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
   - S DEVICE CONNECTED TO SUPPRESSION SYSTEM
   - (3) DEVICE QUANTITY

KEY PLAN



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SCALE: *AS NOTED*

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Prepared By: - Date: -

DESIGN
Prepared By: AM/IR Date: -
Checked By: AM Date: -

DRAWING
Prepared By: HR Date: -
Checked By: IM Date: -

Approved By: -

Project Number: **07031**

Project Title: **TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE**

Sheet Title: **FIRE ALARM SYSTEM NEW ASH PROCESSING BUILDING**

Revision: 3 | Sheet Number: **FP2-6**

DRAWING NOTES

1. PEER TO PEER CLASS "A" CONNECTION: #18 AWG TWISTED/SHIELDED FIRE PROTECTED (2 HOUR RATED) CONDUCTORS.
2. DATA COMMUNICATION LOOP: CLASS "A" #16 AWG TWISTED/SHIELDED CONDUCTORS.
3. AUDIBLE SIGNAL CIRCUIT LOOP: CLASS "B" #14 AWG TWISTED/SHIELDED CONDUCTORS.
4. VISUAL SIGNAL CIRCUIT LOOP: CLASS "B" #14 AWG TWISTED/SHIELDED CONDUCTORS.
5. REFER TO CLEAN AGENT SUPPRESSION SYSTEM DRAWING FP2-7 FOR RELEASING PANEL, ADDITIONAL SUPPRESSION AND DETECTION DEVICES IN CONTROL ROOM 515 (ZONE 19).
6. ADDITIONAL FAULT ISOLATOR MODULES TO BE INSTALLED TO SUIT CONDUCTOR ROUTING.
7. LOCATE MODULE AT SPRINKLER ZONE 9 VALVE ASSEMBLY LOCATED IN BOILER HOUSE (REFER TO DRAWING FP2-1).
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22. LOCATE RELAYS/MODULES IN NEMA 4 ENCLOSURE.
23. THE LINEAR DETECTION FOR THE TRANSFORMERS SHALL BE ATTACHED TO THE SPRINKLER SYSTEM PIPING.

LEGEND

SD	SMOKE DETECTOR
FD	FLAME DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
	HORN/STROBE
	STROBE
EXIT	EXIT SIGN
EXIT	DIRECTIONAL EXIT SIGN
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FAA	FIRE ALARM ANNUNCIATOR
FACP-1	FIRE ALARM CONTROL PANEL (#)
PAP-1	PREACTION SYSTEM RELEASING PANEL (#)
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IM	INTERFACE MODULE
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LAPS	LOW AIR PRESSURE SWITCH
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ZB	LINEAR DETECTION ZONE BOX
PR	PRINTER
DIA	DIALER
FIM	FAULT ISOLATION MODULE
AGD	ACTIVE GRAPHIC DISPLAY
RB	NEMA 4 RELAY/MODULE BOX ENCLOSURE
WC	EXISTING FIRE PROTECTION WATER SUPPLY CONTROLS
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
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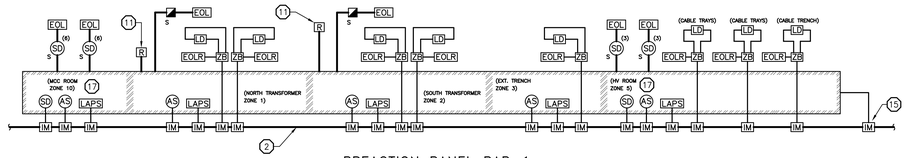
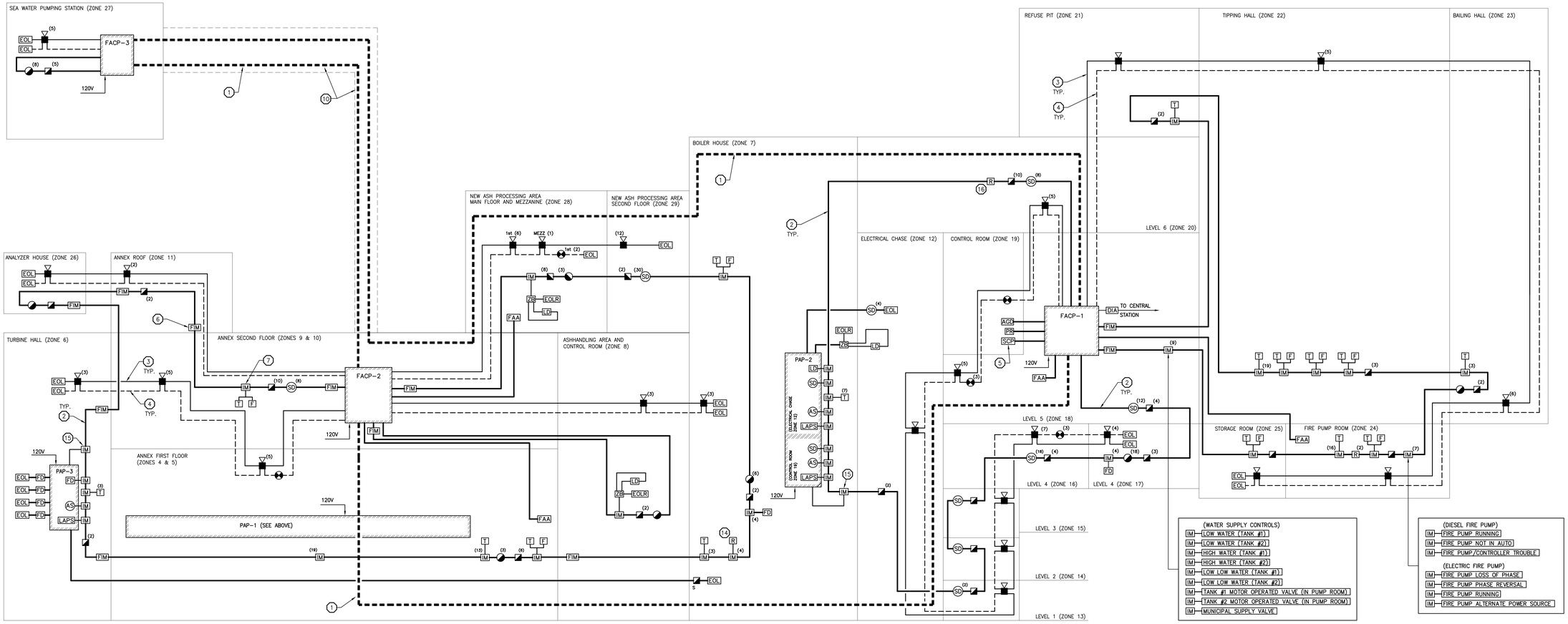
   - (3) DEVICE QUANTITY



PREACTION PANEL PAP-1
NOT TO SCALE



RISER SCHEMATICS
NOT TO SCALE

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2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: AM/HR Date: -
Checked By: AM Date: -

DRAWING
Prepared By: HR Date: -
Checked By: IM Date: -

Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

Sheet Title:
FIRE ALARM SYSTEM RISER SCHEMATIC

Revision: 5 | Sheet Number: **FP2-7**

DRAWING NOTES

1. PEER TO PEER CLASS "A" CONNECTION: #18 AWG TWISTED/SHIELDED FIRE PROTECTED (2 HOUR RATED) CONDUCTORS.
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22. LOCATE RELAYS/MODULES IN NEMA 4 ENCLOSURE.
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LEGEND

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FD	FLAME DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
	HORN/STROBE
	STROBE
EXIT	EXIT SIGN
EXIT	DIRECTIONAL EXIT SIGN
	EMERGENCY LIGHTING
FAA	FIRE ALARM ANNUNCIATOR
FACP-1	FIRE ALARM CONTROL PANEL (#)
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SCP	SUPPRESSION CONTROL PANEL (BY OTHERS)
EOL	END OF LINE RESISTOR
EOLR	LINEAR DETECTION END OF LINE RESISTOR WITH TEST BUTTON
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AS	ALARM SWITCH
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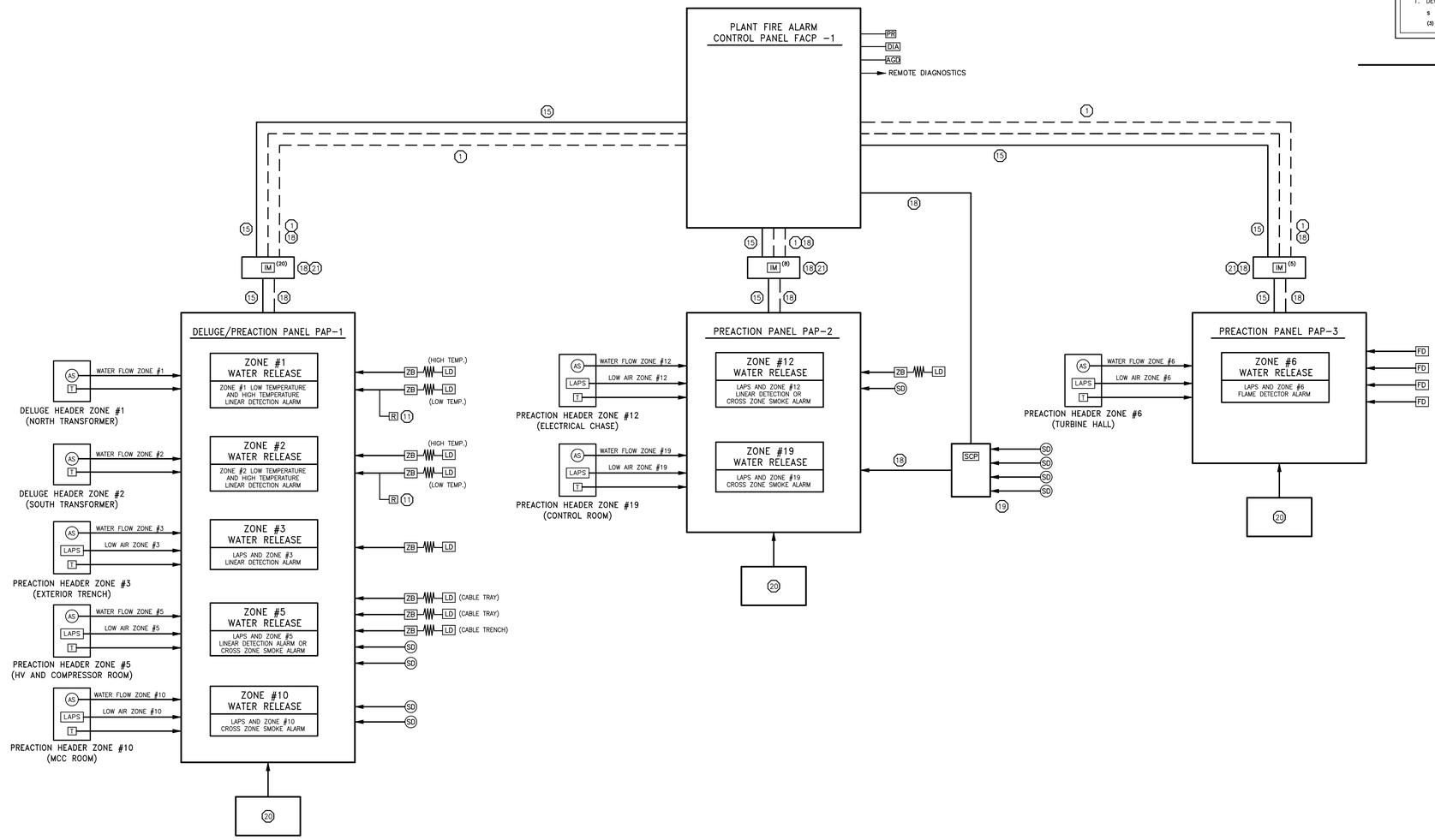
R	RELAY
LAPS	LOW AIR PRESSURE SWITCH
LD	LINEAR DETECTION
ZB	LINEAR DETECTION ZONE BOX
PR	PRINTER
DIA	DIALER
FIM	FAULT ISOLATION MODULE
AGD	ACTIVE GRAPHIC DISPLAY
RB	NEMA 4 RELAY/MODULE BOX ENCLOSURE
WC	EXISTING FIRE PROTECTION WATER SUPPLY CONTROLS
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
   - s DEVICE CONNECTED TO SUPPRESSION SYSTEM
   - (x) DEVICE QUANTITY



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1	ISSUED FOR 99% REVIEW	08/01/04

SCALE: *NOT TO SCALE*

SURVEY
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Approved By: -

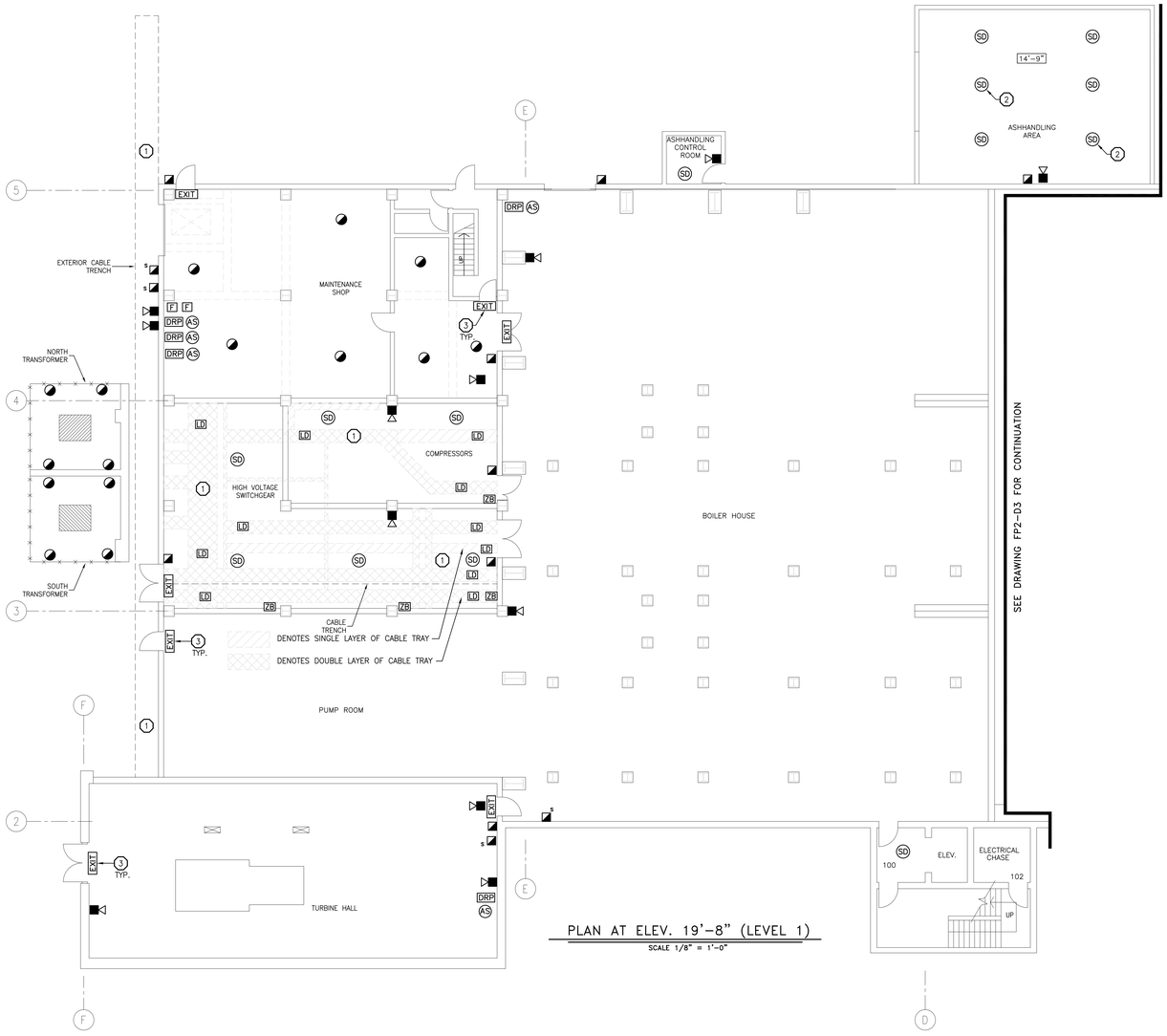
Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

Sheet Title:
FIRE ALARM SYSTEM RELEASING PANELS WIRING SCHEMATIC

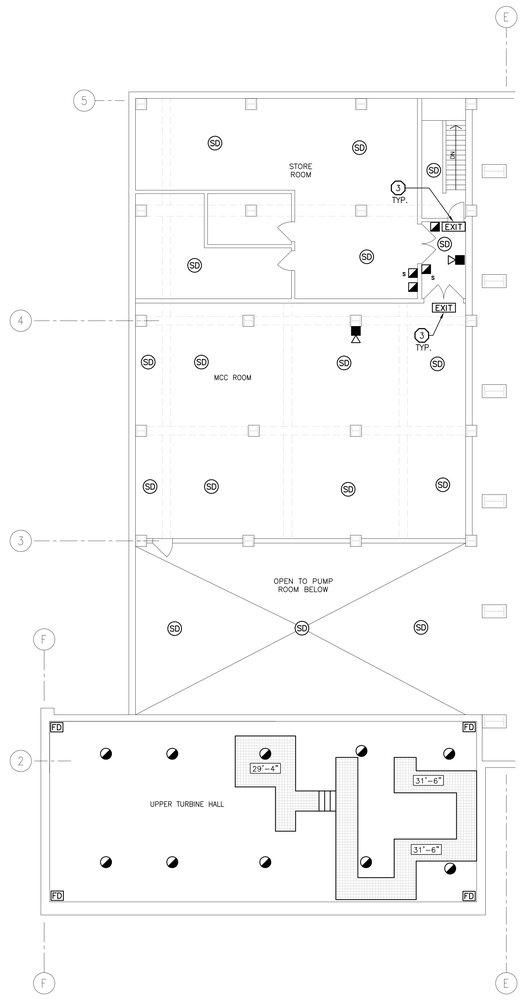
Revision: 4

Sheet Number: **FP2-8**



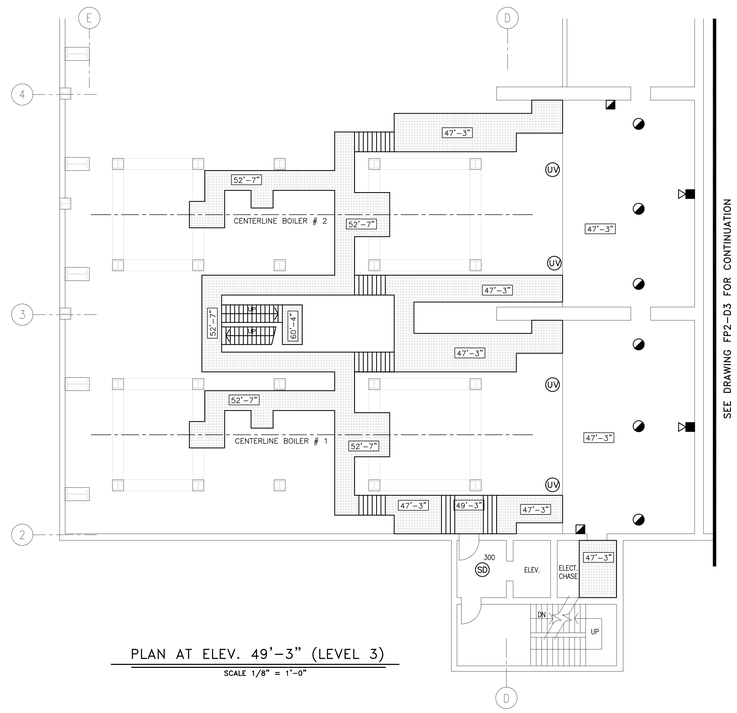
PLAN AT ELEV. 19'-8" (LEVEL 1)

SCALE 1/8" = 1'-0"



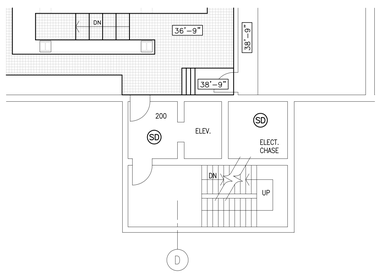
PLAN AT ELEV. 33'-9"

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 49'-3" (LEVEL 3)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 36'-9" (LEVEL 2)

SCALE 1/8" = 1'-0"

LEGEND

SD	SMOKE DETECTOR
SD	BELOW FLOOR SMOKE DETECTOR
FD	FLAME DETECTOR
UV	ULTRA VIOLET DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
	HORN
	HORN/STROBE
	BELL
EXIT	EXIT SIGN
	EMERGENCY LIGHTING
FACP	FIRE ALARM CONTROL PANEL
DRP	DELUGE SYSTEM RELEASING PANEL
EOL	END OF LINE RESISTOR
AS	ALARM SWITCH
F	SPRINKLER SYSTEM FLOW SWITCH
T	SPRINKLER SYSTEM TAMPER SWITCH
R	RELAY
FPC	FIRE PUMP CONTROLLER
JPC	JOCKEY PUMP CONTROLLER
LAPS	LOW AIR PRESSURE SWITCH
ZB	ZONE BOX
LD	LINEAR DETECTION
26'-3"	FLOOR/GRATING ELEVATION

LEGEND NOTE:

1. DEVICES WITH SUBSCRIPTS ARE AS FOLLOWS:
   - s DEVICE CONNECTED TO SUPPRESSION SYSTEM
2. ALL DEVICES SHOWN ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED.

DRAWING NOTES

1. REMOVE ALL LINEAR DETECTION INCLUDING ZONE BOXES ON ALL LEVELS OF CABLE TRAYS AND TRENCHES.
2. DETECTORS INSTALLED TO UNDERSIDE OF STRUCTURE AT APPROX. ELEVATION 37'-9".
3. REMOVE ALL EXIT SIGNS, INCLUDING EXISTING WIRING AND CONDUIT. THESE EXISTING SIGNS SHALL BE REMOVED WHEN DURING THE INSTALLATION OF THE NEW EXIT SIGNS.

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#M4754
Ian C. MacDonald
SIGNATURE
2010-01-15
DATE
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2	ISSUED FOR 99% REVIEW	08/01/04
1	ISSUED FOR 75% REVIEW	07/11/22

SCALE: *AS NOTED*

SURVEY
Prepared By: - Date: -

DESIGN
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Checked By: AM Date: -

DRAWING
Prepared By: HR Date: -
Checked By: IM Date: -

Approved By: -

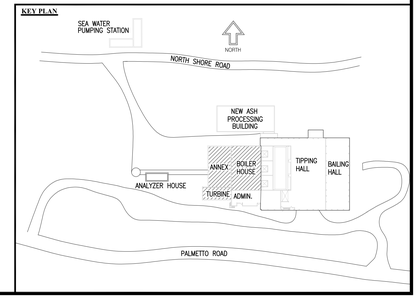
Project Number: **07031**

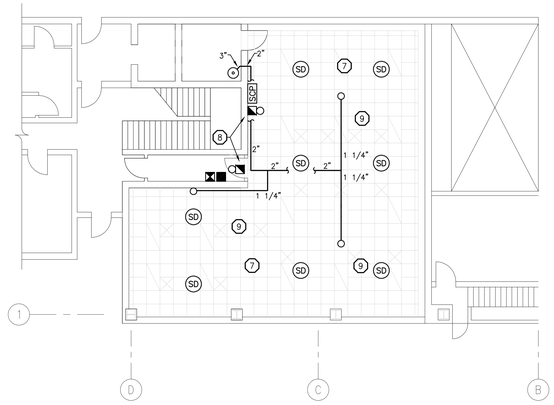
Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-
-

Sheet Title:
FIRE ALARM SYSTEM DEMOLITION ANNEX BUILDING, TURBINE HALL AND BOILER HOUSE

Revision: 5 | Sheet Number: **FP2-D1**

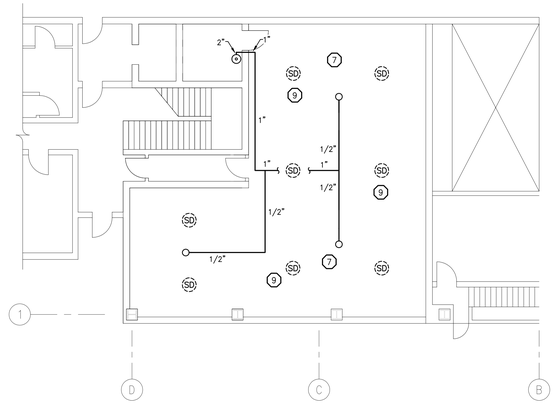
KEY PLAN





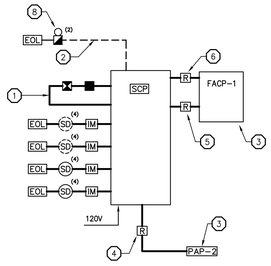
CONTROL ROOM 515 (ZONE 19) – CEILING PROTECTION

SCALE 1/8" = 1'-0"



CONTROL ROOM 515 (ZONE 19) – BELOW FLOOR PROTECTION

SCALE 1/8" = 1'-0"



RISER SCHEMATIC

NOT TO SCALE

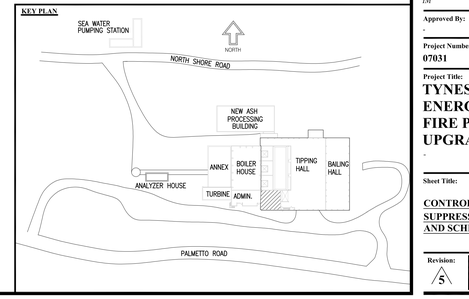
LEGEND

SD	CONVENTIONAL SMOKE DETECTOR
SD	BELOW FLOOR CONVENTIONAL SMOKE DETECTOR
	4" BELL
	ABORT STATION
	RELEASE STATION
R	RELAY
SCP	CLEAN AGENT SUPPRESSION CONTROL PANEL
FACP-1	FIRE ALARM CONTROL PANEL (BY OTHERS)
PAP-2	PREACTION SYSTEM RELEASING PANEL (BY OTHERS)
EOL	END OF LINE RESISTOR
IM	ISOLATION MODULE
	NOZZLE
	SAPPHIRE CLEAN AGENT STORAGE TANKS

DRAWING NOTES

1. DATA COMMUNICATION LOOP: CLASS "A" #18 AWG TWISTED/ SHIELDED CONDUCTORS.
2. AUDIBLE SIGNAL CIRCUIT LOOP: CLASS "B" #14 AWG TWISTED/ SHIELDED CONDUCTORS.
3. REFER TO SEPARATE SPRINKLER AND FIRE ALARM SYSTEM DRAWINGS FOR FIRE ALARM CONTROL PANEL AND PREACTION RELEASING PANELS.
4. A CROSS ZONED SMOKE DETECTION ALARM CONDITION SHALL ENERGIZE THE SOLENOID ON THE PREACTION SPRINKLER SYSTEM PROTECTING THE CONTROL ROOM.
5. ACTIVATION OF A SMOKE DETECTOR SHALL BE COMMUNICATED TO THE PLANT FIRE ALARM SYSTEM. THIS SHALL BE AN ALARM CONDITION.
6. CLEAN AGENT DISCHARGE SHALL BE COMMUNICATED TO THE PLANT FIRE ALARM SYSTEM.
7. DEMOLISH EXISTING CLEAN AGENT SYSTEM AND ASSOCIATED COMPONENTS INCLUDING STORAGE TANKS. DISPOSE OF ALL MATERIALS AS PER THE APPLICABLE REGULATIONS.
8. THESE HORN DEVICES ARE TO ACTIVATE UPON CROSS ZONE SMOKE DETECTOR ACTIVATION ONLY. THE HORNS ARE INTENDED TO PROVIDE NOTIFICATION OF THE 30 SECOND CLEAN AGENT DISCHARGE DELAY SEQUENCE.
9. ALL SMOKE DETECTORS IN THIS ZONE SHALL BE CONVENTIONAL TYPE AND SHALL BE WIRED IN TWO SEPARATE CIRCUITS FOR CROSS-ZONING.

KEY PLAN



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SCALE: *AS NOTED*

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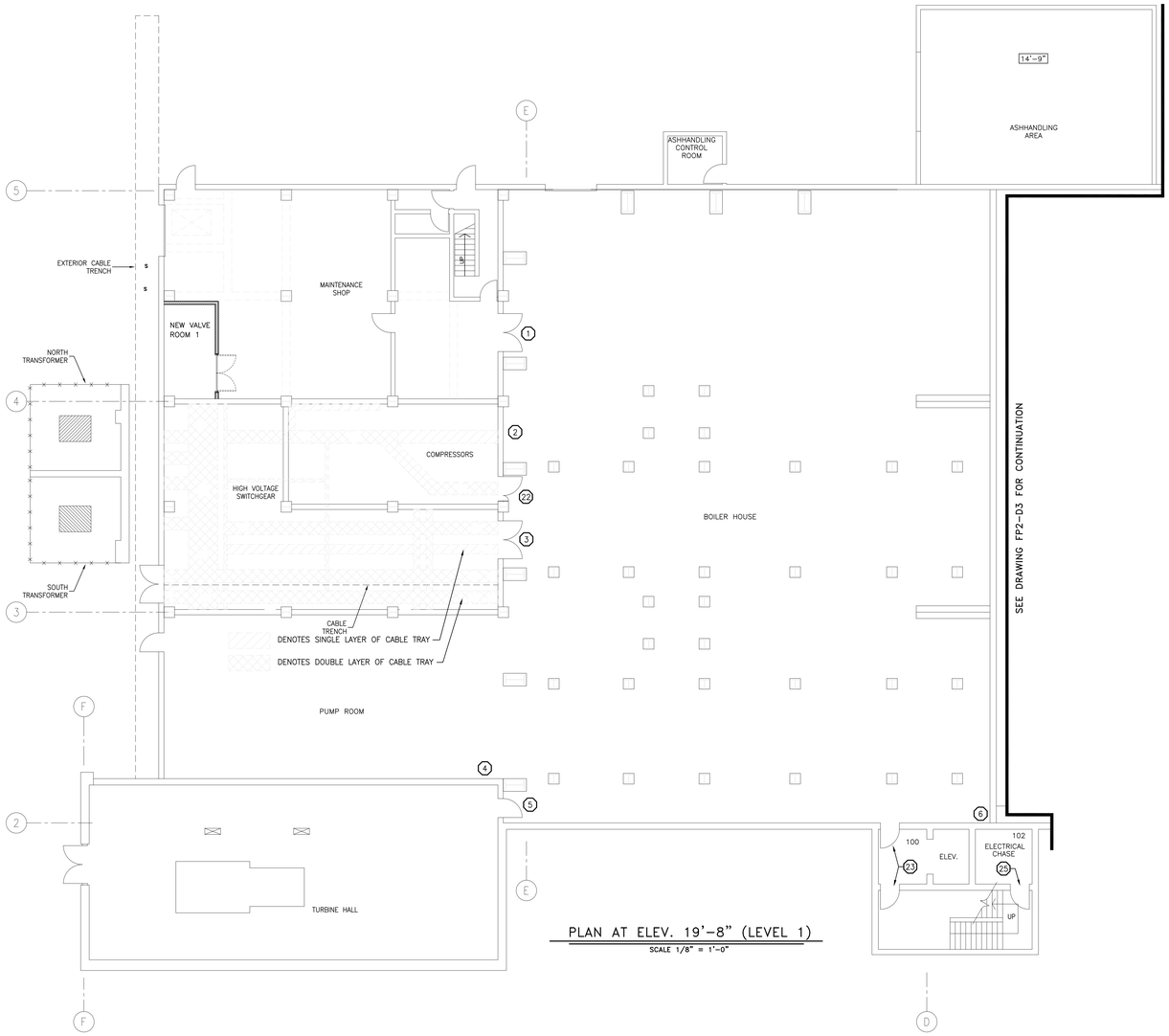
Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE
-

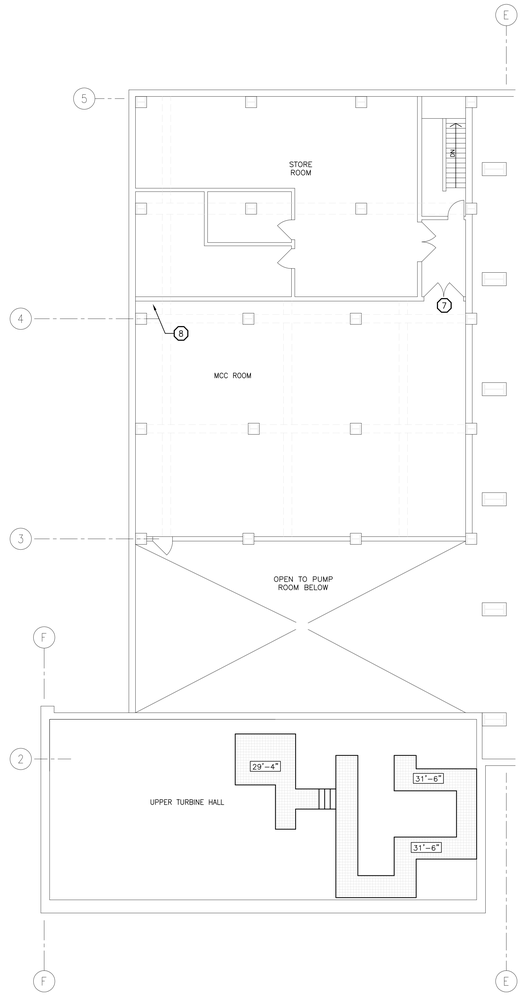
Sheet Title:
CONTROL ROOM CLEAN AGENT SUPPRESSION SYSTEM, PLANS AND SCHEMATIC

Revision: 5 | Sheet Number: **FP3-1**



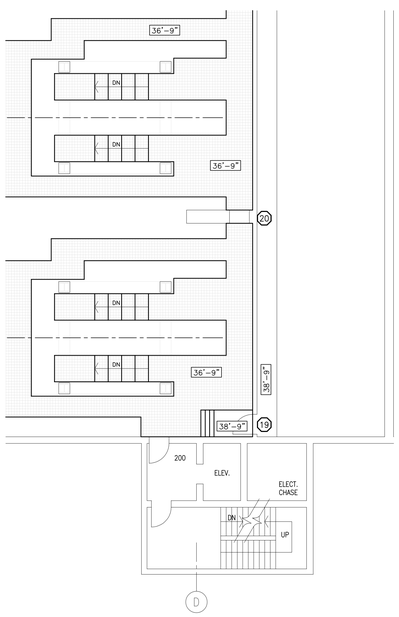
PLAN AT ELEV. 19'-8" (LEVEL 1)

SCALE 1/8" = 1'-0"



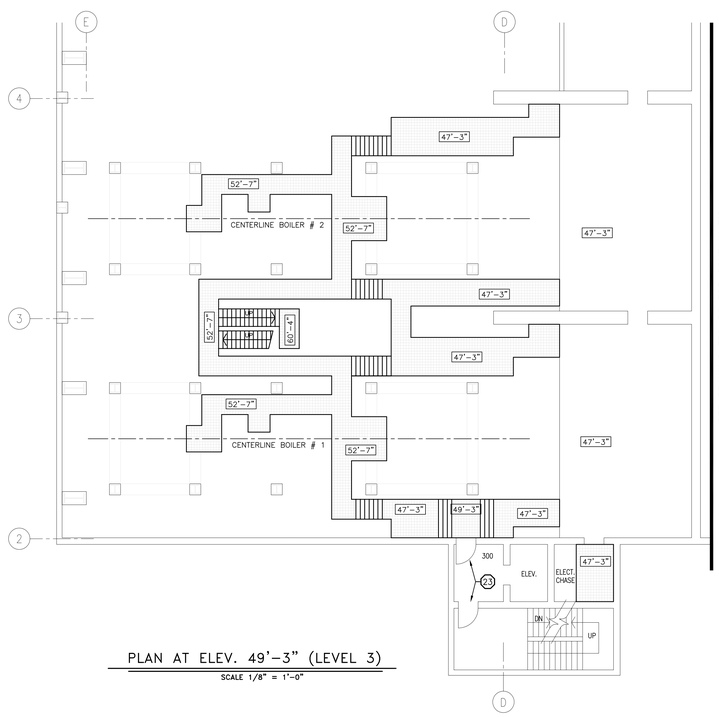
PLAN AT ELEV. 33'-9"

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 36'-9" (LEVEL 2)

SCALE 1/8" = 1'-0"



PLAN AT ELEV. 49'-3" (LEVEL 3)

SCALE 1/8" = 1'-0"

DRAWING NOTES

1	PROVIDE LISTED COORDINATOR ON FIRE DOORS.
2	FIRESTOP PENETRATIONS WITH LISTED FIRESTOPPING SYSTEM. REFER TO SPECIFICATIONS FOR SCHEDULE OF PENETRATIONS.
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7	REPLACE LATCH ASSEMBLY WITH LISTED LATCH.
8	INFILL OPENING WITH 6" MASONRY.
9	FIRESTOP PENETRATIONS WITH LISTED FIRESTOPPING SYSTEM. REFER TO SPECIFICATIONS FOR SCHEDULE OF PENETRATIONS.
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21	REPLACE DOOR AND FRAME WITH NEW LISTED FIRE DOOR AND FRAME ASSEMBLY HAVING A 1½ HOUR FIRE PROTECTION RATING EQUIPPED WITH LISTED SELF-CLOSING AND LATCHING HARDWARE.
22	REPLACE LATCH ASSEMBLY WITH LISTED LATCH.
23	REPLACE EXISTING GASKETS AND SWEEPS WITH LISTED GASKETS AND SWEEPS.
24	REPAIR LATCH
25	PROVIDE LISTED GASKETS AND SWEEPS.
26	SEAL GAPS BETWEEN DOOR FRAME AND WALL.
27	TYPICAL BOLLARDS PROTECTING HOSE REELS AND WATER MONITORS. REFER TO BOLLARD DETAIL ON DRAWING FP4-4.

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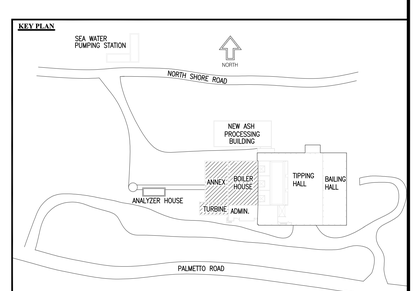
Project Number: **07031**

Project Title:
TYNES BAY WASTE TREATMENT FACILITY FIRE PROTECTION UPGRADE

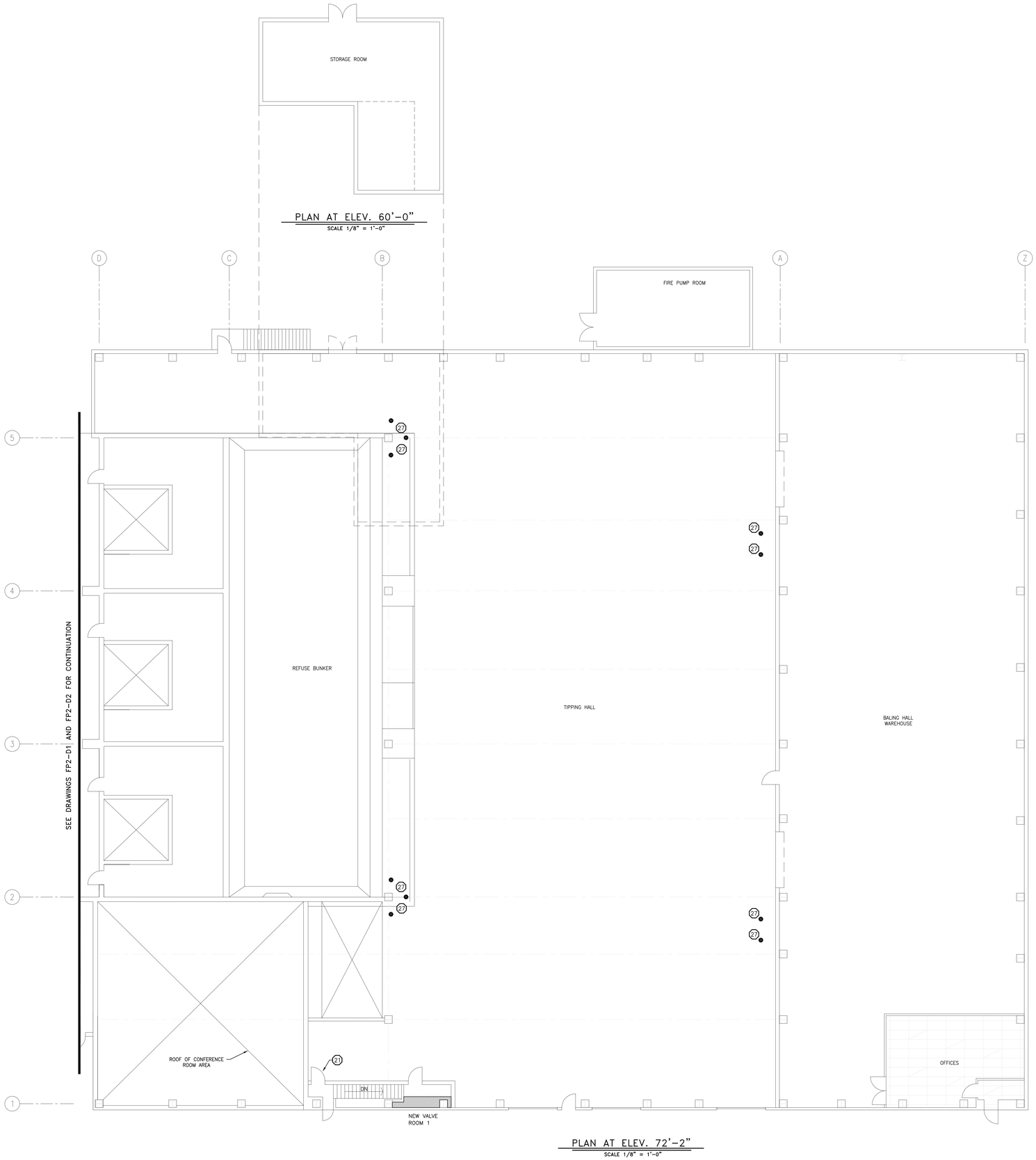
Sheet Title:
FIRE SEPARATION ANNEX BUILDING, TURBINE HALL AND BOILER HOUSE

KEY PLAN



Revision: /4\

Sheet Number: **FP4-1**



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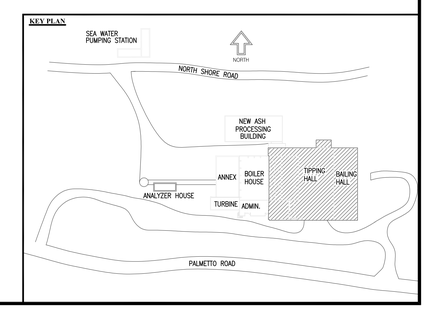
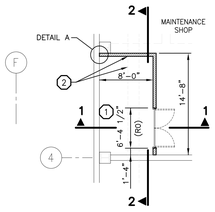
Project Title:
TYNES BAY WASTE TREATMENT FACILITY FIRE PROTECTION UPGRADE

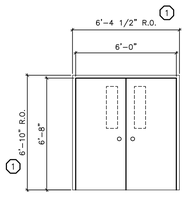
Sheet Title:
FIRE SEPARATION BAILING HALL, TIPPING HALL AND FIRE PUMP ROOM

KEY PLAN

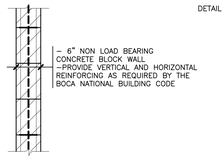


Revision: 4 | Sheet Number: **FP4-3**



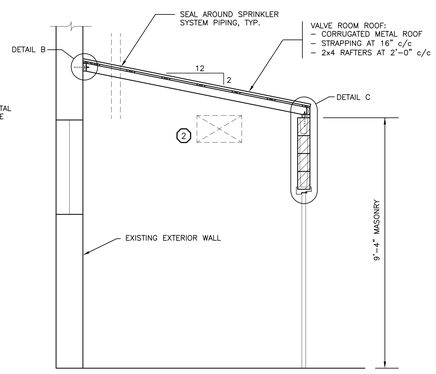


- HOLLOW METAL DOOR WITH PAINT FINISH
- PRESSED STEEL FRAME WITH PAINT FINISH
- WITH WIRED GLAZING (SIZED TO CODE)
- 3 HINGES EACH SIDE
- 1 SOUND SEAL SIZE TO SUIT
- 1 DOOR BOTTOM SIZE TO SUIT
- 1 KEYED LOCKSET



NEW VALVE ROOM 1 PLAN

SCALE 1/8" = 1'-0"



SECTION 1 – 1

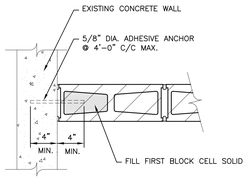
SCALE 1/2" = 1'-0"

DRAWING NOTES

1. MASONRY OPENING DIMENSIONS TO SUIT DOOR AND FRAME.
2. APPROXIMATE LOCATION OF EXISTING DUCTWORK. SEAL AROUND DUCT AT END WALL.
3. DIMENSION TO SUIT DOOR AND FRAME SIZE.

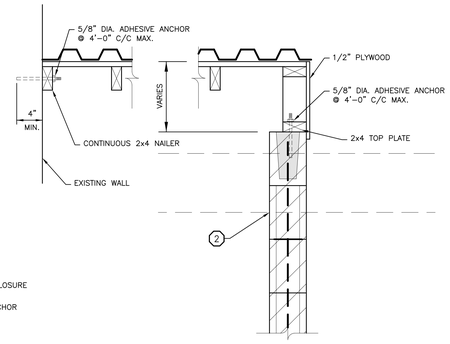
GENERAL NOTES

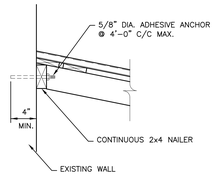
1. ALL WOOD INCLUDING PLYWOOD AND JOIST SHALL BE PRESSURE TREATED.
2. ALL STEEL INCLUDING CHANNELS, BOLTS AND PLATES SHALL BE HOT DIPPED GALVANIZED.



DETAIL A

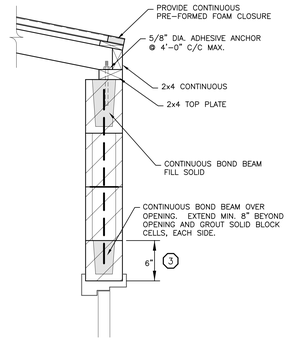
SCALE 1 1/2" = 1'-0"





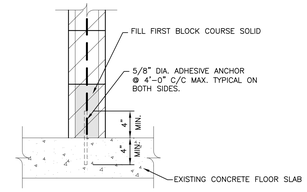
DETAIL B

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



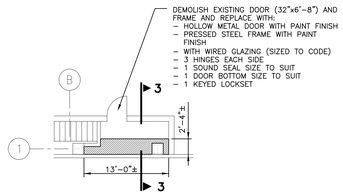
DETAIL C

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



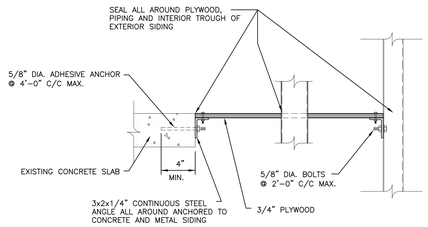
SECTION 2

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



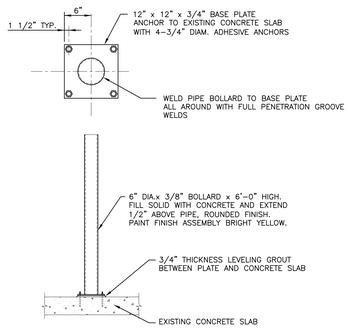
VALVE ROOM 2 PLAN

SCALE 1/8" = 1'-0"



SECTION 3

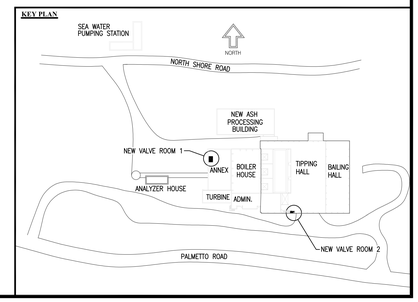
SCALE 1 1/2" = 1'-0"



TYPICAL BOLLARD DETAIL

SCALE 1/2" = 1'-0"

KEY PLAN



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DEPARTMENT OF OPERATIONS AND ENGINEERING

P.O. Box HM525 Hamilton HMCX Bermuda
Tel: (441) 295-5151
Fax: (441) 295-0170

REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
#M4754
Ian C. MacDonald
SIGNATURE
2010-01-15
DATE
Province du Nouveau - Brunswick
INGÉNIEUR IMMATRICULÉ

THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

CONSULTANT

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Fire Protection Engineers
Building Code Consultants
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ISSUE / REVISION

No.		Date:
4	ISSUED FOR TENDER	10/01/15
3	ISSUED FOR PERMIT APPLICATION	09/05/11
2	ISSUED FOR FINAL REVIEW	08/02/29
1	ISSUED FOR 99% REVIEW	08/01/04

SCALE: AS NOTED

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: AM/HR Date: -
Checked By: AM Date: -

DRAWING
Prepared By: HR Date: -
Checked By: IM Date: -

Approved By: -

Project Number: **07031**

Project Title:
TYNES BAY WASTE TREATMENT FACILITY FIRE PROTECTION UPGRADE

Sheet Title:
VALVE ROOMS PLANS AND DETAILS

Revision: 4

Sheet Number: **FP4-4**

THRUST BLOCK SCHEDULE						
PIPE ø	DEAD END	90° BEND	45° BEND	22.5° BEND	11.25° BEND	5.125° BEND
4 ø	1810	2559	1385	706	355	162
6 ø	3739	5288	2862	1459	733	334
8 ø	6433	9097	4923	2510	1261	575
10 ø	9677	13685	7406	3776	1897	865
12 ø	13685	19353	10474	5340	2683	1224

- THRUST FITTING @ 100 psi (6.9 bar) WATER PRESSURE FOR DUCTILE IRON & PVC PIPE

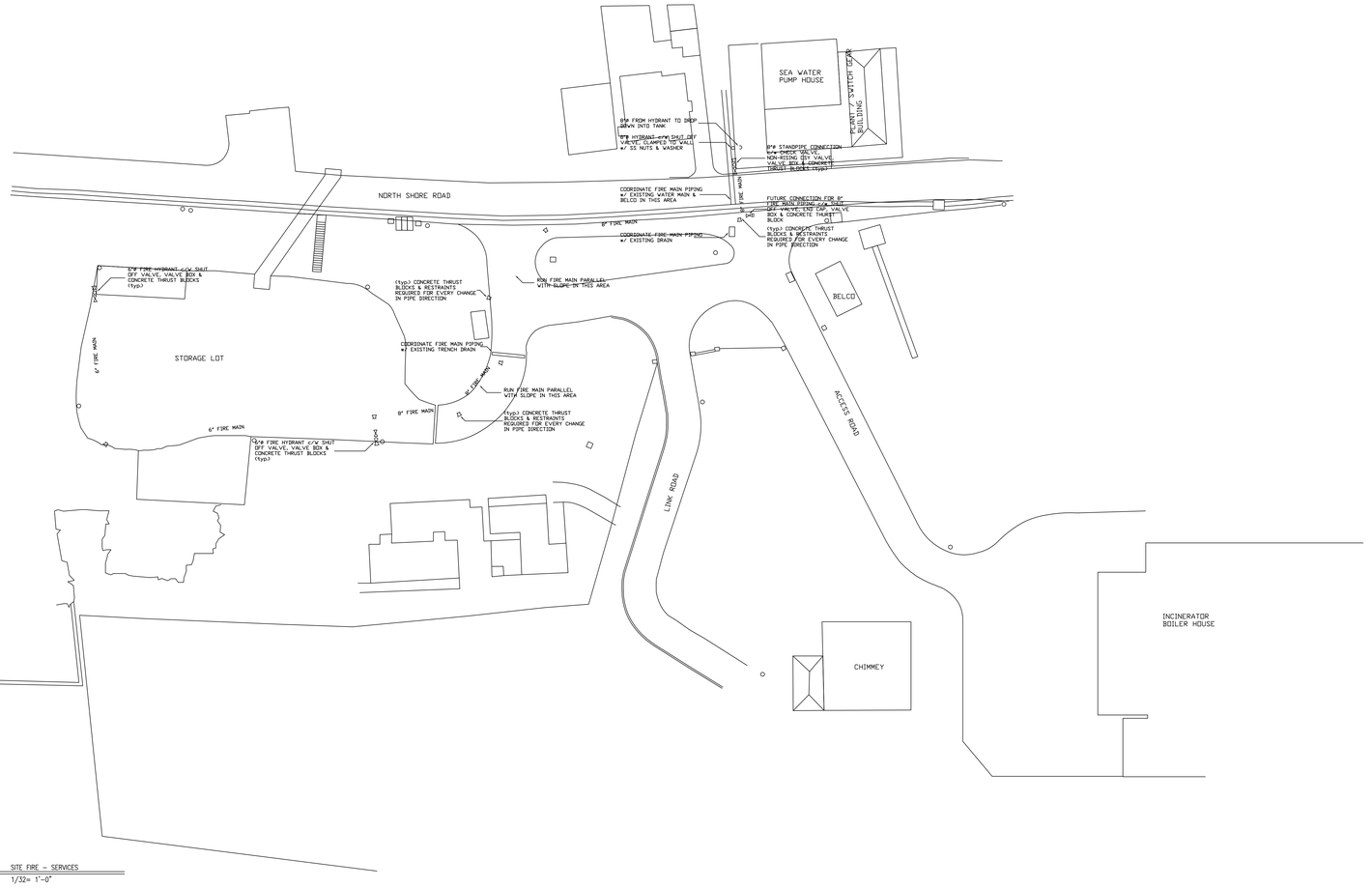
BEARING STRENGTH (Sb)		
SOIL	lb/ft^2	kN/m^2
MUCK	0	0
SOFT CLAY	1000	47.9
SILT	1500	71.8
SANDY SILT	3000	143.6
SAND	4000	191.5
SANDY CLAY	6000	287.3
HARD CLAY	9000	430.9

BLOCK AREA (Ab) = (h)(b) = T(SF)/Sb

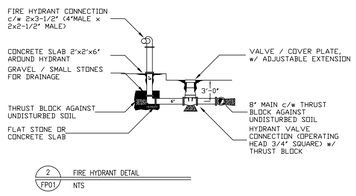
Ab - REQUIRED BLOCK AREA
h - BLOCK HEIGHT
b - CALCULATED BLOCK WIDTH
T - THRUST FORCE
SF - SAFETY FACTOR
Sb - BEARING STRENGHT

HORIZONTAL BEND lb = 2(SF)(P)(A)sin(D/2))/(h)(Sb)

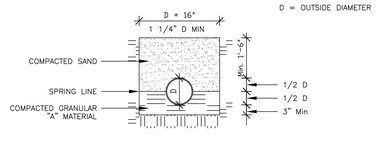
A - CROSS SECTIONAL AREA OF THE PIPE INTERIOR
h - BLOCK HEIGHT
SF - SAFETY FACTOR (usually 1.5 for thrust block design)
Sb - HORIZONTAL BEARING STRENGHT FOR THE SOIL
P - WATER PRESSURE



1 FP01 SITE FIRE - SERVICES
1/32= 1'-0"



2 FP01 FIRE HYDRANT DETAIL
NTS



CLASS "B" - GRANULAR FOUNDATION

3 FP01 PIPE TRENCH DETAIL
NTS

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Woodbourne Associates Limited.

REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
#M4754
Ian C. MacDonald
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INGÉNIEUR IMMATRICULÉ

THIS DRAWING IS FOR DIAGRAMMATIC USE ONLY. EXACT SYSTEM LOCATIONS TO BE DETERMINED ON SITE

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ISSUE / REVISION

No.		Date:
3	-	-
2	*ISSUED FOR TENDER*	*10/01/15*
1	*ISSUED FOR TENDER*	*09/04/24*

SCALE: *AS NOTED*

SURVEY
Prepared By: - Date: -

DESIGN
Prepared By: *AM/LD* Date: -
Checked By: *AM* Date: -

DRAWING
Prepared By: *LD* Date: -
Checked By: *IM* Date: -

Approved By:

Project Number: **07031**

Project Title:
TYNES BAY ENERGY FACILITY FIRE PROTECTION UPGRADE

Sheet Title:
SPRINKLER SYSTEM FIRE PROTECTION RING MAIN

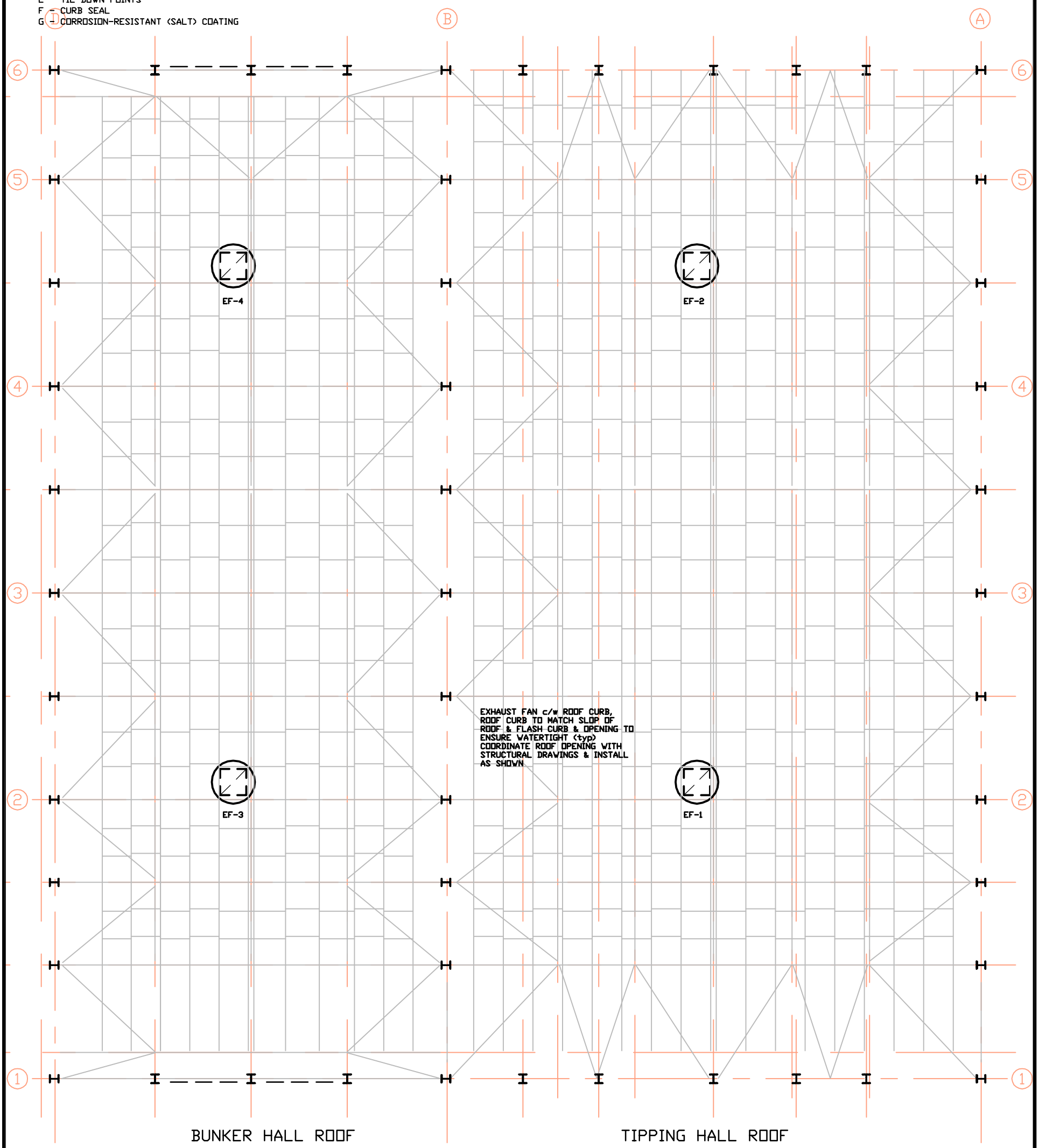
Revision: 2
Sheet Number: **FP5-1**

FAN SCHEDULE

UNIT #:	SERVICE	TYPE	TOTAL CFM	E.S.P (In. wg.)	RPM	FAN TYPE	DRIVE	MOTOR Hp	ELECTRIC BHP	V	ø	Hz	MANUFACTURER MODEL#: (GREENHECK)	REMARKS
EF-1	TIPPING	EXHAUST	21550	0.125	375	EXHAUST	BELT	5	3.45	230	3	60	GB-480-50	See options required listed below & use only SS fasteners.
EF-2	TIPPING	EXHAUST	21550	0.125	375	EXHAUST	BELT	5	3.45	230	3	60	GB-480-50	See options required listed below & use only SS fasteners.
EF-3	BUNKER	EXHAUST	21550	0.125	375	EXHAUST	BELT	5	3.45	230	3	60	GB-480-50	See options required listed below & use only SS fasteners.
EF-4	BUNKER	EXHAUST	21550	0.125	375	EXHAUST	BELT	5	3.45	230	3	60	GB-480-50	See options required listed below & use only SS fasteners.

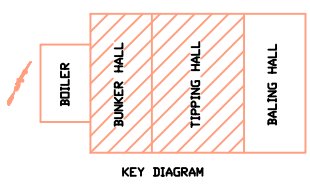
ITEMS TO BE PROVIDED WITH FAN:
A - ROOF CURB TO MATCH SLOPE OF ROOF
B - BACK DRAFT DAMPER
C - BIRD SCREEN STAINLESS STEEL
D - DISCONNECT SWITCH RAINPROOF & CORROSION-RESISTANT w/ 50 amp UNFUSED (typical)
E - TIE DOWN POINTS
F - CURB SEAL
G - CORROSION-RESISTANT (SALT) COATING

CONTRACTOR TO SUPPLY ALL SCAFFOLD AND HOISTING EQUIPMENT.



1 / M.1 **ROOF PLAN - MECHANICAL**
1:200

FOR TENDER



KEY DIAGRAM

TYNES BAY
WASTE TREATMENT FACILITY

PROPOSED ROOF EXHAUST FANS
MECHANICAL - EXHAUST FAN DETAIL

WOODBOURNE ASSOCIATES LTD.
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P.O. BOX HM 934
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TEL. 441-295-0319 FAX.441-292-3784

DRAWN	VPR	SCALE	AS SHOWN
CHECKED		JOB No.	RM14758
DATE	APRIL 2009	DRAWING No.	M.1

BUNKER HALL ROOF		TIPPING HALL ROOF	
AUTO OFF ON CONTROL SWITCH	SMOKE EXHAUST FAN FAN EF–3 (G) ON (R) OFF	AUTO OFF ON CONTROL SWITCH	SMOKE EXHAUST FAN FAN EF–1 (G) ON (R) OFF
BUNKER HALL ROOF		**TIPPING HALL ROOF**	
AUTO OFF ON CONTROL SWITCH	SMOKE EXHAUST FAN FAN EF–4 (G) ON (R) OFF	AUTO OFF ON CONTROL SWITCH	SMOKE EXHAUST FAN FAN EF–2 (G) ON (R) OFF

NOTES:

1. LOCATE FAN CONTROL IN CONTROL ROOM ADJACENT TO FIRE ALARM CONTROL PANEL. LOCATION TO BE SITE CONFIRMED.

ANNUNCIATOR LAYOUT
SMOKE MANAGEMENT SYSTEM SCALE: N.T.S.

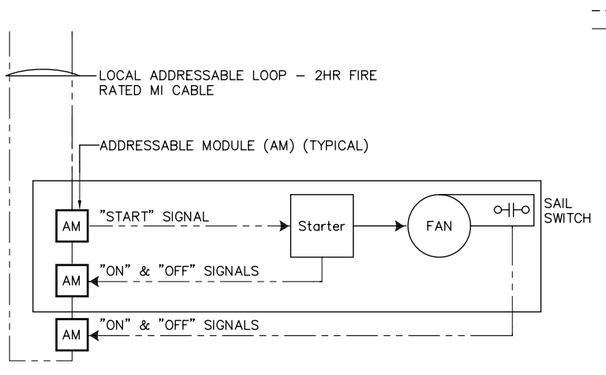
SEQUENCE OF OPERATION – UPON MANUAL ACTIVATION OF CONTROL SWITCH AT FACP FOR SMOKE EXHAUST

MECHANICAL EQUIPMENT		UPON ACTIVATION OF CONTROL SWITCH FOR TIPPING HALL SMOKE EXHAUST	UPON ACTIVATION OF CONTROL SWITCH FOR TIPPING HALL SMOKE EXHAUST	UPON ACTIVATION OF CONTROL SWITCH FOR BUNKER HALL SMOKE EXHAUST	UPON ACTIVATION OF CONTROL SWITCH FOR BUNKER HALL SMOKE EXHAUST
DESIGNATION	DUTY				
SMOKE EXHAUST FANS					
EF–1	TIPPING HALL ROOF	ON	–	–	–
EF–2	TIPPING HALL ROOF	–	ON	–	–
EF–3	BUNKER HALL ROOF	–	–	ON	–
EF–4	BUNKER HALL ROOF	–	–	–	ON

LEGEND

ON	EQUIPMENT ON
OFF	EQUIPMENT OFF
–	NO ACTION ON EQUIPMENT , EQUIPMENT TO STAY WHERE IT IS

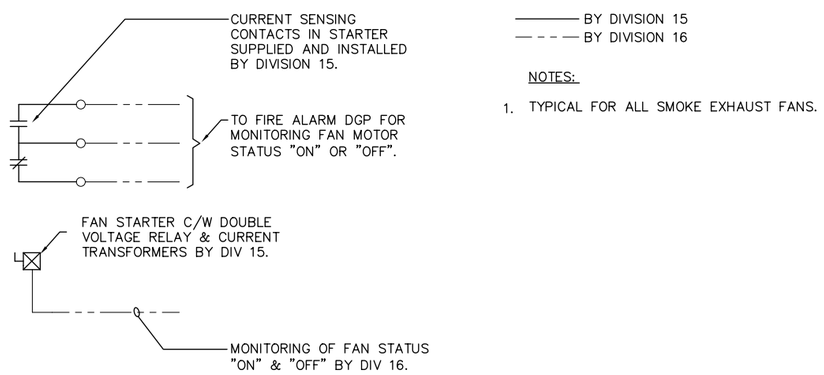
SMOKE EXHAUST SYSTEM CONTROL MATRIX
SCALE: N.T.S.



NOTES:

1. CONNECT FAN TO FIRE ALARM SYSTEM TO AUTO START FANS AND COMMENCE SMOKE EXHAUST SEQUENCE. SEQUENCE SHALL BE INITIATED EITHER BY SPRINKLER ZONE 21 (REFUSE PIT) OR SPRINKLER ZONE 22 (TIPPING HALL) ONLY.

SMOKE FAN CONTROL AND MONITORING DETAIL
SCALE: N.T.S.



NOTES:

1. TYPICAL FOR ALL SMOKE EXHAUST FANS.

SMOKE FAN CONTROL AND MONITORING DETAIL
SCALE: N.T.S.

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Tel: (441)295-0555 . Fax: (441)295-4252

PROJECT TITLE: TYNES BAY WASTE TREATMENT FACILITY - SMOKE EXHAUST

TITLE: FAN CONTROL DETAILS

DATE: 15 April 09

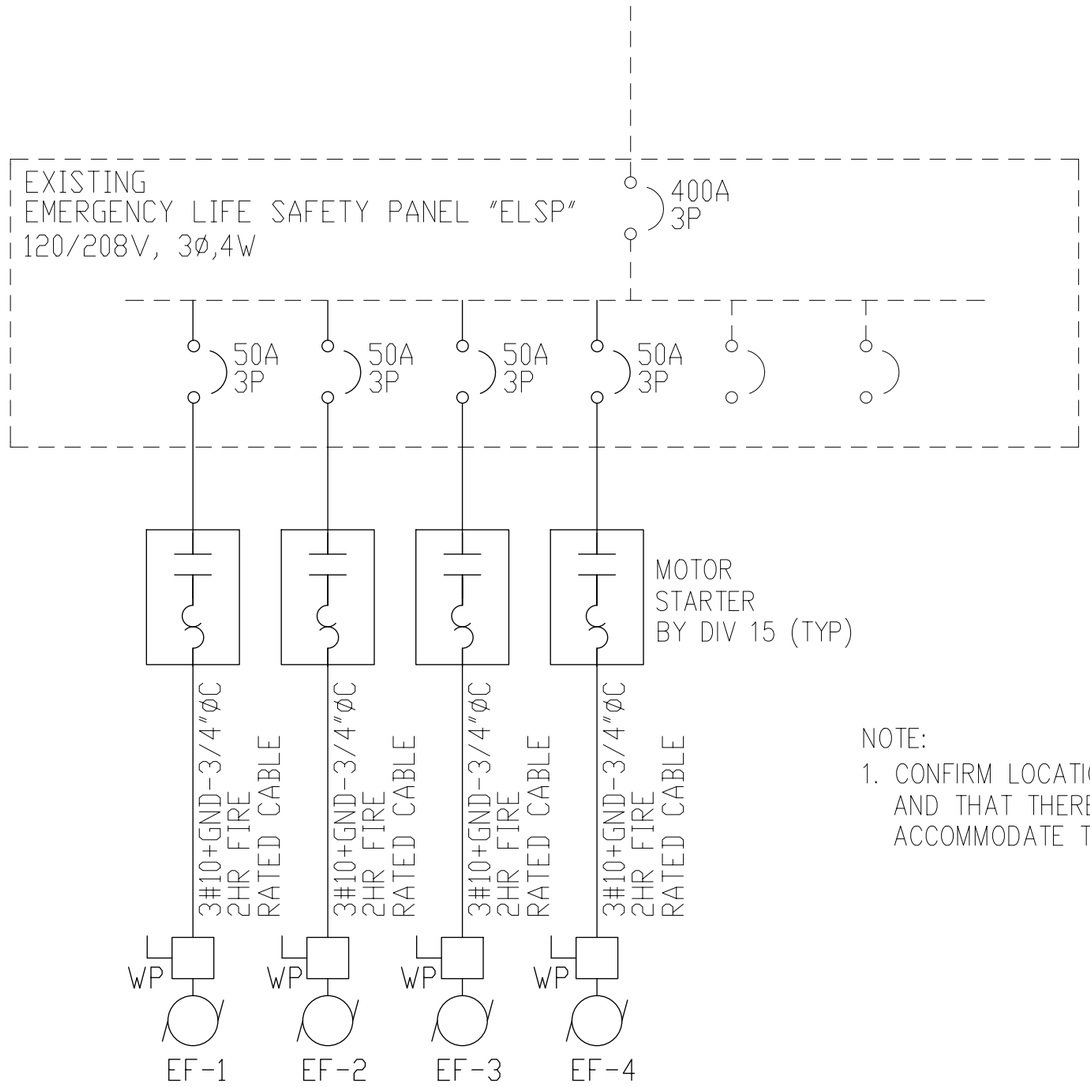
DRAWN BY: N.D. CHK'D:

REV NO.

SCALE: nts

ISSUED:

DRAWING NUMBER: E–01



NOTE:

1. CONFIRM LOCATION OF EXISTING EMERGENCY LIFE SAFETY PANEL AND THAT THERE IS SUFFICIENT SPARE/SPACE AVAILABLE TO ACCOMMODATE THE NEW CIRCUITS AS INDICATED

ELECTRICAL DISTRIBUTION

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PROJECT TITLE: TYNES BAY WASTE TREATMENT FACILITY - SMOKE EXHAUST

TITLE: ELECTRICAL DISTRIBUTION

DATE: 15 April 09

DRAWN BY: N.D. CHK'D:

REV NO.

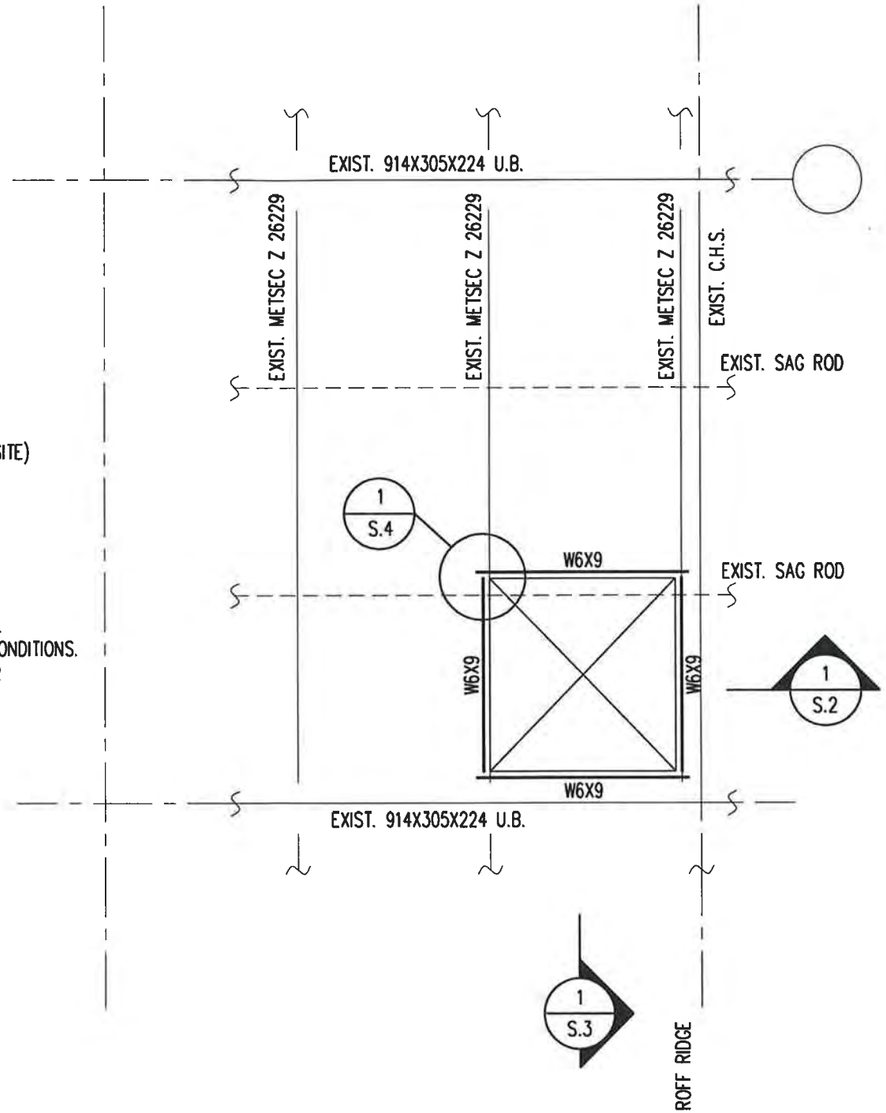
SCALE: nts

ISSUED:

DRAWING NUMBER: E-02

NOTES:

1. NEW W SECTIONS C/W WELDED ANGLES AND PLATES TO BE HOT-DIP GALVANIZED AFTER ALL HOLES ARE MADE.
2. HOLES IN THE EXISTING Z PURLINS (AND ANY HOLES IN CURBS, PLATES OR W BEAMS MADE ON SITE) ARE TO BE TOUCHED-UP WITH 2 COATS OF ZINC-RICH PAINT.
3. ROOF CURBS TO BE BY GREENHECK (RPS CORP.), GALVANIZED AND WATERPROOFED.
4. DECK WATERPROOFING AROUND THE OPENING TO BE BY SKB COATINGS LTD.
5. ALL BOLTS TO BE ½" DIA. A307 STEEL BOLTS C/W OVERSIZED ⅛" TH. WASHERS U.N.O.
6. ALL BOLTS, SCREWS AND WASHERS TO BE HOT-DIP GALVANIZED.
7. EXISTING Z PURLINS TO SUPPORT NEW STRUCTURE ARE ASSUMED TO BE METSEC Z 26229.
8. THE ABOVE AND ALL OTHER ASSUMED CONDITIONS ARE TO BE VERIFIED ON SITE BY CONTRACTOR.
9. CONTRACTOR IS TO NOTIFY ENGINEER ABOUT ANY DISCREPANCIES BETWEEN ASSUMED AND SITE CONDITIONS.
10. SHOP DRAWINGS OF ALL STRUCTURAL STEEL ELEMENTS (INCLUDING CURBS) TO BE SUBMITTED FOR ENGINEER'S REVIEW.



ROOF STRUCTURAL PART PLAN
1/4"=1'-0"

PROPOSED ROOF EXHAUST FANS
SUPPORT STRUCTURAL DETAILS

DRAWN	TJ	SCALE	AS SHOWN
CHECKED	TJ	JOB No.	RM14758
DATE	APRIL 2009	DRAWING No.	S.1

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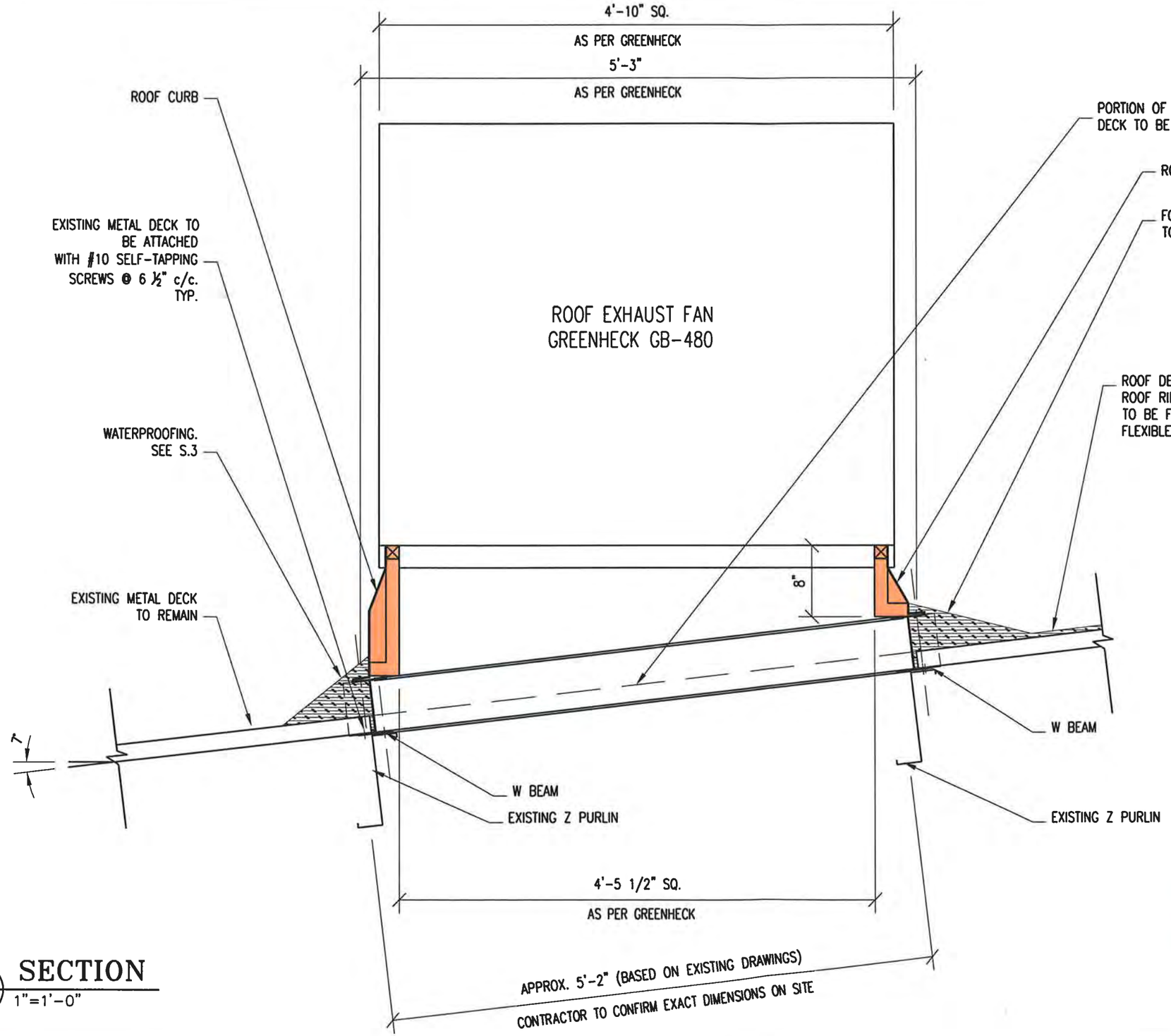

1 / S.2 **SECTION**
1"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
BERMUDA
15 APR 09

PROPOSED ROOF EXHAUST FANS
SUPPORT STRUCTURAL DETAILS

DRAWN	TJ	SCALE	AS SHOWN
CHECKED	TJ	JOB No.	RM14758
DATE	APRIL 2009	DRAWING No.	S.2

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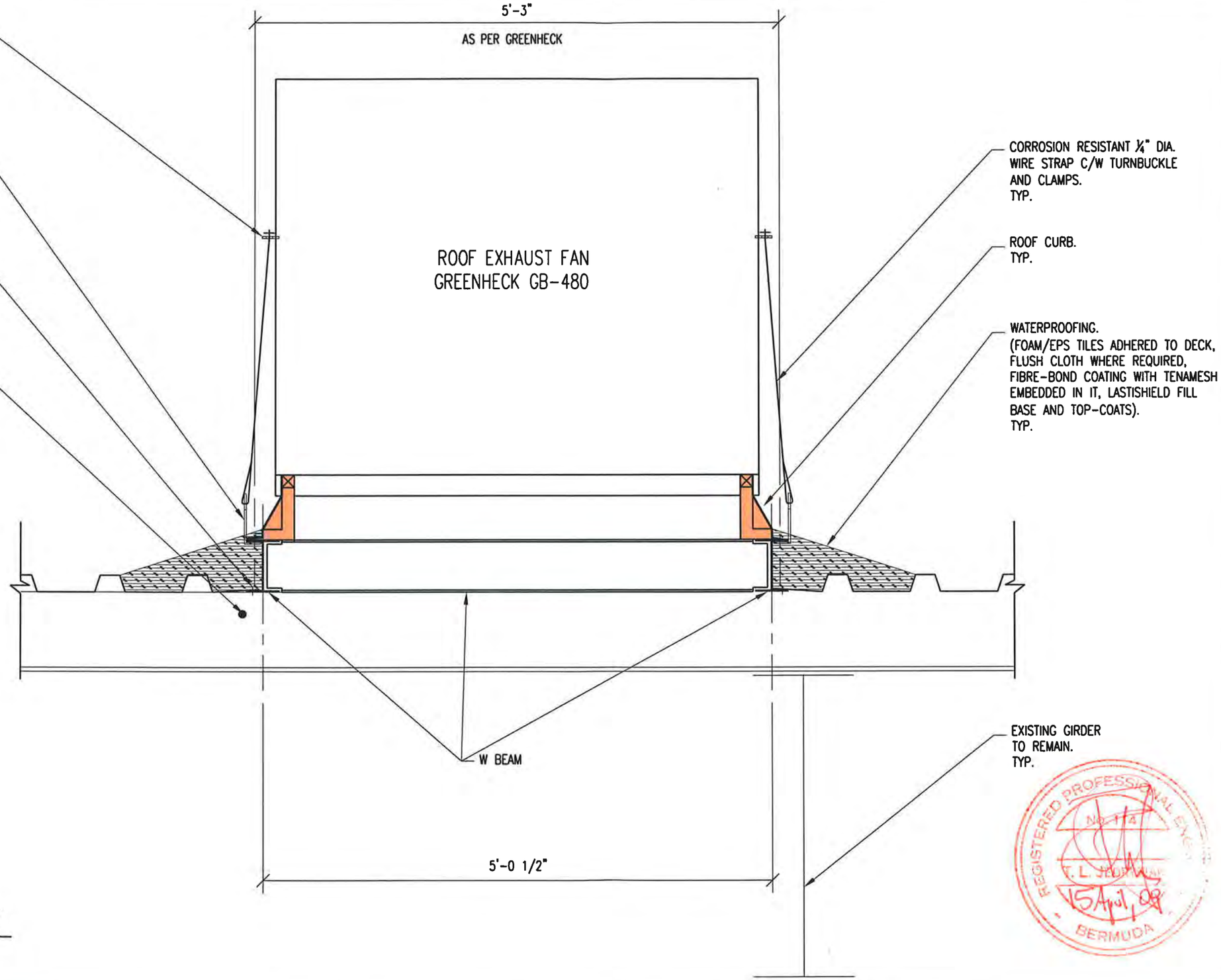

1/S.3 **SECTION**
1/2"=1'-0"

REGISTERED PROFESSIONAL ENGINEER No 114 T. L. SOUTHEY 15 April 09 BERMUDA

PROPOSED ROOF EXHAUST FANS SUPPORT STRUCTURAL DETAILS

DRAWN	TJ	SCALE	AS SHOWN
CHECKED	TJ	JOB No.	RM14758
DATE	APRIL 2009	DRAWING No.	S.3

TYNES BAY
WASTE TREATMENT FACILITY

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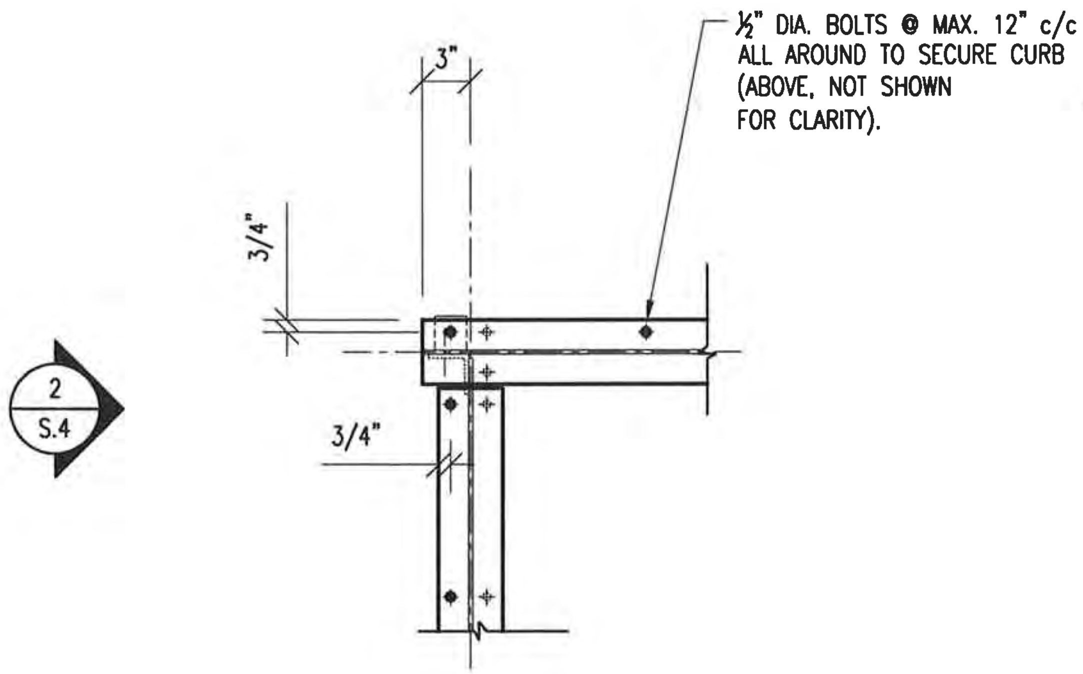
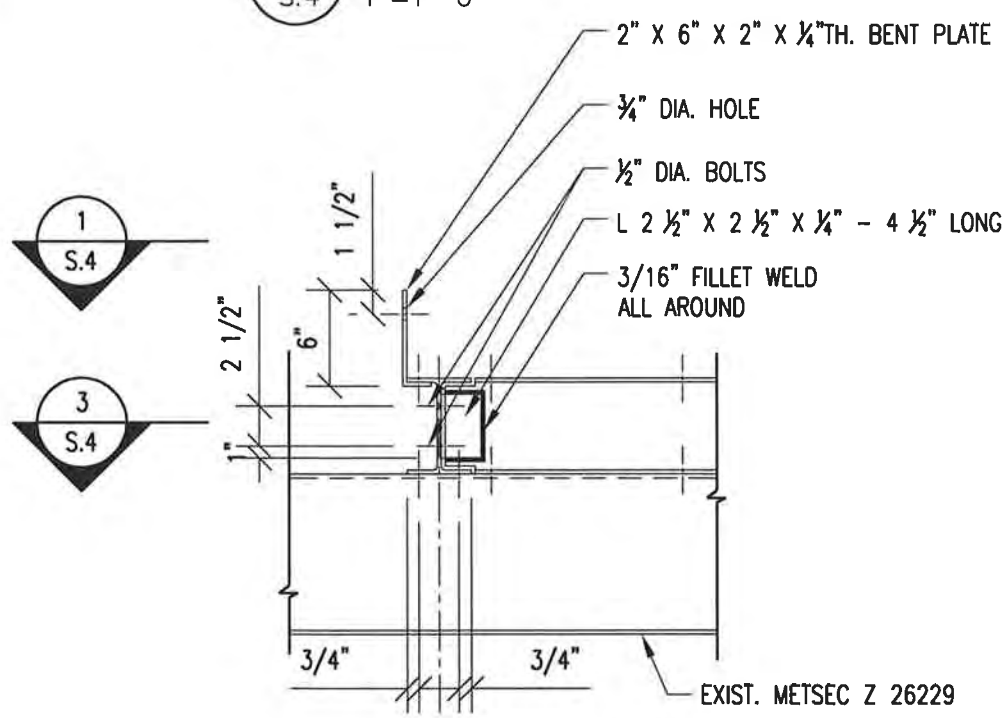
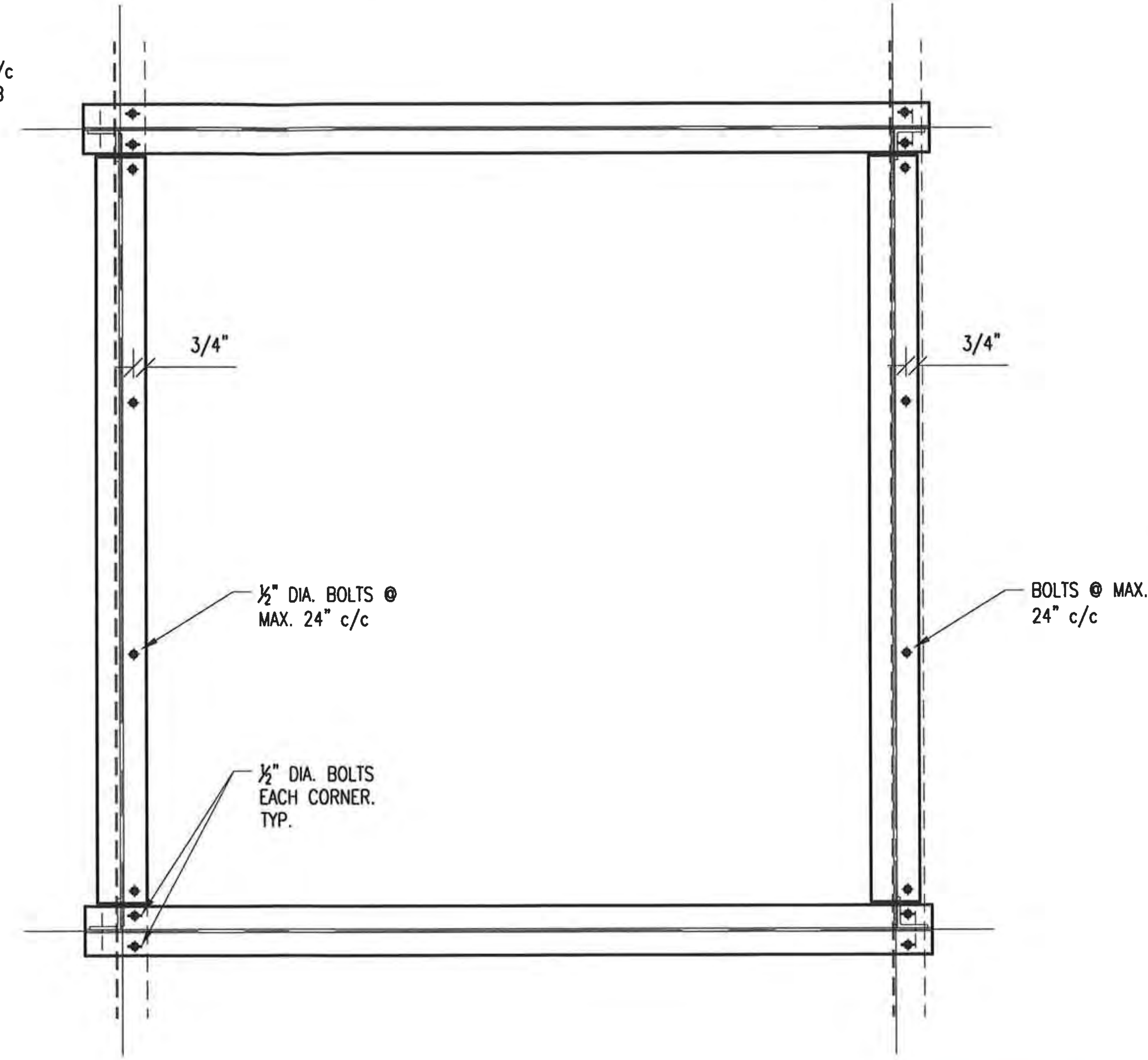


PLAN DETAIL
1 / S.4 — 1"=1'-0"



ELEVATION DETAIL
2 / S.4 — 1"=1'-0"



NOTE:

METAL DECK IS NOT SHOWN (FOR CLARITY).

SECTION DETAIL
3 / S.4 — 1"=1'-0"

REGISTERED PROFESSIONAL ENGINEER — BERMUDA — 15 April 09

PROPOSED ROOF EXHAUST FANS SUPPORT STRUCTURAL DETAILS	
SCALE	AS SHOWN
JOB No.	RM14758
DRAWING No.	S.4
DRAWN	TJ
CHECKED	TJ
DATE	APRIL 2009

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