

CONSTRUCTION DRAWINGS

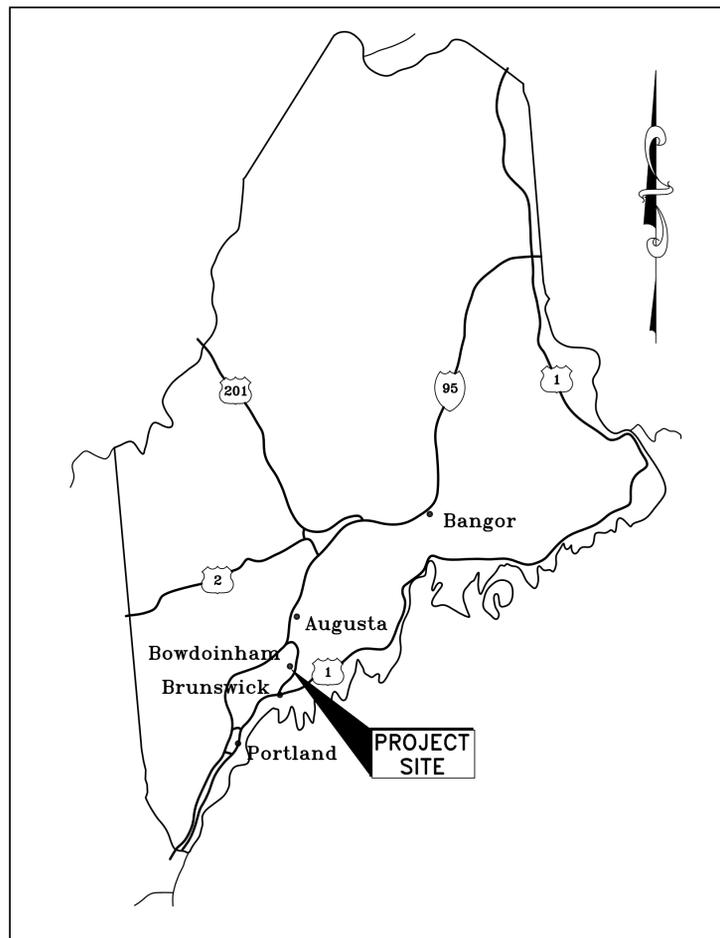
PUBLIC WORKS FACILITY

TOWN OF BOWDOINHAM, MAINE

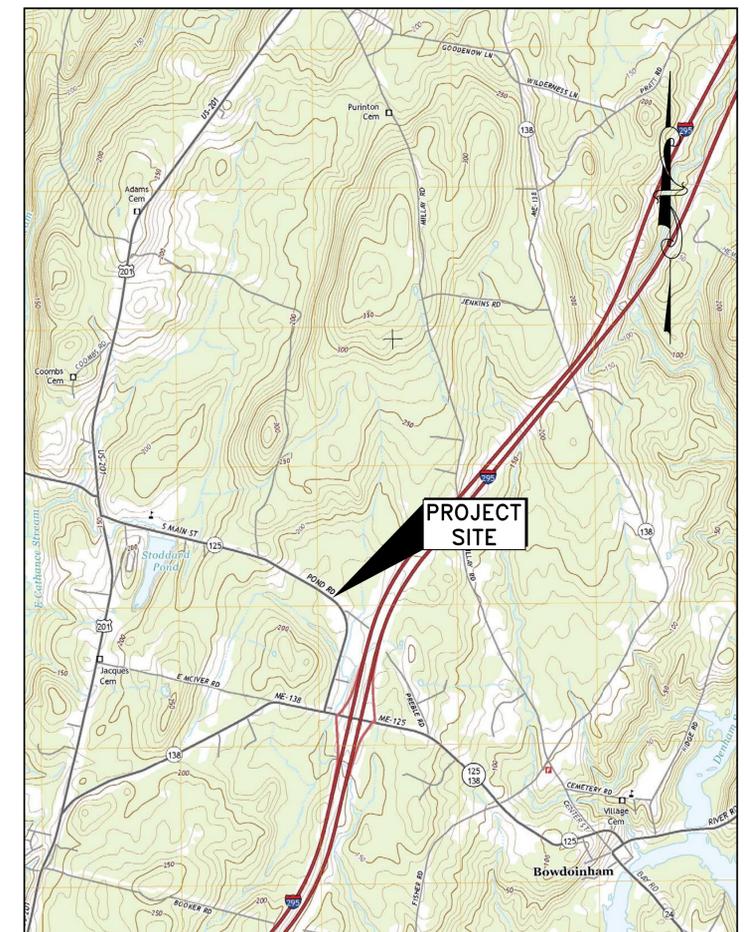
PINE TREE ENGINEERING, INC.
 53 Front Street
 Bath, Maine 04530

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LOCATION MAP
 SCALE: 1"=33± MILES



AREA MAP
 SCALE: 1"=2,000'±

LEGEND

| EXISTING | DESCRIPTION |
|-------------|------------------------|
| --- | APPROX. RIGHT-OF-WAY |
| ===== | EDGE OF PAVEMENT |
| ===== | CURBING |
| ----- | EDGE OF GRAVEL |
| ----- | EROSION CONTROL DEVICE |
| ---102--- | CONTOUR (2' INT.) |
| ---100--- | CONTOUR (10' INT.) |
| x100.0 | SPOT ELEV. |
| ⊙ TP (OR B) | TEST PIT/BORING |
| ----- | OVERHEAD ELECTRIC |
| ==> | DRAINAGE FLOW |
| ----- | CULVERT |
| ----- | WETLAND BOUNDARY |
| ----- | TREELINE |
| ⊙ 12" OAK | DECIDUOUS TREE |
| ⊙ 6" PINE | EVERGREEN TREE |
| △ | SURVEY CONTROL POINT |
| ○ | IRON PIPE/ROD FOUND |
| □ | MONUMENT FOUND |
| ⊙ | UTILITY POLE |
| + | GUY WIRE |
| ⊞ | MAILBOX |
| ⊞ | SIGN |

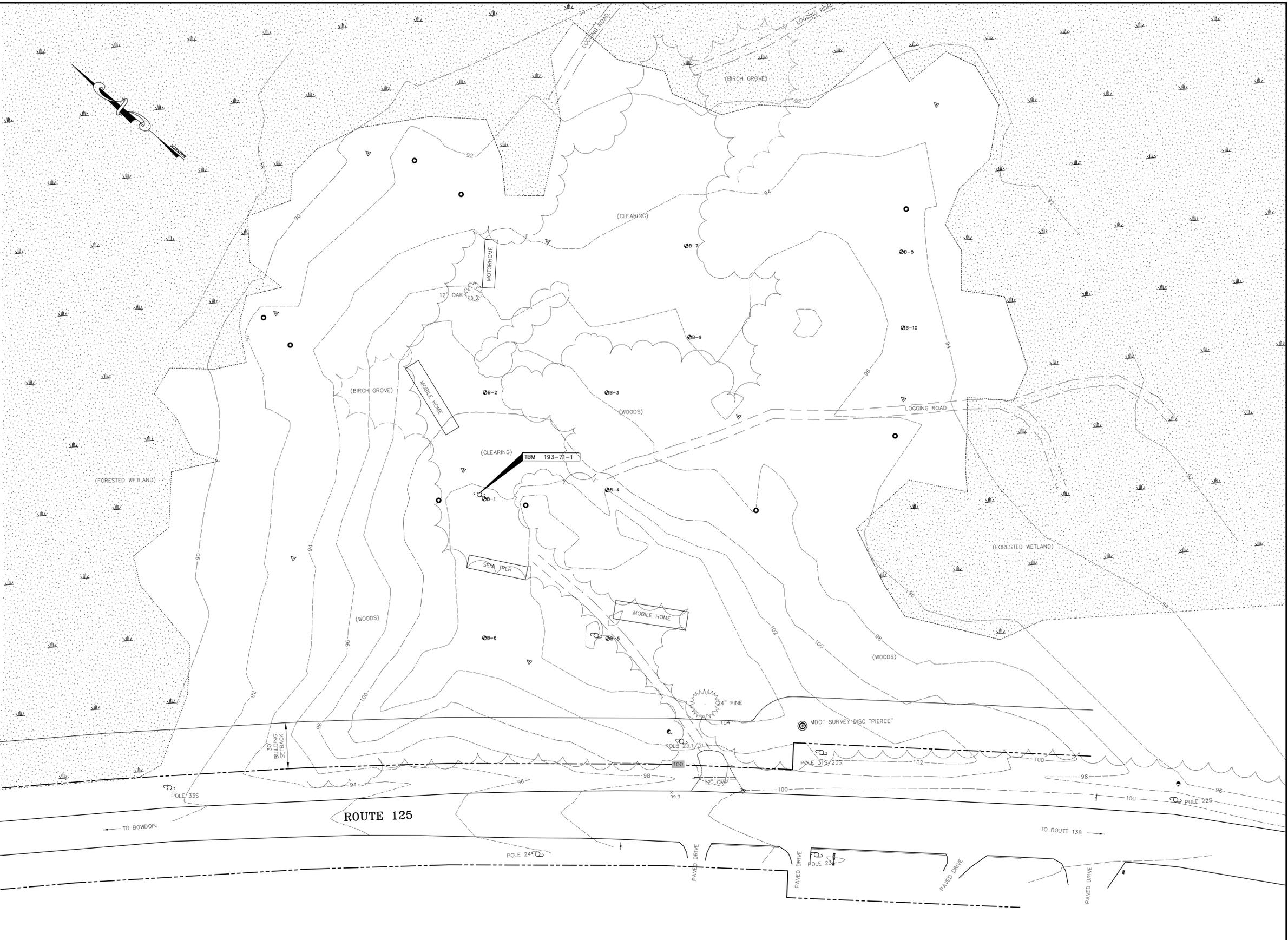
SURVEY NOTE:

THIS SITE PLAN IS THE RESULT OF TOPOGRAPHIC SURVEY PERFORMED BY PINE TREE ENGINEERING ON APRIL 28 AND MAY 3 AND 9, 2017 WITH ASSUMED HORIZONTAL GRID AND VERTICAL DATUM.

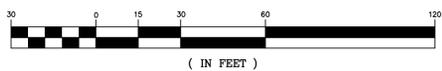
THE BOUNDARY LINES AND WETLAND DELINEATION ON THIS PLAN WERE TAKEN FROM A SURVEY PLAN CREATED BY BRIAN SMITH SURVEYING, INC. FOR WILLIAM H. ALLEN, SR. DATED MARCH 3, 1992. FOR THE PURPOSE OF THIS DRAWING, THE BOUNDARY LINES ARE TO BE CONSIDERED APPROXIMATE.

TEMPORARY BENCHMARK:

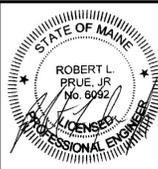
TBM 193-71-01
NAIL SET ~1' ABOVE GRADE IN PRIVATE UTILITY POLE.
ELEVATION 103.97



GRAPHIC SCALE



| REV | DATE | STATUS | BY | CHKD | APPD |
|-----|-----------|--------------------|-----|------|------|
| 0 | 1/26/2018 | ISSUED FOR BIDDING | JCD | RLP | RLP |



| | |
|--------------|------------|
| DESIGNED BY: | RLP/JCD |
| DRAWN BY: | JCD |
| CHECKED BY: | RLP |
| APPROVED BY: | RLP |
| DATE: | 01/26/2018 |

Pine Tree Engineering

53 Front Street
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Civil/Environmental Engineering + Surveying

CLIENT

TOWN OF BOWDOINHAM
13 SCHOOL STREET
BOWDOINHAM, ME 04008

PROJECT

PUBLIC WORKS FACILITY

TITLE

EXISTING CONDITIONS

| | |
|-------------|---------------|
| SCALE | 1" = 30' |
| PROJECT NO. | 16018 |
| DRAWING NO. | 16018site.dwg |
| SHT. | 2 of 19 |
| REV. | 0 |

LEGEND

| EXISTING | DESCRIPTION | PROPOSED |
|-------------|------------------------|---------------|
| --- | APPROX. RIGHT-OF-WAY | --- |
| == | EDGE OF PAVEMENT | == |
| --- | CURBING | --- |
| --- | EDGE OF GRAVEL | --- |
| --- | EROSION CONTROL DEVICE | --- |
| ---102--- | CONTOUR (2' INT.) | ---(102)--- |
| ---100--- | CONTOUR (10' INT.) | --- |
| x100.0 | SPOT ELEV | x100.00 |
| ⊙ TP (OR B) | TEST PIT/BORING | ⊙ |
| --- | OVERHEAD ELECTRIC | --- |
| --- | UNDERGROUND ELECTRIC | ---UGE--- |
| --- | WATER LINE | ---W--- |
| --- | STORM DRAIN | ---SD--- |
| --- | GRAVITY SEWER MAIN | ---S--- |
| --- | DRAINAGE FLOW | --- |
| --- | CULVERT | ---12" CMP--- |
| --- | WETLAND BOUNDARY | --- |
| --- | TREELINE | --- |
| ⊙ 12" OAK | DECIDUOUS TREE | ⊙ |
| ⊙ 6" PINE | EVERGREEN TREE | ⊙ |
| △ | SURVEY CONTROL POINT | △ |
| ⊙ | IRON PIPE/ROD FOUND | ⊙ |
| ⊙ | MONUMENT FOUND | ⊙ |
| ⊙ | UTILITY POLE | ⊙ |
| ⊙ | GUY WIRE | ⊙ |
| ⊙ | MANHOLE | ⊙ MH#1 |
| ⊙ | CATCH BASIN | ⊙ CB#1 |
| ⊙ | DRILLED WELL | ⊙ |
| ⊙ | MAILBOX | ⊙ |
| ⊙ | SIGN | ⊙ |
| ⊙ | BUILDING/STRUCTURE | ⊙ |
| ⊙ | RIPRAP | ⊙ |

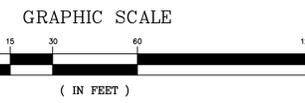
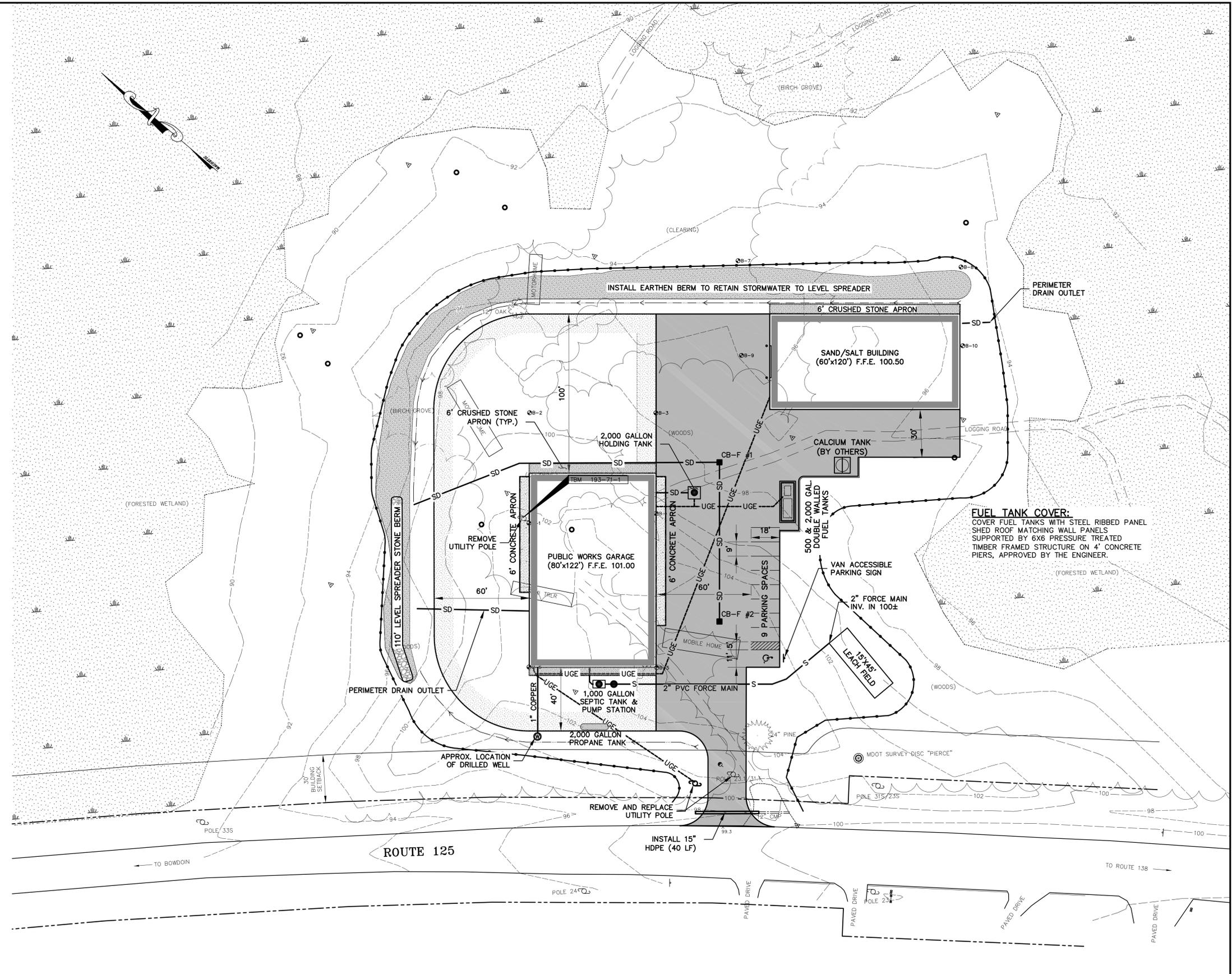
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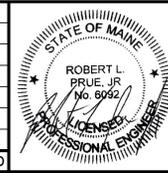
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TEMPORARY BENCHMARK:

TBM 193-71-01
NAIL SET ~1' ABOVE GRADE IN PRIVATE UTILITY POLE.
ELEVATION 103.97



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|-----|-----------|--------------------|-----|------|------|
| 0 | 1/26/2018 | ISSUED FOR BIDDING | JCD | RLP | RLP |



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DRAWN BY: JCD
CHECKED BY: RLP
APPROVED BY: RLP
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PROJECT
PUBLIC WORKS FACILITY

TITLE
PROPOSED SITE PLAN

SCALE 1" = 30'

PROJECT NO. 16018

DRAWING NO. 16018 site.dwg

SHT. 3 of 19 REV. 0

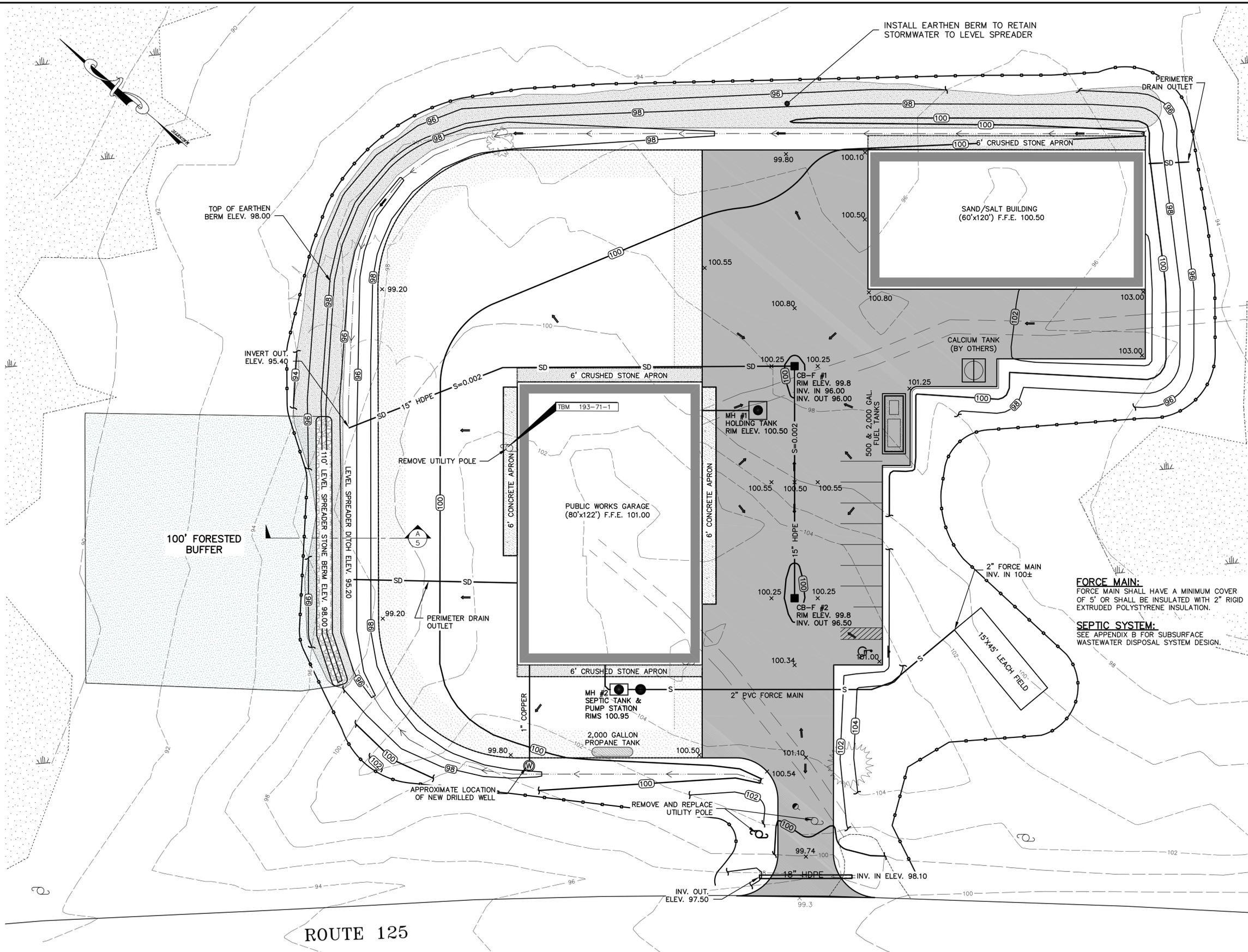
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LEGEND

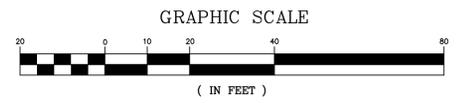
| EXISTING | DESCRIPTION | PROPOSED |
|-------------|------------------------|-----------|
| --- | APPROX. RIGHT-OF-WAY | --- |
| ===== | EDGE OF PAVEMENT | ===== |
| ===== | CURBING | ===== |
| ----- | EDGE OF GRAVEL | ----- |
| ----- | EROSION CONTROL DEVICE | ----- |
| 102 | CONTOUR (2' INT.) | 102 |
| 100 | CONTOUR (10' INT.) | 100 |
| x 100.0 | SPOT ELEV | x 100.00 |
| ⊙ TP (OR B) | TEST PIT/BORING | |
| ----- | OVERHEAD ELECTRIC | ----- |
| ----- | UNDERGROUND ELECTRIC | ----- UGE |
| --- | WATER LINE | --- |
| --- | STORM DRAIN | --- |
| --- | GRAVITY SEWER MAIN | --- |
| --- | DRAINAGE FLOW | --- |
| --- | CULVERT | 12" CMP |
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| ⊙ | 12" OAK | |
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| □ | MONUMENT FOUND | |
| ○ | UTILITY POLE | ○ |
| ○ | GUY WIRE | |
| ○ | MANHOLE | ● MH#1 |
| ○ | CATCH BASIN | ■ CB#1 |
| ○ | DRILLED WELL | ⊙ |
| ⊙ | MAILBOX | |
| ⊙ | SIGN | |
| ⊙ | BUILDING/STRUCTURE | ⊙ |
| ⊙ | RIPRAP | ⊙ |

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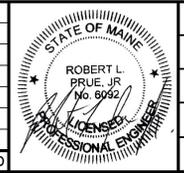
TEMPORARY BENCHMARK:
 TBM 193-71-01
 NAIL SET ~1" ABOVE GRADE IN PRIVATE UTILITY POLE. ELEVATION 103.97



FORCE MAIN:
 FORCE MAIN SHALL HAVE A MINIMUM COVER OF 5' OR SHALL BE INSULATED WITH 2" RIGID EXTRUDED POLYSTYRENE INSULATION.
SEPTIC SYSTEM:
 SEE APPENDIX B FOR SUBSURFACE WASTEWATER DISPOSAL SYSTEM DESIGN.



| REV | DATE | STATUS | BY | CHKD | APPD |
|-----|-----------|--------------------|-----|------|------|
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 DATE: 01/26/2018

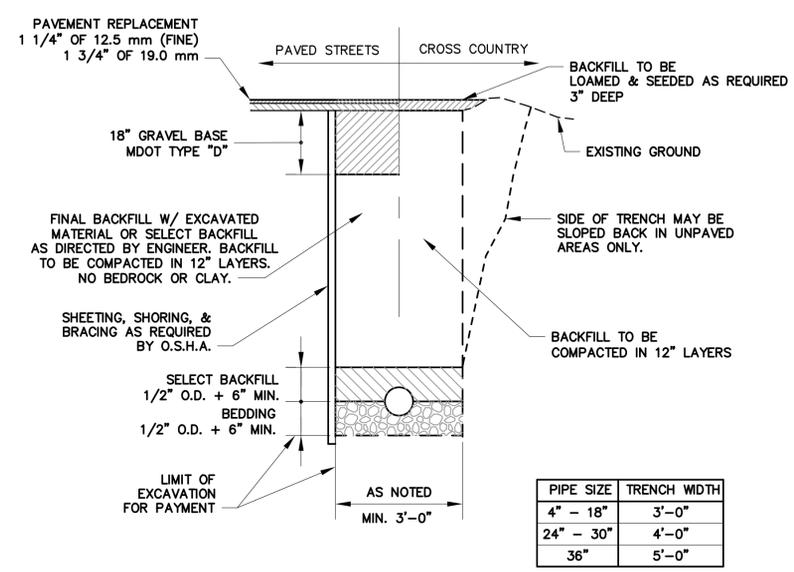
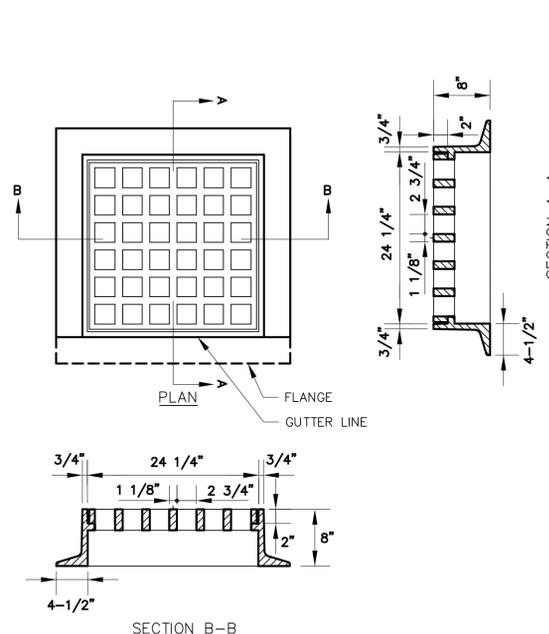
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PROJECT
PUBLIC WORKS FACILITY
 TITLE
GRADING AND DRAINAGE PLAN

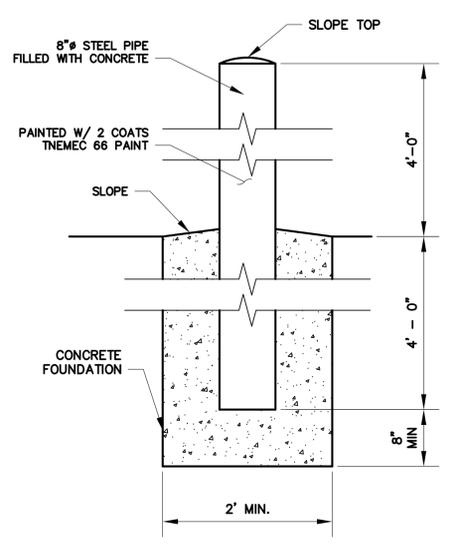
SCALE 1" = 20'
 PROJECT NO. 16018
 DRAWING NO. 16018 site.dwg
 SHT. 4 of 19 REV. 0

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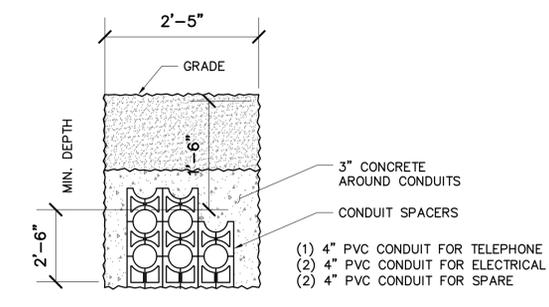


| PIPE SIZE | TRENCH WIDTH |
|-----------|--------------|
| 4" - 18" | 3'-0" |
| 24" - 30" | 4'-0" |
| 36" | 5'-0" |

TYPICAL TRENCH DETAIL

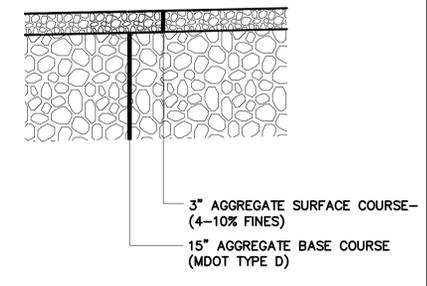


TYPICAL BOLLARD DETAIL

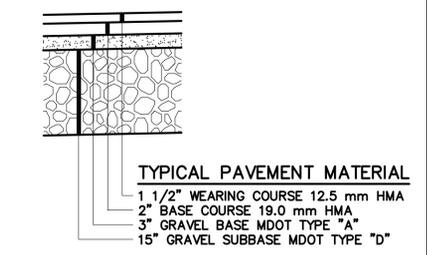


- NOTES:**
- ELECTRICAL INSTALLATIONS TO CONFORM TO CENTRAL MAINE POWER COMPANY HANDBOOK OF STANDARD REQUIREMENTS. CONDUITS SHALL BE PROPERLY PITCHED TO DRAIN INTO TRANSFORMER FOUNDATIONS, MANHOLES OR SPLICE BOXES. THREE INCHES PER 100 FEET MINIMUM SLOPE. INSTALL PULLING LINE IN EACH CONDUIT. PLUG CONDUIT ENDS TO PREVENT ENTRANCE OF SOIL AND WATER WHERE CONDUITS ARE STUBBED IN EACH LOT. ALL PRIMARY ELECTRICAL CONDUITS TO BE SCHEDULE 40 PVC ENCASED IN CONCRETE. SEE CONDUIT SECTION DETAILS.
 - ALL FAIRPOINT CONDUIT INSTALLATION SHALL CONFORM TO FAIRPOINT STANDARDS. CONCRETE ENCASEMENT FOR TELEPHONE AND CABLE TV CONDUITS NOT REQUIRED IF BURIED MINIMUM 30 INCHES BELOW GRADE AND SCHEDULE 40 CONDUIT.
 - CONCRETE ENCASEMENT IS SHOWN IN DUCT SECTIONS. PROVIDE CONDUITS IN CONCRETE WHERE RUNS UNDER ROADWAY. PROVIDE WARNING TAPE PER SPECIFICATIONS FOR ALL UNDERGROUND UTILITIES.

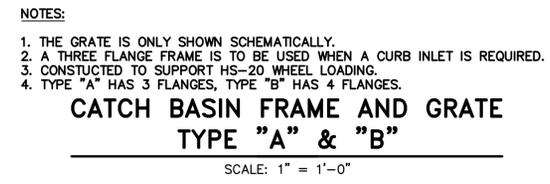
DUCT SECTION - A
NOT TO SCALE



GRAVEL AREAS
SCALE: 1" = 1'-0"

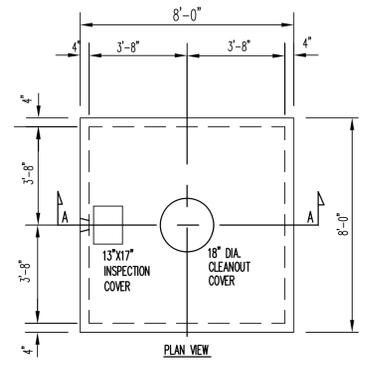


TYPICAL PAVED AREA
SCALE: 1" = 1'-0"

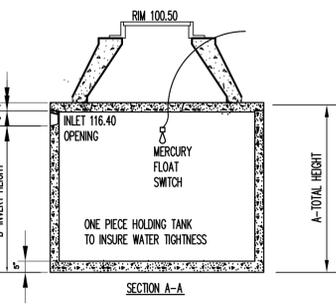


- NOTES:**
- THE GRATE IS ONLY SHOWN SCHEMATICALLY.
 - A THREE FLANGE FRAME IS TO BE USED WHEN A CURB INLET IS REQUIRED.
 - CONSTRUCTED TO SUPPORT HS-20 WHEEL LOADING.
 - TYPE "A" HAS 3 FLANGES. TYPE "B" HAS 4 FLANGES.

CATCH BASIN FRAME AND GRATE TYPE "A" & "B"
SCALE: 1" = 1'-0"

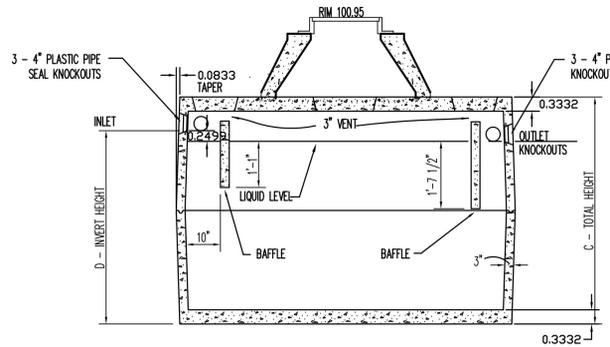
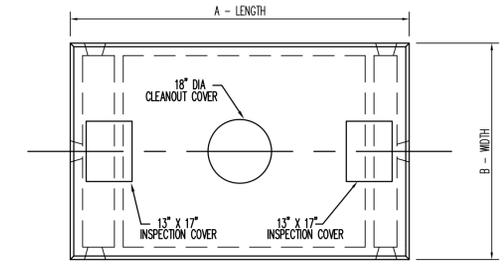


| | |
|--------------|--------|
| ITEM NO. | 1452 |
| GALLONS | 2000 |
| A | 76 |
| B | 66 |
| TOTAL WEIGHT | 15,800 |



- NOTES:**
- CONCRETE: 5000 PSI AFTER 28 DAYS.
 - REINFORCING: H 20 LOADING
 - INCLUDE CONICAL RISER WITH H-20 MANHOLE COVER

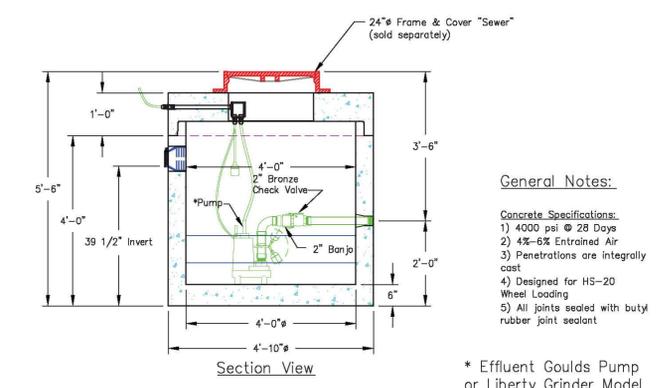
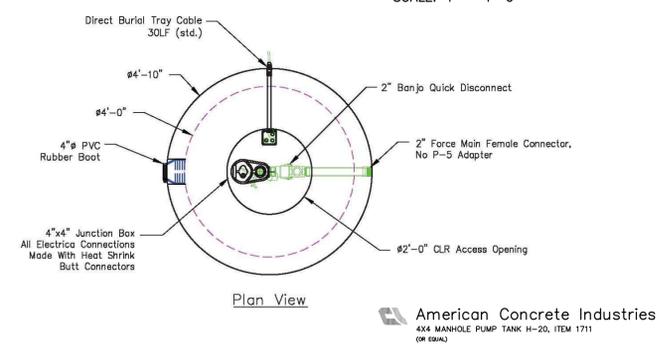
AMERICAN CONCRETE INDUSTRIES
VEAZIE, ME.
(OR EQUAL)



- NOTES:**
- CONCRETE: 4000 PSI AFTER 28 DAYS.
 - REINFORCING: H-20 LOADING
 - HEAVY DUTY SEPTIC TANK TOPS REINFORCED WITH 5/8" REBAR @ 12" O.C., EACH WAY.
 - KEYED JOINT SEALED WITH BUTYL RUBBER.
 - EXCAVATION MUST BE AT LEAST 12" WIDER AND LONGER THAN TANK SIZE.

| ITEM NO. | LIQUID CAPACITY | A | B | C | D | WEIGHT |
|----------|-----------------|-------|-------|-------|----------|--------|
| 1103 | 1000 | 8'-0" | 5'-1" | 3'-4" | H-6 1/2" | 8400 |

PRECAST CONCRETE RESIDENTIAL SEPTIC TANK
SCALE: N.T.S.



- General Notes:**
- Concrete Specifications:
- 4000 psi @ 28 Days
 - 4% - 6% Entrained Air
 - Penetrations are integrally cast
 - Designed for HS-20 Wheel Loading
 - All joints sealed with butyl rubber joint sealant
- * Effluent Goulds Pump or Liberty Grinder Model

4X4 MANHOLE PUMP TANK H-20
SCALE: N.T.S.

TYPICAL CATCH BASIN TYPE "F"
SCALE: 1/2" = 1'

PRECAST HOLDING TANK
SCALE: N.T.S.

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| | | | | | | | | | |
|----------------------|------|--------------------|------------------------|------------------|---|--------------|--|--------|--|
| DESIGNED BY: RLP/JCD | | | CLIENT | | TOWN OF BOWDOINHAM 13 SCHOOL STREET BOWDOINHAM, ME 04008 | PROJECT | | SCALE | |
| DRAWN BY: JCD | | | PROJECT NO. | | | AS SHOWN | | | |
| CHECKED BY: RLP | | | 16018 | | | DRAWING NO. | | | |
| APPROVED BY: RLP | | | 16018 Site Details.dwg | | | SHT. 5 of 19 | | | |
| DATE: 01/26/2018 | | ISSUED FOR BIDDING | | DATE: 01/26/2018 | | STATUS | | REV. 0 | |
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CONSTRUCTION NOTES
A. EROSION AND SEDIMENTATION CONTROL

A PERSON WHO CONDUCTS, OR CAUSES TO BE CONDUCTED, AN ACTIVITY THAT INVOLVES FILLING, DISPLACING OR EXPOSING SOIL OR OTHER EARTHEN MATERIALS SHALL TAKE MEASURES TO PREVENT UNREASONABLE EROSION OF SOIL OR SEDIMENT FROM THE PROJECT SITE OR INTO A PROTECTED NATURAL RESOURCE AS DEFINED IN 38 M.R.S. §480-B. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. EROSION CONTROL MEASURES MUST REMAIN FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN. THE DEPARTMENT HAS PREPARED PROTOCOLS FOR THE CONTROL OF EROSION AND SEDIMENTATION. SEE "MAINE EROSION AND SEDIMENT CONTROL BMPs MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION."

1. POLLUTION PREVENTION. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.

2. SEDIMENT BARRIERS. PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.

3. STABILIZED CONSTRUCTION ENTRANCE. PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

4. TEMPORARY STABILIZATION. WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL BE OPEN TO THE PUBLIC, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.

5. REMOVAL OF TEMPORARY MEASURES. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE. IT IS RECOMMENDED THAT SILT FENCE IS REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL TO AVOID ADDITIONAL SOIL DISTURBANCE.

6. PERMANENT STABILIZATION. IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR, OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND REESTABLISHED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR SOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

(a) SEEDED AREAS. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR KILLING OF THE TOPSOIL.

(b) SODDED AREAS. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE GROWING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

(c) PERMANENT MULCH. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.

(d) RIPRAP. FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIPRAP. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.

(e) AGRICULTURAL USE. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES (E.G., PIPELINES ACROSS CROP LAND), PERMANENT STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO AGRICULTURAL USE.

(f) PAVED AREAS. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED, PROVIDED IT IS FREE OF FINE MATERIALS THAT MAY RUNOFF WITH A RAIN EVENT.

(g) DITCHES, CHANNELS, AND SWALES. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS BUILT TO A FINAL GRADE WITH A WELL-GRADED BED AND A WELL-GRADED RIPRAP LINING, TURF REINFORCEMENT MAT, OR WITH ANOTHER NON-ERODIBLE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE CHANNEL BANKS, OR DOWN-CUTTING OF THE CHANNEL.

7. WINTER CONSTRUCTION. "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 15. IF DISTURBED AREAS ARE NOT STABILIZED WITH PERMANENT MEASURES BY NOVEMBER 1 OR NEW SOIL DISTURBANCE OCCURS AFTER NOVEMBER 1, BUT BEFORE APRIL 15, THEN THESE AREAS MUST BE PROTECTED AND RUNOFF FROM THEM MUST BE CONTROLLED BY ADDITIONAL MEASURES AND RESTRICTIONS.

(a) SITE STABILIZATION. FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.

(b) SEDIMENT BARRIERS. ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

(c) DITCH. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

(d) SLOPES. MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.

8. STORMWATER CHANNELS, DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE DESIGNED, CONSTRUCTED, AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSION CONTROL. DITCHES, SWALES AND OTHER OPEN STORMWATER CHANNELS MUST BE SIZED TO HANDLE, AT A MINIMUM, THE EXPECTED VOLUME RUN-OFF. EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING. PERMANENT STABILIZATION FOR CHANNELS IS ADDRESSED UNDER APPENDIX A(5)(G) ABOVE.

(a) THE CHANNEL SHOULD RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OR CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDE SLOPES.

(b) WHEN THE WATERSHED DRAINING TO A DITCH OR SWALE IS LESS THAN 1 ACRE OF TOTAL DRAINAGE AND LESS THAN ¼ ACRE OF IMPERVIOUS AREA, DIVERSION OF RUNOFF TO ADJACENT WOODED OR OTHERWISE VEGETATED BUFFER AREAS IS ENCOURAGED WHERE THE OPPORTUNITY EXISTS.

9. ROADS, GRAVEL AND PAVED ROADS MUST BE DESIGNED AND CONSTRUCTED WITH CROWNS OR OTHER MEASURES SUCH AS WATER TABLES TO ENSURE THAT STORMWATER IS DELIVERED IMMEDIATELY TO ADJACENT STABLE DITCHES, VEGETATED BUFFER AREAS, CATCH BASIN INLETS, OR STREET CURTURS.

10. CULVERTS. CULVERTS MUST BE SIZED TO AVOID UNINTENDED FLOODING OF UPSTREAM AREAS OR FREQUENT OVERTOPPING OF ROADWAYS. CULVERT INLETS MUST BE PROTECTED WITH APPROPRIATE MATERIALS FOR THE EXPECTED ENTRANCE VELOCITY, AND PROTECTION MUST EXTEND AT LEAST AS HIGH AS THE EXPECTED MAXIMUM ELEVATION OF STORAGE WATER. THE CULVERT CULVERT OUTLET DESIGN MUST INCORPORATE MEASURES, SUCH AS APRONS, TO PREVENT SCOUR OF THE STREAM CHANNEL. OUTLET PROTECTION MEASURES MUST BE DESIGNED TO STAY WITHIN THE CHANNEL LIMITS. THE DESIGN MUST TAKE ACCOUNT OF TAILWATER DEPTH.

11. PARKING AREAS. PARKING AREAS MUST BE CONSTRUCTED TO ENSURE RUNOFF IS DELIVERED TO ADJACENT SWALES, CATCH BASINS, CURB CUTTERS, OR BUFFER AREAS WITHOUT ERODING AREAS DOWNLOPE. THE PARKING AREA'S SUBBASE COMPACTION AND GRADING MUST BE DONE TO ENSURE RUNOFF IS EVENLY DISTRIBUTED TO ADJACENT BUFFERS OR SIDE SLOPES. CATCH BASINS MUST BE LOCATED AND SET TO PROVIDE ENOUGH STORAGE DEPTH AT THE INLET TO ALLOW INFLOW OF PEAK RUNOFF RATES WITHOUT BY-PASS OF RUNOFF TO OTHER AREAS.

B. INSPECTION AND MAINTENANCE

1. DURING CONSTRUCTION, THE FOLLOWING STANDARDS MUST BE MET DURING CONSTRUCTION.

(a) INSPECTION AND CORRECTIVE ACTION. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.

(b) MAINTENANCE. IF BEST MANAGEMENT PRACTICES (BMPs) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPs OR SIGNIFICANT REPAIR OF BMPs ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

(c) DOCUMENTATION. KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPs THAT NEED MAINTENANCE, BMPs THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPs ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPs, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

2. POST-CONSTRUCTION. THE FOLLOWING STANDARDS MUST BE MET AFTER CONSTRUCTION.

(a) PLAN. CARRY OUT AN APPROVED INSPECTION AND MAINTENANCE PLAN THAT IS CONSISTENT WITH THE MINIMUM REQUIREMENTS OF THIS SECTION. THE PLAN MUST ADDRESS INSPECTION AND MAINTENANCE OF THE PERMANENT EROSION CONTROL MEASURES AND STORAGE AREAS UNDER MANAGEMENT SYSTEM. THIS PLAN MAY BE COMBINED WITH THE PLAN LISTED IN SECTION 2(A) OF THIS APPENDIX. SEE SECTION 7(C)(2) FOR SUBMISSION REQUIREMENTS.

(b) INSPECTION AND MAINTENANCE. ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS. THE FOLLOWING AREAS, FACILITIES, AND MEASURES MUST BE INSPECTED AND IDENTIFIED DEFICIENCIES MUST BE CORRECTED. AREAS, FACILITIES, AND MEASURES OTHER THAN THOSE LISTED BELOW MAY ALSO REQUIRE INSPECTION ON A SPECIFIC SITE. INSPECTION OR MAINTENANCE TASKS OTHER THAN THOSE DISCUSSED BELOW MUST BE INCLUDED IN THE MAINTENANCE PLAN DEVELOPED FOR A SPECIFIC SITE.

(i) INSPECT VEGETATED AREAS, PARTICULARLY SLOPES AND EMBANKMENTS, EARLY IN THE GROWING SEASON OR AFTER HEAVY RAINS TO IDENTIFY ACTIVE OR POTENTIAL EROSION PROBLEMS. REPLANT BARE AREAS WITH SPARSE VEGETATION. WHERE DISTURBANCE IS EVIDENT, ARMOR THE AREA WITH AN APPROPRIATE LINING OR DIVERT THE EROSION FLOWS TO ON-SITE AREAS ABLE TO WITHSTAND THE CONCENTRATED FLOWS. SEE PERMANENT STABILIZATION STANDARDS IN APPENDIX A(5).

(ii) INSPECT DITCHES, SWALES AND OTHER OPEN STORMWATER CHANNELS IN THE SPRING, IN LATE FALL, AND AFTER HEAVY RAINS TO REMOVE ANY OBSTRUCTIONS TO FLOW. REMOVE ACCUMULATED SEDIMENTS AND DEBRIS. TO CONTROL VEGETATED GROWTH THAT COULD OBSTRUCT FLOW, AND TO REPAIR ANY EROSION OF THE DITCH LINING, VEGETATED DITCHES MUST BE MOWED AT LEAST ANNUALLY OR OTHERWISE MAINTAINED TO CONTROL THE GROWTH OF WOODY VEGETATION AND MAINTAIN FLOW CAPACITY. ANY WOODY VEGETATION GROWING THROUGH RIPRAP LININGS MUST ALSO BE REMOVED. REPAIR ANY SLUMPING SIDE SLOPES AS SOON AS PRACTICABLE. IF THE DITCH HAS A RIPRAP LINING, REPLACE RIPRAP ON AREAS WHERE ANY UNDERLYING FILTER FABRIC OR UNDERDRAIN GRAVEL IS SHOWING THROUGH THE STONE OR WHERE STONES HAVE DISLODGED. THE CHANNEL MUST RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OR CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDESLOPES.

(iii) INSPECT CULVERTS IN THE SPRING, IN LATE FALL, AND AFTER HEAVY RAINS TO REMOVE ANY OBSTRUCTIONS TO FLOW. REMOVE ACCUMULATED SEDIMENTS AND DEBRIS AT THE INLET, AT THE OUTLET, AND WITHIN THE CONDUIT; AND TO REPAIR ANY EROSION DAMAGE AT THE CULVERT'S INLET AND OUTLET.

(iv) INSPECT AND CLEAN OUT CATCH BASINS. CLEAN-OUT MUST INCLUDE THE REMOVAL AND LEGAL DISPOSAL OF ANY ACCUMULATED SEDIMENTS AND DEBRIS AT THE BOTTOM OF THE BASIN. AT ANY INLET GRATES, AT ANY INFLOW CHANNELS TO THE BASIN, AND AT ANY PIPES BETWEEN BASINS, THE BASIN OUTLET IS DESIGNED TO TRAP FLOATABLE MATERIALS, THEN REMOVE THE FLOATING DEBRIS AND ANY FLOWING OILS (USING OIL-ABSORBENT PADS).

(v) INSPECT RESOURCE AND TREATMENT BUFFERS ONCE A YEAR FOR EVIDENCE OF EROSION, CONCENTRATING FLOW, AND ENCROACHMENT BY DEVELOPMENT. IF FLOWS ARE CONCENTRATING WITHIN A BUFFER, SITE GRADING, LEVEL SPREADERS, OR DITCH TURN-OUTS MUST BE USED TO ENSURE A MORE EVEN DISTRIBUTION OF FLOW INTO A BUFFER. CHECK DOWN SLOPE OF ALL SPREADERS AND TURN-OUTS FOR EROSION. IF EROSION IS PRESENT, ADJUST OR MODIFY THE SPREADER'S OR TURNOUT'S LIP TO ENSURE A BETTER DISTRIBUTION OF FLOW INTO A BUFFER. CLEAN-OUT ANY ACCUMULATION OF SEDIMENT WITHIN THE SPREADER BAYS OR TURN-OUT POOLS.

(vi) INSPECT AT LEAST ONCE PER YEAR, EACH STORMWATER MANAGEMENT POND OR BASIN, INCLUDING THE POND'S EMBANKMENTS, OUTLET STRUCTURE, AND EMERGENCY SPILLWAY. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENTS IN THE POND. CONTROL WOODY VEGETATION ON THE POND'S EMBANKMENTS.

(vii) INSPECT AT LEAST ONE PER YEAR, EACH UNDERDRAIN FILTER, INCLUDING THE FILTER EMBANKMENTS, VEGETATION, UNDERDRAIN PIPING, AND OVERFLOW SPILLWAY. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENTS IN THE FILTER. IF NEEDED, REHABILITATE ANY CLOGGED SURFACE LININGS, AND FLUSH UNDERDRAIN PIPING.

(viii) INSPECT EACH MANUFACTURED SYSTEM INSTALLED ON THE SITE, INCLUDING THE SYSTEM'S INLET, TREATMENT CHAMBER(S), AND OUTLET AT LEAST ONCE PER YEAR, OR IN ACCORDANCE WITH THE MAINTENANCE GUIDELINES RECOMMENDED BY THE MANUFACTURER BASED ON THE ESTIMATED RUNOFF AND POLLUTANT LOAD EXPECTED TO THE SYSTEM FROM THE PROJECT. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENTS, DEBRIS, AND CONTAMINATED WATERS FROM THE SYSTEM AND, IF APPLICABLE, REMOVE AND REPLACE ANY CLOGGED OR SPENT FILTER MEDIA.

(c) REGULAR MAINTENANCE

(i) CLEAR ACCUMULATIONS OF WINTER SAND IN PARKING LOTS AND ALONG ROADWAYS AT LEAST ONCE A YEAR, PREFERABLY IN THE SPRING. ACCUMULATIONS ON PAVEMENT MAY BE REMOVED BY PAVEMENT SWEEPING. ACCUMULATIONS OF SAND ALONG ROAD SHOULDERS MAY BE REMOVED BY GRADING EXCESS SAND TO THE PAVEMENT EDGE AND REMOVING IT MANUALLY OR BY A FRONT-END LOADER. GRADING OF GRAVEL ROADS, OR GRADING OF THE GRAVEL SHOULDERS OF GRAVEL OR PAVED ROADS, MUST BE ROUTINELY PERFORMED TO ENSURE THAT STORMWATER DRAINS IMMEDIATELY OFF THE ROAD SURFACE TO ADJACENT BUFFER AREAS OR STABLE DITCHES, AND IS NOT IMPEDED BY ACCUMULATIONS OF GRADED MATERIAL ON THE ROAD SHOULDER OR BY EXCAVATION OF FALSE DITCHES IN THE SHOULDER. IF WATER BARS OR OPEN-TOP CULVERTS ARE USED TO DIVERT RUNOFF FROM ROAD SURFACES, CLEAN-OUT ANY SEDIMENTS WITHIN OR AT THE OUTLET OF THESE STRUCTURES TO RESTORE THEIR FUNCTION.

(ii) MANEAGE EACH BUFFER'S VEGETATION CONSISTENTLY WITH THE REQUIREMENTS IN ANY DEED RESTRICTIONS FOR THE BUFFER. WOODED BUFFERS MUST REMAIN FULLY WOODED AND HAVE NO DISTURBANCE TO THE DUFF LAYER. VEGETATION IN NON-WOODED BUFFERS MAY NOT BE CUT MORE THAN THREE TIMES PER YEAR, AND MAY NOT BE CUT SHORTER THAN SIX INCHES.

(d) DOCUMENTATION. KEEP A LOG (REPORT) SUMMARIZING INSPECTIONS, MAINTENANCE, AND ANY CORRECTIVE ACTIONS TAKEN. THE LOG MUST INCLUDE THE DATE ON WHICH EACH INSPECTION OR MAINTENANCE TASK WAS PERFORMED, A DESCRIPTION OF THE INSPECTION FINDINGS OR MAINTENANCE COMPLETED, AND THE NAME OF THE INSPECTOR OR MAINTENANCE PERSONNEL PERFORMING THE TASK. IF A MAINTENANCE TASK REQUIRES THE CLEAN-OUT OF ANY SEDIMENTS OR DEBRIS, INDICATE WHERE THE SEDIMENT AND DEBRIS WAS DISPOSED AFTER REMOVAL. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY PROVIDED TO THE DEPARTMENT UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST FIVE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

C. HOUSEKEEPING

THESE PERFORMANCE STANDARDS APPLY TO ALL PROJECTS EXCEPT FOR STORMWATER PBR PROJECTS.

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

NOTE: ANY SPILL OR RELEASE OF TOXIC OR HAZARDOUS SUBSTANCES MUST BE REPORTED TO THE DEPARTMENT. FOR OIL SPILLS, CALL 1-800-482-0777 WHICH IS AVAILABLE 24 HOURS A DAY. FOR SPILLS OF TOXIC OR HAZARDOUS MATERIAL, CALL 1-800-452-6446 WHICH IS AVAILABLE 24 HOURS A DAY. FOR MORE INFORMATION, VISIT THE DEPARTMENT'S WEBSITE AT: [HTTP://WWW.MAINE.GOV/DEP/SPILLS/EMERGSPILLRESP/](http://www.maine.gov/dep/spills/emergspillresp/)

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSED INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

NOTE: LACK OF APPROPRIATE POLLUTANT REMOVAL BEST MANAGEMENT PRACTICES (BMPs) MAY RESULT IN VIOLATIONS OF THE GROUNDWATER QUALITY STANDARD ESTABLISHED BY 38 M.R.S.A. §465-C(1).

3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. DUST CONTROL MEASURES, SUCH AS WATER SPRAYING, MUST BE USED TO PREVENT DUST FROM BEING CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEPED IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS THAT EXPERIENCE FUGITIVE DUST PROBLEMS SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

NOTE: DEWATERING A STREAM WITHOUT A PERMIT FROM THE DEPARTMENT MAY VIOLATE STATE WATER QUALITY STANDARDS AND THE NATURAL RESOURCES PROTECTION ACT.

4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

NOTE: TO PREVENT THESE MATERIALS FROM BECOMING A SOURCE OF POLLUTANTS, CONSTRUCTION AND POST-CONSTRUCTION ACTIVITIES RELATED TO A PROJECT MAY BE REQUIRED TO COMPLY WITH APPLICABLE PROVISIONS OF RULES RELATED TO SOLID, UNIVERSAL, AND HAZARDOUS WASTE, INCLUDING, BUT NOT LIMITED TO, THE MAINE SOLID WASTE AND HAZARDOUS WASTE MANAGEMENT RULES; MAINE HAZARDOUS WASTE MANAGEMENT RULES; MAINE OIL CONVEYANCE AND STORAGE RULES; AND MAINE PESTICIDE REQUIREMENTS.

5. EXCAVATION DE-WATERING. EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

NOTE: DEWATERING CONTROLS ARE DISCUSSED IN THE "MAINE EROSION AND SEDIMENT CONTROL BMPs, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION."

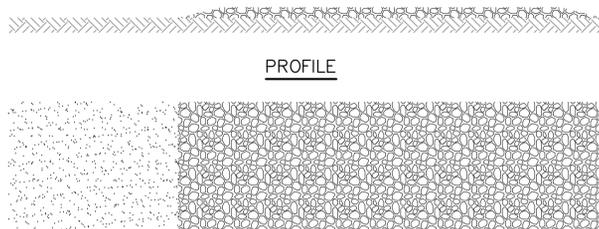
6. AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:

- (a) DISCHARGES FROM FIREFIGHTING ACTIVITY;
- (b) FIRE HYDRANT FLUSHINGS;
- (c) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
- (d) DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX C(3);
- (e) ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
- (f) PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
- (g) UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
- (h) UNCONTAMINATED GROUNDWATER OR SPRING WATER;
- (i) FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
- (j) UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5));
- (k) POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
- (l) LANDSCAPE IRRIGATION.

7. UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL UNDER THIS CHAPTER DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:

- (a) WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
- (b) FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
- (c) SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
- (d) TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

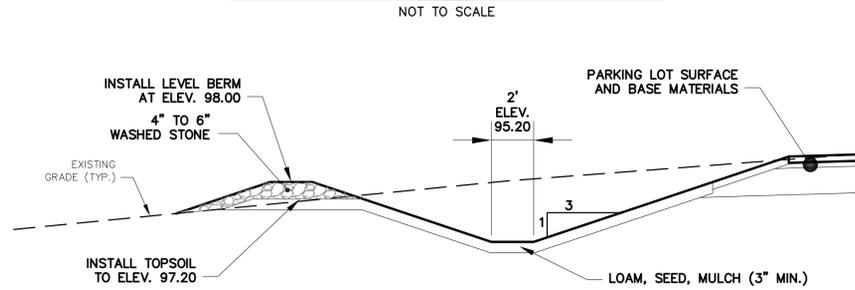
8. ADDITIONAL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.



CONSTRUCTION SPECIFICATIONS

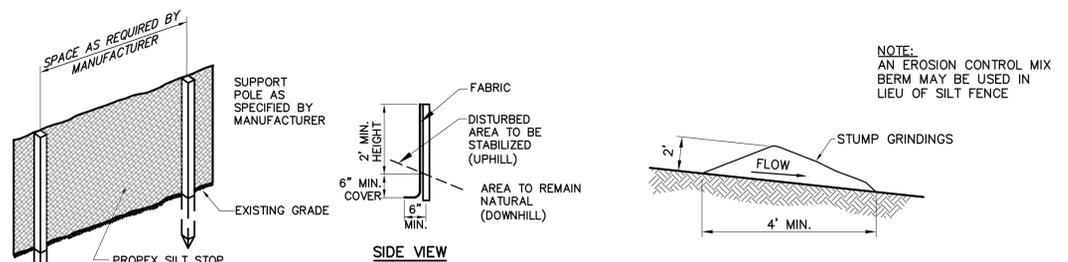
1. STONE SIZE – AASHTO DESIGNATION M 43, SIZE NO. 2 (2 1/2" TO 1 1/2"). USE FIELD OR BANK RUN STONE.
2. LENGTH – AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
3. THICKNESS – NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH – NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING – WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CLEAN STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
6. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USE TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

CONSTRUCTION ENTRANCE DETAIL



LEVEL LIP SPREADER

SCALE: 1" = 4'-0"

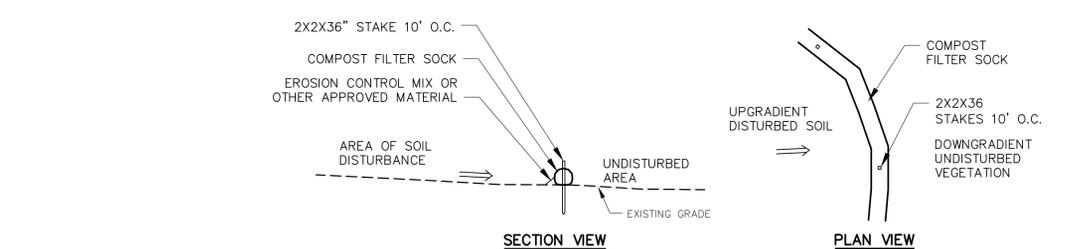


EROSION CONTROL MIX BERM DETAIL

SCALE: N.T.S.

SILT FENCE DETAIL

SCALE: N.T.S.

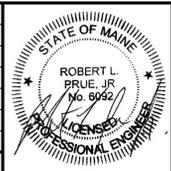


COMPOST FILTER SOCK DETAIL

SCALE: 1" = 5'-0"

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| | | | | | |
|-----|-----------|--------------------|-----|------|------|
| 0 | 1/26/2018 | ISSUED FOR BIDDING | JCD | RLP | RLP |
| REV | DATE | STATUS | BY | CHKD | APPD |



DESIGNED BY: RLP/JCD
 DRAWN BY: JCD
 CHECKED BY: RLP
 APPROVED BY: RLP
 DATE: 01/26/2018

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| | | | |
|---------|--|-------------|------------------------|
| PROJECT | PUBLIC WORKS FACILITY | SCALE | AS SHOWN |
| TITLE | STORMWATER TREATMENT SITE DETAILS | PROJECT NO. | 16018 |
| | | DRAWING NO. | 16018 Site Details.dwg |
| | | SHT. | 6 of 19 |
| | | REV. | 0 |

INSULATION NOTE:
INSULATION SHALL COMPLY WITH THE 2009 INTERNATIONAL ENERGY CODE AS FOLLOWS.

WALLS- R-13 FACED FIBERGLASS BATTS COMPRESSED OUTSIDE STEEL FRAMING WITH R-5.6 CONTINUOUS RIGID INSULATION OUTSIDE THE FIBERGLASS BATTS OR INSIDE THE FRAMING
ROOF - R-13 FACED FIBERGLASS BATTS ABOVE PURLINS WITH R-3.5 THERMAL SPACER BLOCKS BETWEEN PURLINS AND ROOF AND R-19 UNFACED FIBERGLASS BATTS PARALLEL TO PURLINS.

DOORS AND WINDOWS:
DOORS AND WINDOWS SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS.

OVERHEAD DOORS:
R17.5 2" PANELS WITH 3/4 HP HIGH LIFT OPERATORS.

1. C.H.I. OVERHEAD DOORS, MODEL 3216.
2. OVERHEAD DOOR COMPANY, MODEL 592
3. APPROVED EQUAL

INTERIOR OVERHEAD DOOR, 20 GAUGE ROLLING SERVICE DOOR WITH APPROVED POWDER COATING:

1. C.H.I. OVERHEAD DOOR COMPANY
2. OVERHEAD DOOR COMPANY
3. RAYNOR GARAGE DOORS
4. APPROVED EQUAL

PERSONNEL DOORS:
18 GAUGE A60 GALVANEAL COATED STEEL DOORS W/ 16 GAUGE A60 GALVANEAL WELDED EWA PREPPED. INTERIOR DOORS MAY BE KNOCKED DOWN PREPPED.

1. J/R METAL FRAMES, BELGRADE, MAINE
2. APPROVED EQUAL

CASEMENT WINDOWS:
1. SPENCER WALCOTT CASEMENT VINYL WINDOWS, MATHEWS BROTHERS COMPANY, BELFAST, MAINE
2. APPROVED EQUAL

COMPRESSED AIR SYSTEMS:
INSTALL COMPRESSED AIR DISTRIBUTION AS FOLLOWS:

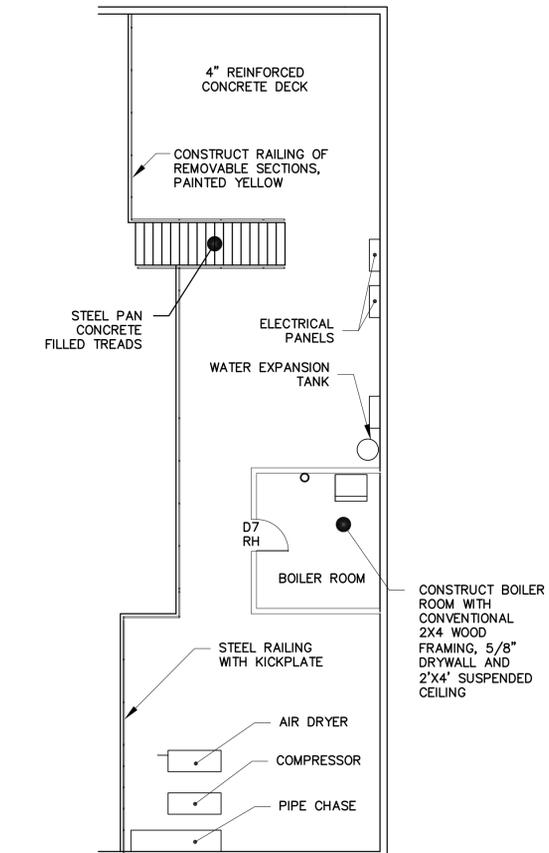
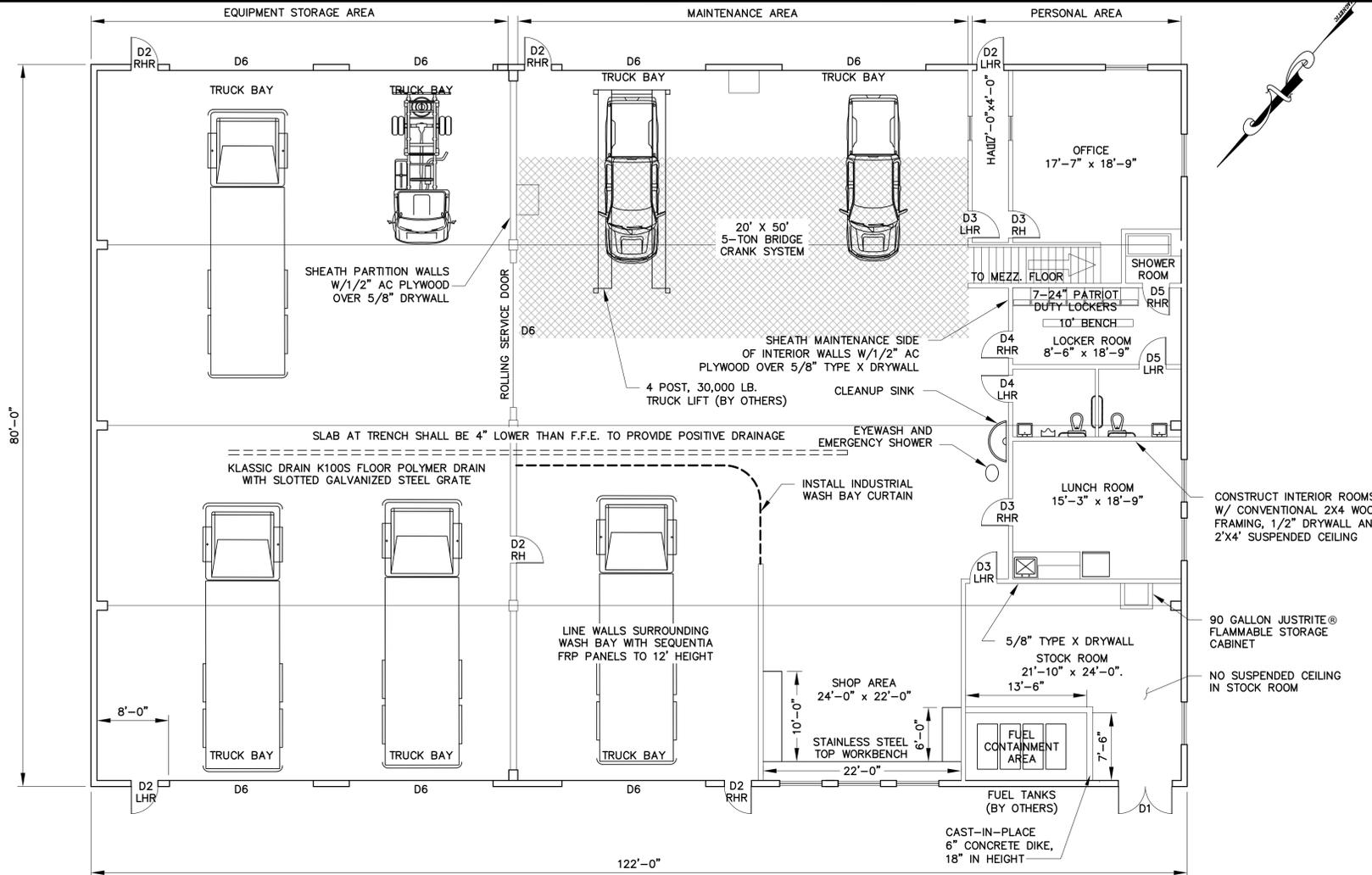
- 3 CONNECTIONS IN THE SHOP AND ONE DRAIN VALVE
- 1 CONNECTION AND DRAIN VALVE IN EACH TRUCK BAY IN THE MAINTENANCE AREA (3 TOTAL)
- 1 CONNECTION AND DRAIN VALVE BETWEEN TRUCK BAYS IN THE STORAGE AREA (2 TOTAL)

MOTOR OIL /HYDRAULIC FLUID DISTRIBUTION:
INSTALL TWO PNEUMATIC PUMPS AND PIPING TO DISTRIBUTE MOTOR OIL AND HYDRAULIC FLUID FROM TANKS IN THE STOCK ROOM TO REEL HOSES/NOZZLES IN MAINTENANCE BAY.

FLOORING:
FLOOR SURFACE TREATMENT SHALL COMPLY WITH THE FOLLOWING SCHEDULE:

- OFFICE, BATHROOMS, LOCKER ROOM, LUNCH ROOM, AND HALL: USE 3/32" VINYL COMPOSITE TILE (VCT), COOL WHITE, ARMSTRONG ITEM #51899 OR APPROVED EQUIVALENT.

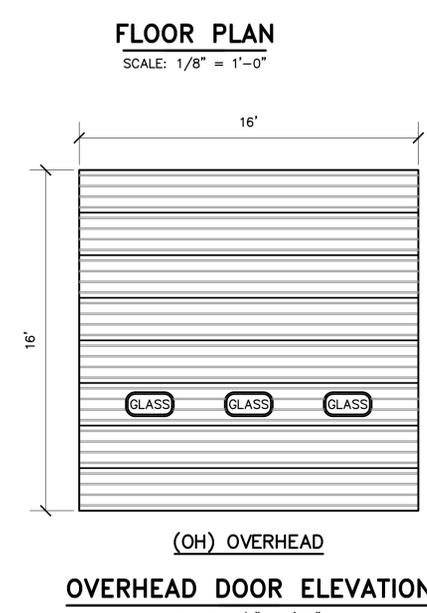
- ALL OTHER FLOOR SURFACES USE: SALTGUARD® WB.



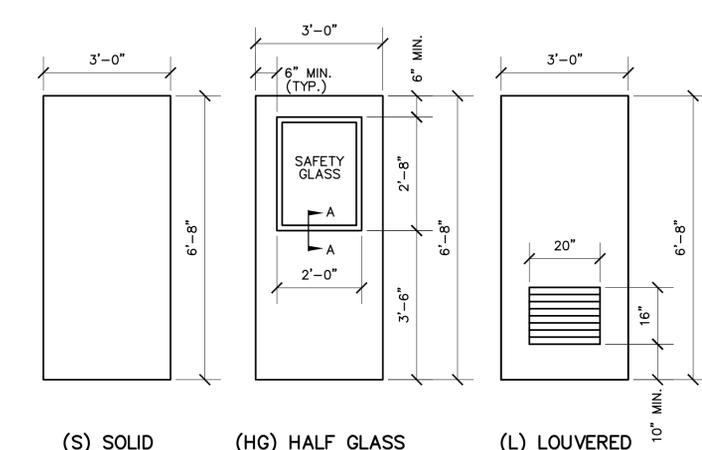
MEZZANINE FLOOR PLAN
SCALE: 1/8" = 1'-0"

| DOOR SCHEDULE | | | | | | | |
|---------------|----------|------------------|--------|------------------------|----------------|---------------|------------|
| DOOR NO. | QUANTITY | HAND | TYPE | SIZE | ROUGH OPENING | TYPE | MATERIAL |
| D1 | 1 | --- | DOUBLE | 6'-0" x 6'-8" x 1 3/4" | 6'-4" x 6'-10" | S (EXTERIOR) | INS. METAL |
| D2 | 2 | LHR RHR RH | SINGLE | 3'-0" x 6'-8" x 1 3/4" | 3'-4" x 6'-10" | HG (EXTERIOR) | INS. METAL |
| D3 | 2 | LHR RHR RH | SINGLE | 3'-0" x 6'-8" x 1 3/4" | 3'-4" x 6'-10" | HG (FR-90) | METAL |
| D4 | 1 | LHR RHR | SINGLE | 3'-0" x 6'-8" x 1 3/4" | 3'-4" x 6'-10" | S (FR-90) | METAL |
| D5 | 1 | LHR RHR | SINGLE | 3'-0" x 6'-8" x 1 3/4" | 3'-4" x 6'-10" | S (INTERIOR) | METAL |
| D6 | 8 | --- | --- | 16'-0" x 16'-0" x 2" | --- | OH | INS. METAL |
| D7 | 1 | RH | SINGLE | 16'-0" x 16'-0" x 2" | --- | L (INTERIOR) | METAL |

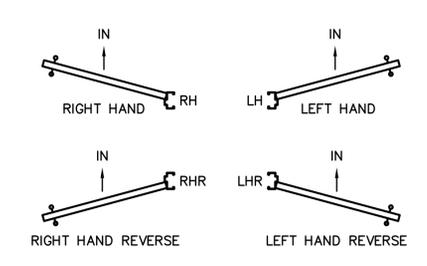
| WINDOW SCHEDULE | | | | |
|-----------------|----------|-----------------|-------------------|--------------------------|
| ROOM | QUANTITY | TYPE | ROUGH OPENING | UNIT SIZE |
| SHOP AREA | 3 | DOUBLE CASEMENT | 4'-9" x 3'-0 1/2" | 4'-8 1/2" x 2'-11 15/16" |
| STOCK ROOM | 1 | DOUBLE CASEMENT | 4'-9" x 3'-0 1/2" | 4'-8 1/2" x 2'-11 15/16" |
| LUNCH ROOM | 2 | DOUBLE CASEMENT | 4'-9" x 3'-0 1/2" | 4'-8 1/2" x 2'-11 15/16" |
| OFFICE | 2 | DOUBLE CASEMENT | 4'-9" x 3'-0 1/2" | 4'-8 1/2" x 2'-11 15/16" |
| HALL | 2 | SINGLE CASEMENT | 2'-8" x 3'-0 1/2" | 2'-7 1/2" x 2'-11 15/16" |



OVERHEAD DOOR ELEVATION
SCALE: 1/4" = 1'-0"

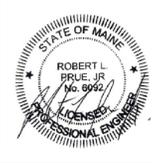


DOOR ELEVATIONS
SCALE: 1/2" = 1'-0"



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

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DESIGNED BY: RLP/JCD
DRAWN BY: JCD
CHECKED BY: RLP
APPROVED BY: RLP
DATE: 01/26/2018

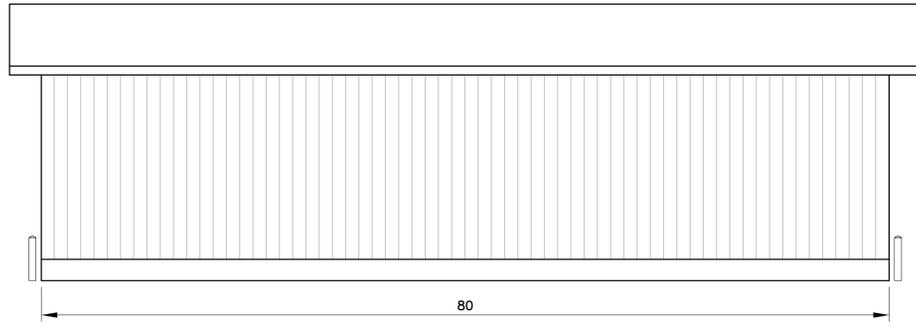
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PROJECT
PUBLIC WORKS FACILITY
TITLE
GARAGE FLOOR PLAN

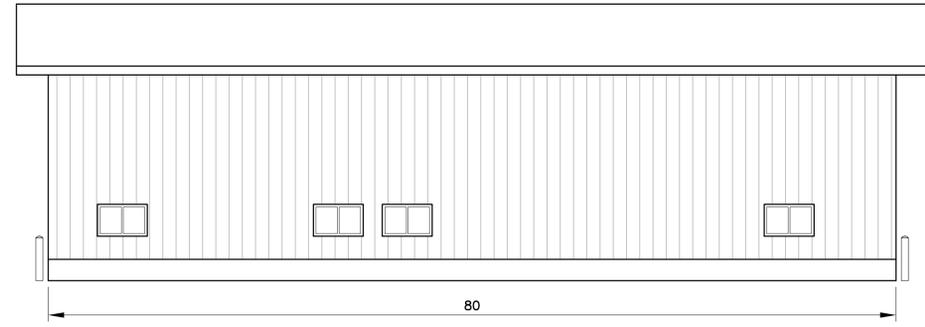
SCALE AS SHOWN
PROJECT NO. 16018
DRAWING NO. 16018 Garage FP.dwg
SHT. 7 of 19 REV. 0

| REV | DATE | STATUS | BY | CHKD | APPD |
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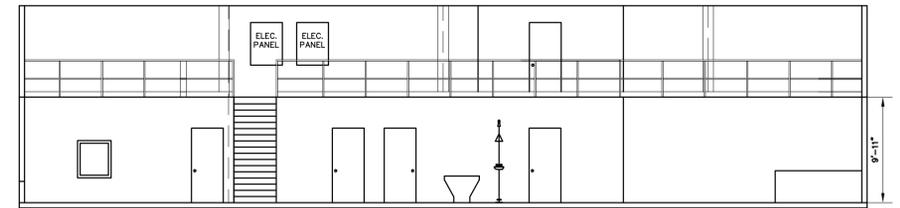
NORTHEAST ELEVATION

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



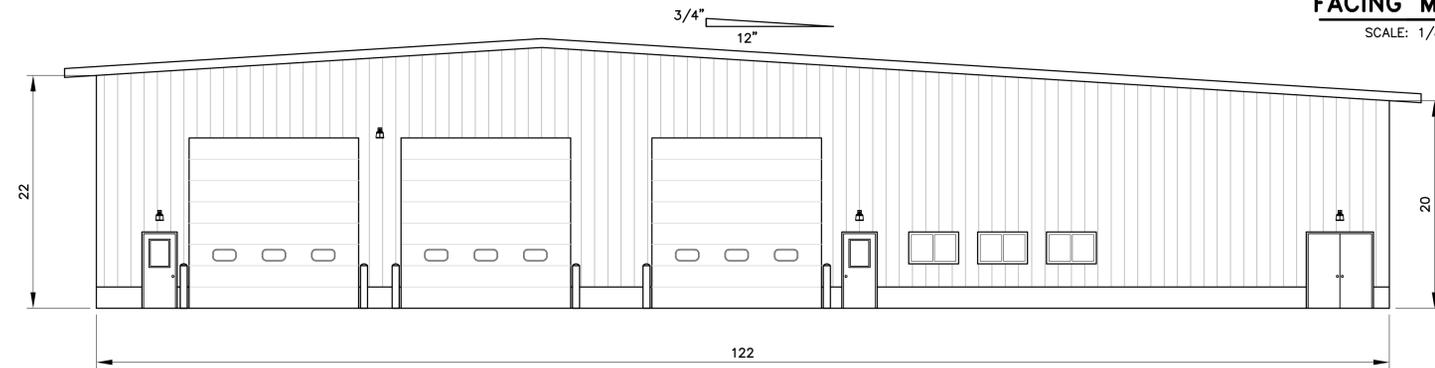
SOUTHWEST ELEVATION

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



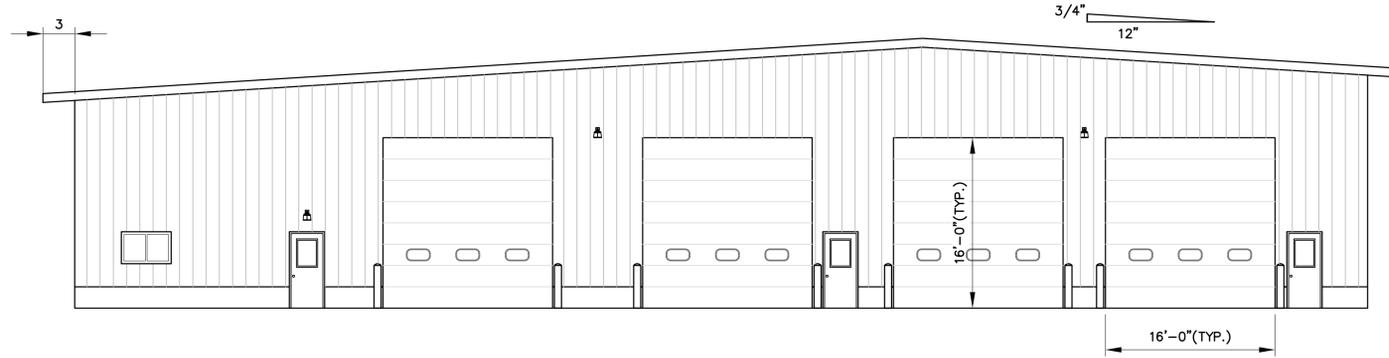
**INTERIOR ELEVATION
FACING MEZZANINE**

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



NORTHWEST ELEVATION

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



SOUTHEAST ELEVATION

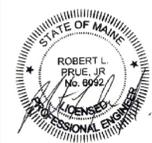
SCALE: 1/8" = 1'-0"

STEEL SHEATHING NOTE:
STEEL SHEATHING SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS.

1. WALLS-26 GAUGE STEEL PANELS
2. ROOF -24 GAUGE STANDING SEAM STEEL PANELS
3. A FULLY ENGINEERED STEEL BUILDING DESIGN SHALL BE SUPPLIED BY THE MANUFACTURER BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF MAINE.
4. SEE CONSTRUCTION SPECIFICATIONS FOR FURTHER REQUIREMENTS

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 DATE: 01/26/2018

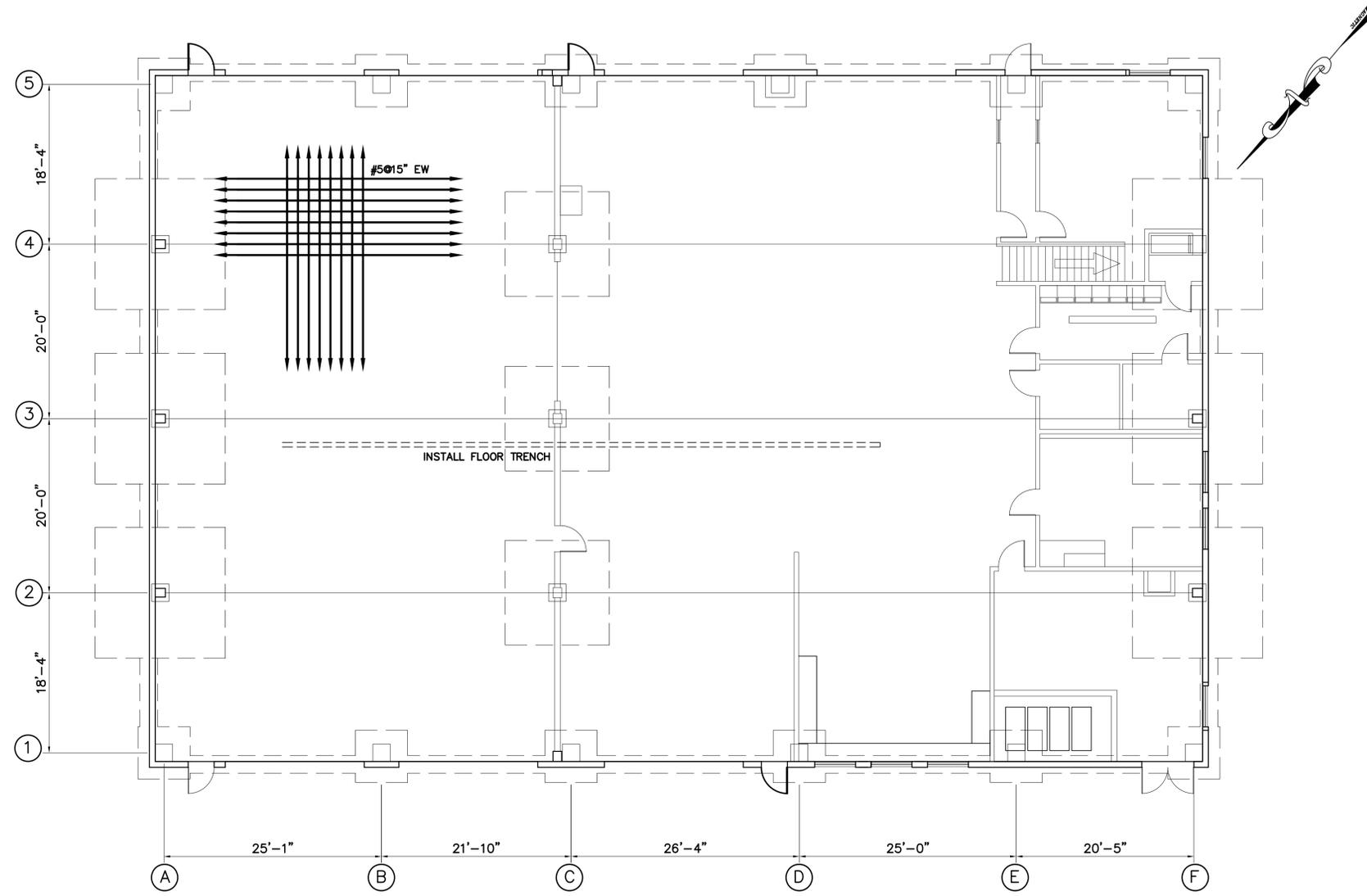
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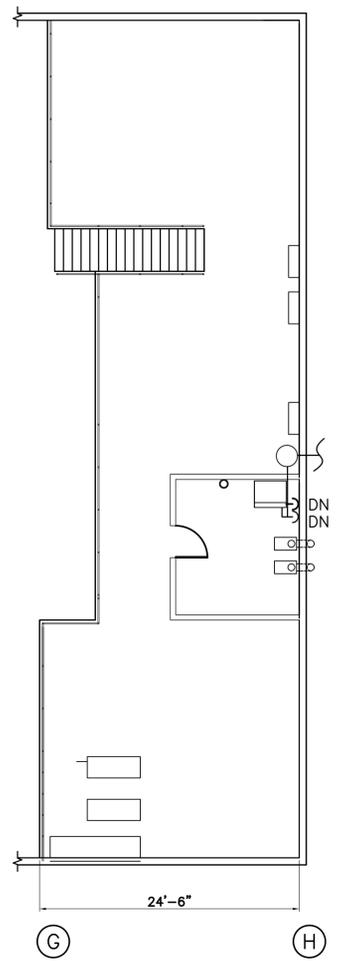
PROJECT
PUBLIC WORKS FACILITY

TITLE
**GARAGE
 ELEVATION VIEWS**

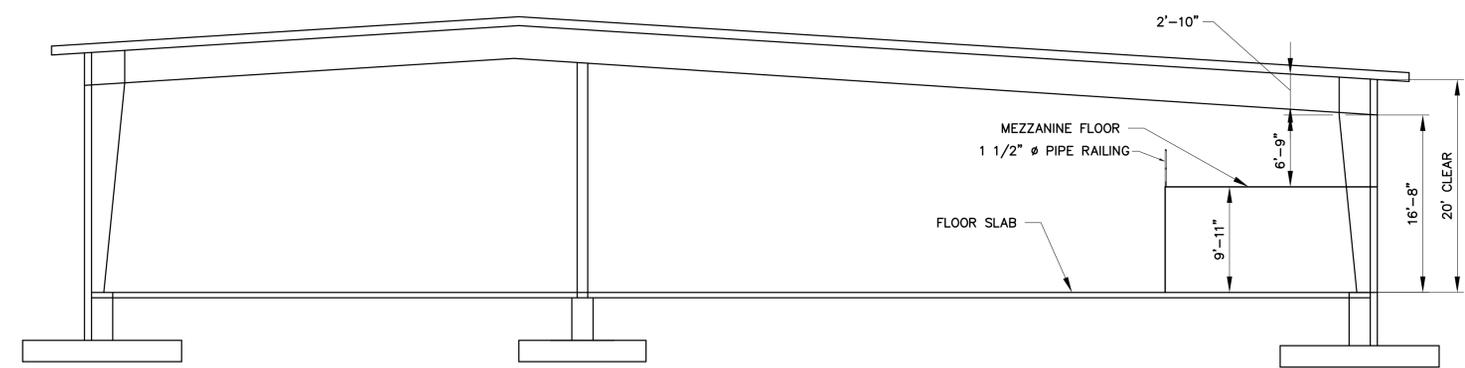
SCALE AS SHOWN
 PROJECT NO. 16018
 DRAWING NO. 16018 Garage FP.dwg
 SHT. 8 of 19 REV. 0



FLOOR PLAN
SCALE: 1/8" = 1'-0"



MEZZANINE PLAN
SCALE: 1/8" = 1'-0"

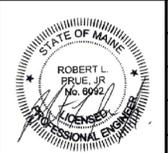


SECTION VIEW (LINE #3)
SCALE: 1/8" = 1'-0"

STEEL BUILDING DESIGN NOTE:
THIS DRAWING HAS BEEN PROVIDED FOR ILLUSTRATIVE PURPOSES.
THE STRUCTURAL DESIGN OF THE STEEL BUILDING INCLUDING BUT NOT LIMITED TO THE FRAMING MEMBERS, SHEATHING, CONCRETE FOUNDATION, MEZZANINE AND ALL RELATED FASTENING AND COATING SYSTEMS SHALL BE PROVIDED BY THE STEEL BUILDING MANUFACTURER BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF MAINE.

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DATE: 01/26/2018

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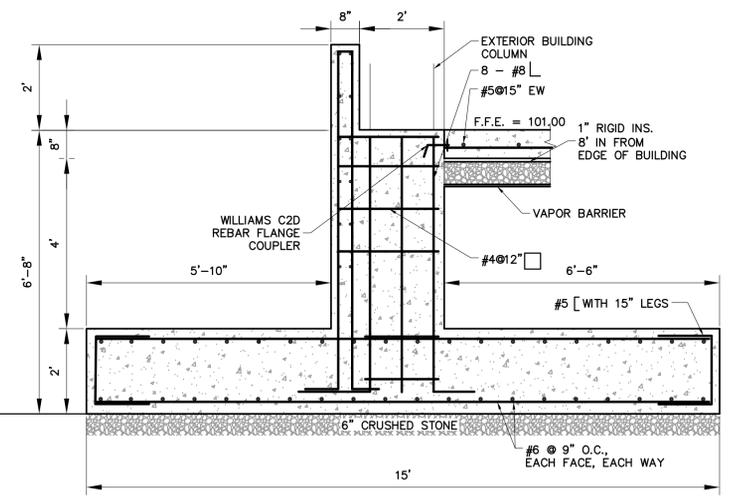
PROJECT
PUBLIC WORKS FACILITY
TITLE
GARAGE STRUCTURAL PLAN

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| SCALE | AS SHOWN |
| PROJECT NO. | 16018 |
| DRAWING NO. | 16018 Garage FP.dwg |
| SHT. | 9 of 19 |
| REV. | 0 |

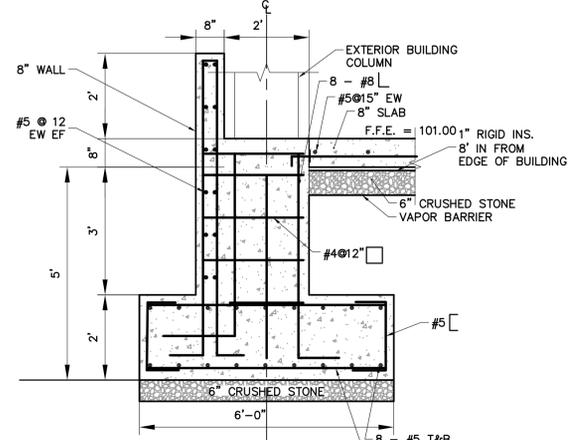
~ PRELIMINARY NOT FOR CONSTRUCTION ~

STRUCTURAL DESIGN NOTES:

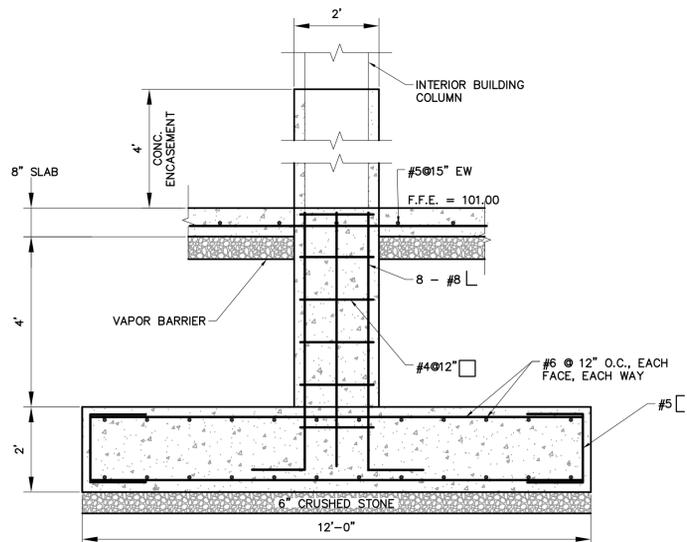
- FOOTING DESIGN PROVIDED BY CALDERWOOD ENGINEERING BASED ON PINE TREE ENGINEERING DRAWINGS TITLED "PUBLIC WORKS FACILITY, TOWN OF BOWDOINHAM, MAINE" DATED 10/06/2017 WITH 80'X160' FOOTPRINT.
- CONCRETE $F'c = 4,000$ PSI
- REINFORCING STEEL $F_y = 60$ KSI
- FOOTING DESIGNED FOR THE FOLLOWING MAXIMUM LOADS. IF FINAL BUILDING LOADS EXCEED THESE VALUES, FOOTINGS WILL NEED TO BE REEVALUATED.
 - A) FOOTING AT COLUMN LINE A
 $M_n = 487.58$ KIP-FT
 $P_n = 125.99$ KIPS
 $V_n = 40.00$ KIPS
 - B) FOOTING AT COLUMN LINE C
 $P_n = 106.85$
 - C) FOOTING AT COLUMN LINE E
 $P_n = 158.83$
 - D) FOOTING AT COLUMN LINE H
 $M_n = 159.39$ KIP-FT
 $P_n = 122.58$ KIPS
 $V_n = 45.04$ KIPS
- COLUMN LINES AT LOCATIONS SHOWN ON THE PLANS REFERENCED ABOVE.
- DURING DESIGN CALDERWOOD ENGINEERING ASSUMED FIXED CONNECTIONS TO FOOTINGS AT END WALLS AND PINNED CONNECTIONS AT INTERMEDIATE COLUMN LINES. IF FINAL BUILDING DESIGN DOES NOT MATCH THESE CONDITIONS, FOOTINGS WILL NEED TO BE REEVALUATED.



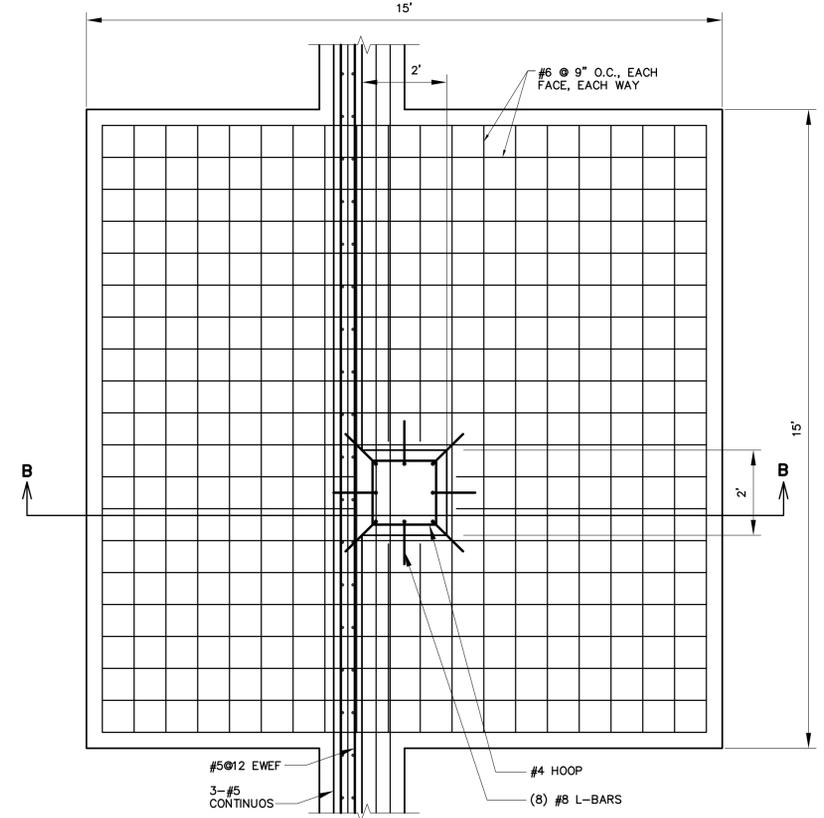
SECTION B-B
SCALE: 1/2" = 1'-0"



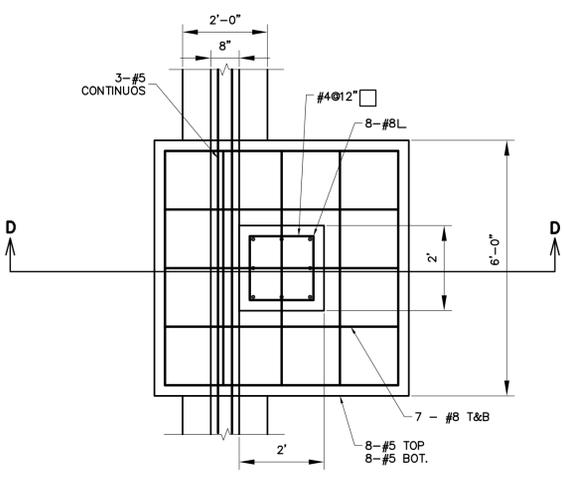
SECTION D-D
SCALE: 1/2" = 1'-0"



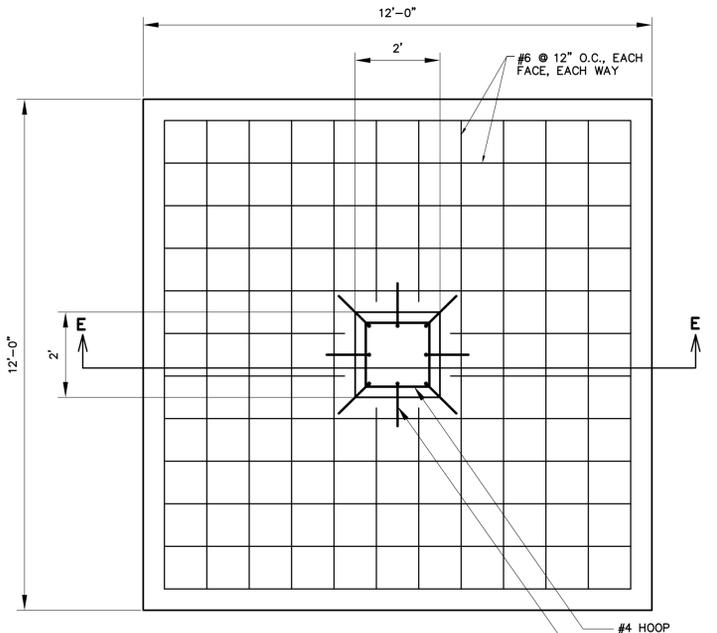
SECTION E-E
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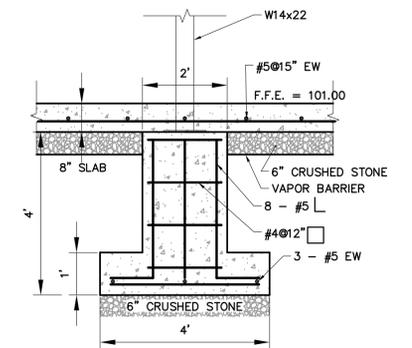
PLAN EXTERIOR COLUMN
SCALE: 1/2" = 1'-0"



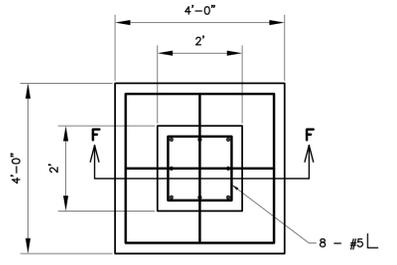
PLAN WIND POST
SCALE: 1/2" = 1'-0"



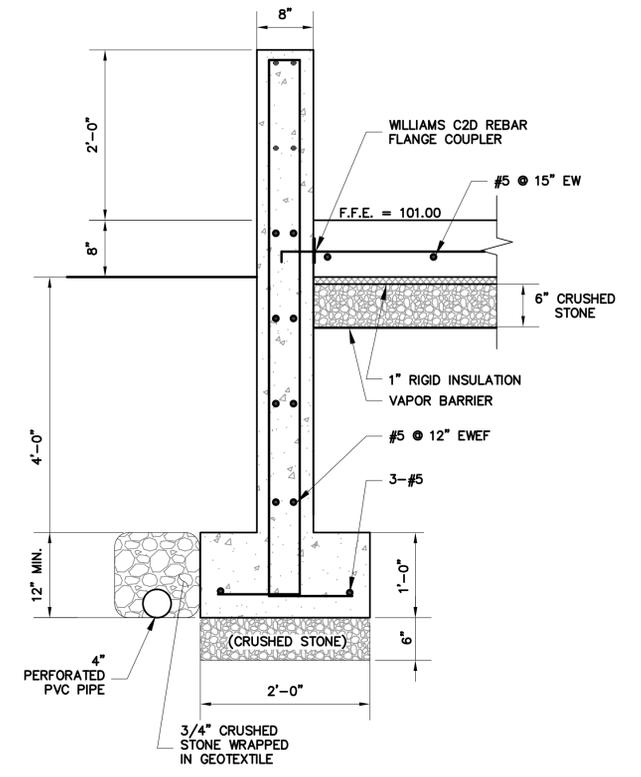
PLAN INTERIOR COLUMN
SCALE: 1/2" = 1'-0"



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

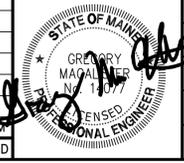


PLAN MEZZANINE COLUMN
SCALE: 1/2" = 1'-0"



TYPICAL FOOTING DETAIL
SCALE: 1" = 1'-0"

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DESIGNED BY: TDC
 DRAWN BY: JCD
 CHECKED BY: GNM
 APPROVED BY: GNM
 DATE: 1/24/2018

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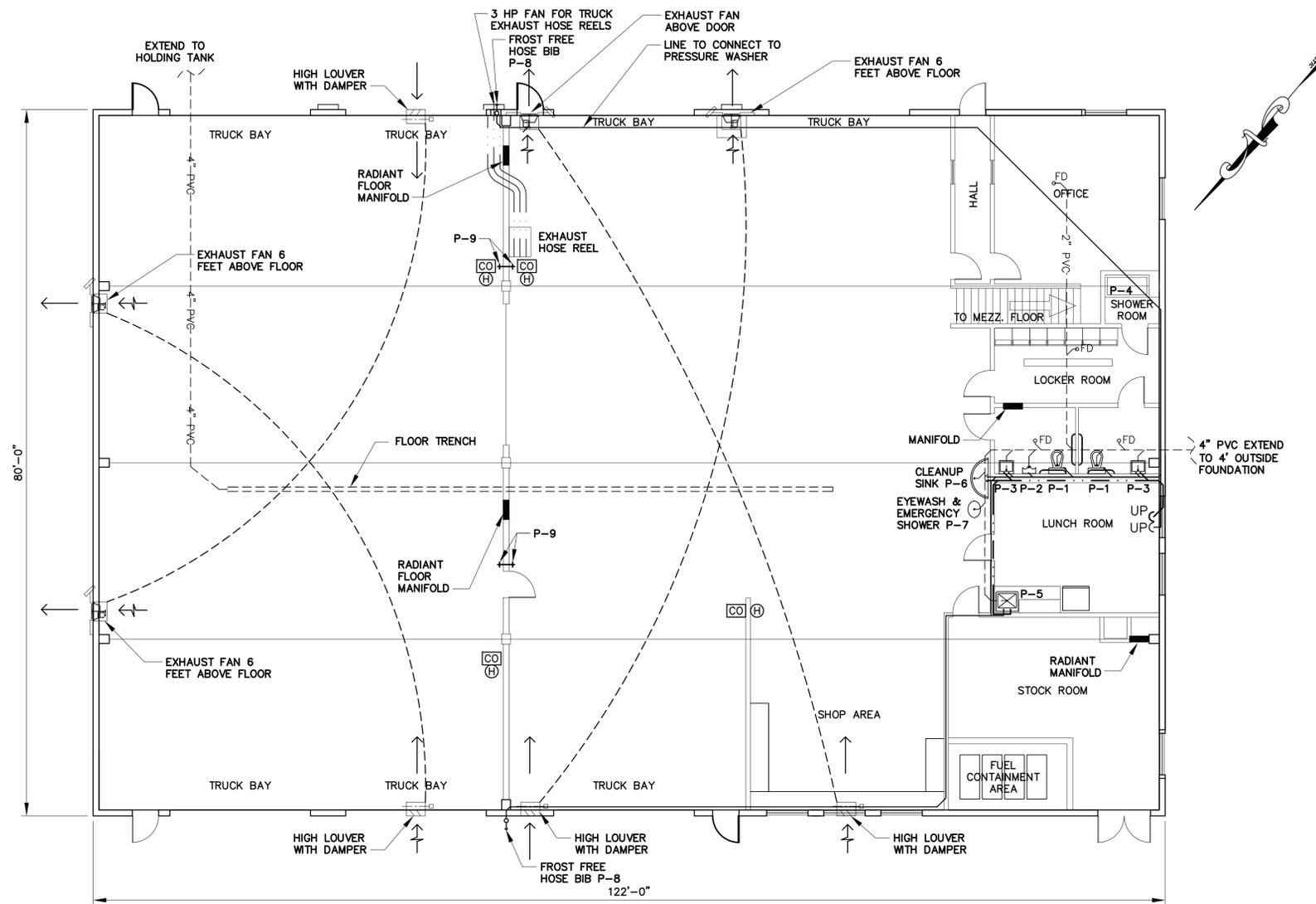
PROJECT
PUBLIC WORKS FACILITY
 TITLE
GARAGE STRUCTURAL DETAILS

SCALE AS SHOWN
 PROJECT NO. 16018
 DRAWING NO. 16018GarageS-Det.dwg
 SHEET 10 of 19 REV. 0

| REV | DATE | STATUS | BY | CHKD | APPD |
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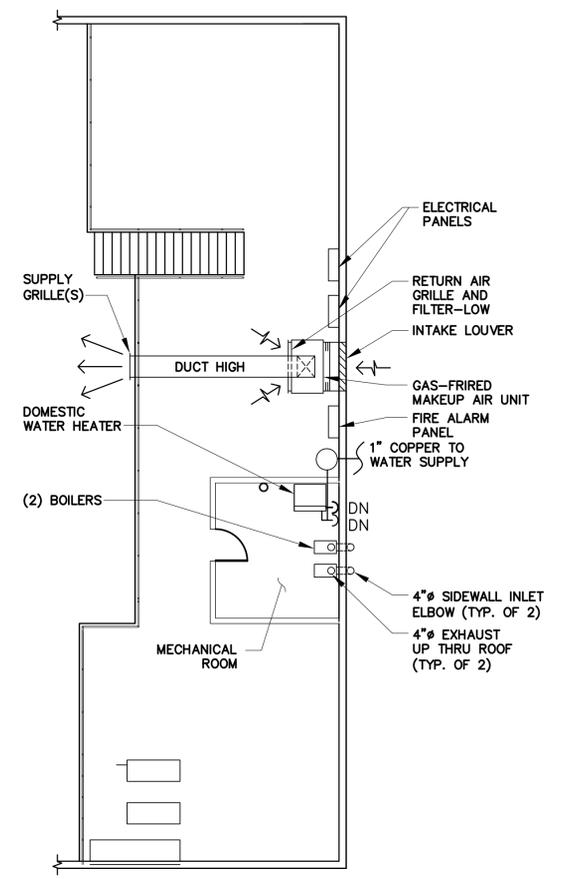
MECHANICAL LEGEND

- Ⓢ THERMOSTAT/ TEMP. SENSOR
- ⊘ PRESSURE REDUCING VALVE
- Ⓢ PRESSURE GAUGE
- ⊘ BALANCE VALVE
- ⊘ BALL VALVE
- ⊘ CHECK VALVE
- ⊘ STRAINER
- Ⓢ CARBON MONOXIDE SENSOR/CONTROLLER/ALARM
- Ⓢ DEHUMIDISTAT
- AFF ABOVE FINISH FLOOR
- B BOILER
- BFP BACKFLOW PREVENTER VALVE
- CO CLEANOUT
- DCW DOMESTIC COLD WATER
- DHW DOMESTIC HOT WATER
- DHWR DOMESTIC HOT WATER RECIRC.
- DN DOWN
- DWH DOMESTIC WATER HEATER
- EF EXHAUST FAN
- FC FLEXIBLE CONNECTION
- FD FLOOR DRAIN
- HWR HOT WATER RETURN
- HWS HOT WATER SUPPLY
- MD MOTORIZED DAMPER
- NC NORMALLY CLOSED
- OA OUTSIDE AIR
- P PUMP



FLOOR PLAN

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



MEZZANINE FLOOR PLAN

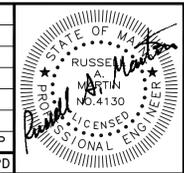
SCALE: 1/8" = 1'-0"

MECHANICAL GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE MAINE STATE PLUMBING CODE AND THE MAINE UNIFORM BUILDING AND ENERGY CODE (MUBEC) IN EFFECT AS OF JAN 20, 2018 INCLUDING, BUT NOT LIMITED TO THE INTERNATIONAL BUILDING CODE - 2009, ASHRAE ENERGY STANDARD 90.1-2007, ASHRAE VENTILATION STANDARD 62.1-2007, MAINE FUEL & BOILER CODES, NFPA 54-2012, 90A-2012, 211-2013, THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE STATE AND LOCAL CODES.
2. SEE ASSOCIATED MECHANICAL SPECIFICATION FOR DESIGN BUILD REQUIREMENTS AND MATERIALS AND METHODS.
3. THESE DRAWINGS ARE SCHEMATIC AND INTENDED TO SHOW THE OWNERS REQUIREMENTS FOR THE MECHANICAL DESIGN-BUILD CONTRACTOR. THE SUCCESSFUL CONTRACTOR SHALL COORDINATE WITH THE STRUCTURE, ARCHITECTURE, AND ELECTRICAL TO PROVIDE COMPLETE AND FUNCTIONAL MECHANICAL SYSTEMS.
4. CONFIRM ALL EQUIPMENT SIZES AND REQUIRED CLEARANCES BEFORE ORDER OR FABRICATION.
5. OBTAIN OWNER REVIEWED SUBMITTALS PRIOR TO FABRICATING OR ORDERING EQUIPMENT.
6. MECHANICAL AIR HANDLING SYSTEMS SHALL NOT BE USED FOR TEMPORARY CONDITIONING OF SPACES DURING CONSTRUCTION.
7. PROVIDE FLEXIBLE CONNECTIONS/ VIBRATION ISOLATION FOR ALL EQUIPMENT IN CONTACT WITH BUILDING STRUCTURE.
8. LABEL EQUIPMENT, PIPES AND VALVES IN VISIBLE LOCATIONS.
9. CONCEAL ALL PIPING WHERE POSSIBLE WITH THE EXCEPTION OF MECHANICAL SPACES. PROVIDE PROPER SUPPORTS, EXPANSION PROVISIONS AND INSULATION.
10. MAINTAIN ALL REQUIRED SERVICE AND ACCESS CLEARANCES REQUIRED BY CODE OR THE MANUFACTURER FOR ALL EQUIPMENT, INCLUDING 36" CLEARANCES TO ALL ELECTRICAL PANELS WHERE REQUIRED BY NEC.
11. MAINTAIN PROPER CLEARANCES TO ALL ELECTRICAL PANELS AND PROPER SERVICE CLEARANCE TO ALL EQUIPMENT.
12. BASE VENTILATION RATES ON ASHRAE 62.1-2007.
13. SLOPE WASTE AND DRAIN PLUMBING PIPING AT MINIMUM OF 1/4" PER FOOT.
14. COORDINATE GAS SERVICE WITH GAS COMPANY PRIOR TO START OF WORK.
15. MOUNT THERMOSTATS AT 48" ABOVE FINISHED FLOOR ELEVATION UNLESS NOTED OTHERWISE.
16. TEST AND BALANCE COMPLETED AIR & WATER SYSTEMS. PROVIDE TYPEWRITTEN REPORT.
17. INSTALL AIR HANDLING UNITS TO OBTAIN A MINIMUM OF 10 FEET BETWEEN AIR INTAKES AND VENTS /EXHAUST. INSTALL UNITS TO OBTAIN REQUIRED AIRFLOW AND SERVICE ACCESSSES.
18. INSTALL GAS PIPING PER NFPA-54. PAINT ALL NEW GAS PIPING YELLOW. PROVIDE ANSI A13.1 PIPE LABELS.
19. PROVIDE MERV 8 FILTERS FOR AIR HANDLING UNITS.
20. SIZE PLUMBING PIPING PER CODE. SIZE WATER PIPING AT MAX. 4.0 FT HEAT PER 100 LF AND MAX. 5.0 FPS.
21. PROVIDE LP FIRED DOMESTIC WATER HEATER. SUBMIT BASIS FOR DOMESTIC WATER HEATER SIZING AND SELECTION.
22. INSULATE ALL PIPES AND DUCTS PER ASHRAE 90.1-2007. PROTECT PROTECTIVE JACKETS FOR INSULATION WHERE EXPOSED BELOW 8 FT AFF.
23. EXTEND FLEX DUCTS TO MINIMIZE INTERNAL FOLDS. HANG WITH EXTENDED BANDS RATHER THAN WIRES TO REDUCE CRIMPING. USE MINIMUM PRACTICAL LENGTHS WITH RADIUS BENDS. PROVIDE DUCT DAMPERS AT ALL ROUND DUCT TAKEOFFS TO ALLOW BALANCING.
24. SUPPLY DIFFUSERS SHALL BE SQUARE CONE TYPE. SUPPLY GRILLES SHALL BE RECTANGULAR FACE, ADJUSTABLE DOUBLE DEFLECTION. RETURN/EXHAUST GRILLES SHALL BE 45 DEGREE FIXED SINGLE FACE BARS. ALL UNITS SHALL BE ALUMINUM, OFF-WHITE.
25. CONSTRUCT GALVANIZED METAL DUCTWORK IN ACCORDANCE WITH SMACNA DUCT STANDARDS. SEAL DUCTS TO ASHRAE LEVEL "C".
26. TEMPERATURE CONTROLS - MINIMAL - INTEGRAL AS MUCH AS POSSIBLE. LIMIT MANUAL CONTROL TO PREVENT OVER-ADJUSTMENT OR UNINTENDED CONSEQUENCES.
27. PROVIDE DUCT ACCESS DOORS ON UPSTREAM SIDE OF ALL DUCT COILS.
28. CALCULATE HEATING AND COOLING LOADS USING SOFTWARE UTILIZING ASHRAE METHODS AND ALGORITHMS. PROVIDE COPIES OF INPUT AND RESULTS FOR OWNERS REVIEW BEFORE SUBMITTING ASSOCIATED EQUIPMENT.
29. PROVIDE VENTILATION CALCULATIONS IN ACCORDANCE WITH ASHRAE 62.1-2007.
30. SIZE AND INSTALL LP GAS PIPING PER NFPA-54.
31. PROVIDE HYDRONIC RADIANT FLOOR HEATING SYSTEM PER SCHEDULE. BASED SYSTEM ON UPONOR - OTHER MANUFACTURERS WILL BE CONSIDERED AS A DEDUCTIVE ALTERNATE ONLY.
32. PERSONNEL SPACES: PROVIDE RADIANT HYDRONIC ZONES AS SCHEDULED AS COLD WEATHER HEAT (LOCK OUT ABOVE 30F OAT (ADJUSTABLE)), PROVIDE AIR TO AIR HEAT PUMPS FOR HEAT ABOVE 30F OAT (LOCKOUT BELOW 10F OAT) AND AIR CONDITIONING. SPLIT SYSTEM HEAT PUMPS. PROVIDE CODE MANDATED VENTILATION (ASHRAE 62.1-2007) THRU A SINGLE ENERGY RECOVERY VENTILATOR - EXHAUST "DIRTY" SPACES (TOILETS, SHOWER ROOM, LOCKER ROOM, LUNCH ROOM) AND SUPPLY TO OFFICE AND LUNCH ROOM. PROVIDE TRANSFER GRILLES WHERE NEEDED BETWEEN SPACES (> 100 CFM). BALANCE ERV AND OBTAIN PROPER PRESSURIZATION (POSITIVE OFFICES, ETC. AND NEGATIVE GARAGE) BY EXHAUSTING SOME AIR FROM GARAGE (USE FILTER RETURN GRILLE) TO KEEP PERSONNEL SPACES UNDER A POSITIVE PRESSURE RELATIVE TO THE GARAGE TO PREVENT ODORS AND FUMES FROM MIGRATING INTO THE PERSONNEL SPACES. VENTILATION SHOULD RUN WHENEVER PERSONNEL SPACES ARE OCCUPIED (TIME CLOCK AND OCCUPANCY SENSOR).
33. BOOST ERV SUPPLY AIR TEMPERATURE TO MINIMUM OF 60F OR CONNECT DIRECTLY TO HEAT PUMP(S) RETURN. GLYCOL IN THE HEATING WATER IS DISCOURAGED.
34. PROVIDE 2 LP-FIRED HIGH EFFICIENCY CONDENSING BOILERS, EACH SIZED FOR MINIMUM 2/3 OF TOTAL LOAD (HEATING AND VENTILATION) EACH WITH AN ASSOCIATED INJECTION CIRCULATOR. HEATING WATER SUPPLY TEMPERATURE SHALL BE 140F MAXIMUM WITH OUTDOOR TEMPERATURE RESET.
35. PROVIDE PRIMARY AND SECONDARY CIRCULATORS. PROVIDE TEMPERING VALVE FOR RADIANT FLOOR ZONES IF NECESSARY.
36. SELECT CIRCULATORS AT MINIMUM 50% EFFICIENCY.
37. PROVIDE AN OVERHEAD VEHICULAR EXHAUST SYSTEM AS INDICATED. PROVIDE AN ASSOCIATED INDIRECT GAS-FIRED MAKEUP AIR SYSTEM. INTERLOCK SYSTEMS. MAINTAIN NEGATIVE PRESSURE IN GARAGE RELATIVE TO THE ADJACENT "PEOPLE SPACES."
38. PROVIDE CODE MANDATED EXHAUST @ 1.5 CFM/SF FOR BOTH SIDES OF GARAGE. PROVIDE GENERAL/SUMMER EXHAUST FANS - 2 EACH SIDE WITH "ON/AUTO" SWITCH - AUTO SHOULD WORK OFF CO/NO2 CONTROLLER AND HIGH HUMIDISTAT (80% RH-ADJUSTABLE) WITH MULTIPLE CO/NO2 SENSORS. ALARM AT HIGH LEVELS. PROVIDE MINIMAL MAKEUP AIR PROVISIONS (BEYOND MUA SYSTEM FOR MAINTENANCE SIDE) - (TWO INTERLOCKED LOUVER/DAMPERS EACH SIDE) (UNTEMPERED MAKEUP AIR - DOORS WILL BE OPEN WHEN TRUCKS MOVE IN AND OUT. PRESUME DOOR(S) OPEN DURING SUMMER OCCUPANCY.
39. PROVIDE INFRARED TUBE HEATERS AS SUPPLEMENTAL/RECOVERY HEAT FOR THE GARAGE BAYS. VENT HEATERS THRU ROOF.
40. SIZE DUCTWORK AT MAX. 0.1 IN SP PER 100 LF.
41. SIZE INTAKE LOUVERS AT MAX. 750 FPM FREE AREA AND MAX. 0.1" SP.

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| REV | DATE | STATUS | BY | CHKD | APPD |



DESIGNED BY: RAM
 DRAWN BY: RAM
 CHECKED BY: JCD
 APPROVED BY: RAM
 DATE: 01/26/18

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PROJECT
PUBLIC WORKS FACILITY
 TITLE
GARAGE MECHANICAL PLAN

| | |
|-------------|---------------------|
| SCALE | AS SHOWN |
| PROJECT NO. | 16018 |
| DRAWING NO. | 16018 Garage FP.dwg |
| SHT. | 11 of 19 |
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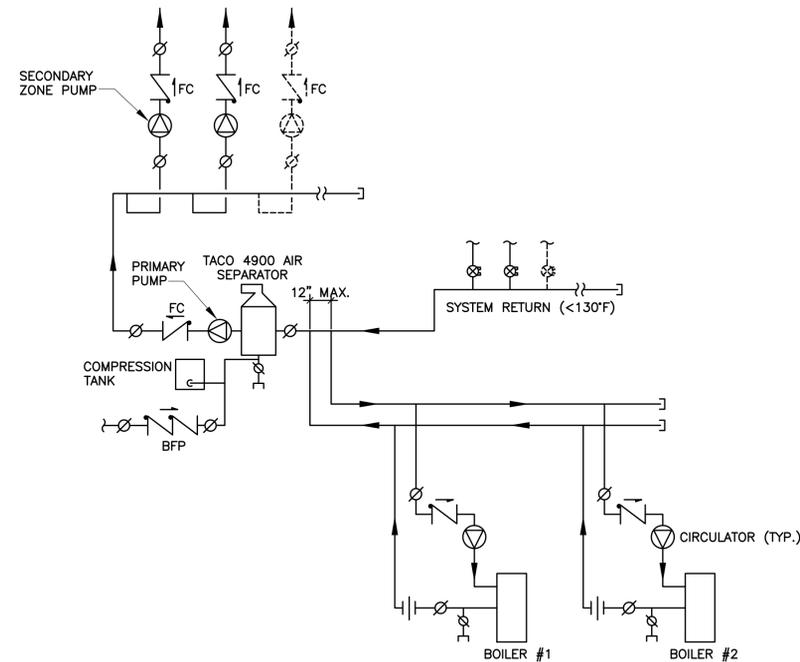
| MAINTENANCE BUILDING HVAC SPACE REQUIREMENTS | | | | | | | | | | | |
|--|-------------|--------------|-----------|----------|----------|----------------|----------------|---------|---------|----------------|------------|
| SPACE | MAIN GARAGE | MAINT GARAGE | SHOP AREA | OFFICE | HALL | LOCKER ROOM | SHOWER ROOM | WOMENS | MENS | LUNCH ROOM | STOCK ROOM |
| DESIGN HTG TEMP | 60 | 60 | 68 | 72 | 60 | 72 | 72 | 72 | 72 | 72 | 60 |
| HTG SYSTEM/ZONE | RAD1 | RAD2 | RAD2 | RAD3/HP | RAD3/HP | RAD3/HP | RAD3/HP | RAD3/HP | RAD3/HP | RAD3/HP | RAD4/HP |
| MISC HTG | | | | (*)3 | (*)3 | (*)3 | (*)3 | (*)3 | (*)3 | (*)3 | (*)3 |
| DESIGN CLG TEMP | NA | NA | NA | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| CLG SYSTEM | NA | NA | NA | HP | HP | HP | HP | HP | HP | HP | HP |
| NUMBER OCCUPANTS | NA | NA | 4 | 4 | 0 | NA | NA | NA | NA | 8 | 2 |
| MIN VENT (*4) | (*)1 | (*)2 | TBD | PER CODE | PER CODE | 0.5 CFM/SF EXH | 0.5 CFM/SF EXH | 50 EXH | 100 EXH | 0.3 CFM/SF EXH | PER CODE |
| PRESSURIZATION | NEG | NEG | NEG | POS | POS | NEG | NEG | NEG | NEG | POS | POS |
| VENT SYSTEM | MUA | GFAHU | GFAHU | ERV | ERV | ERV | ERV | ERV | ERV | ERV | ERV |
| TEMP SENSOR/T'STAT | YES | YES | YES | YES | NO | NO | NO | NO | NO | NO | YES |

NOTES:
 BASE DESIGN ON OAT TEMPS OF -15F WINTER, 90/73 SUMMER.
 (*1) PROVIDE CO/NO2 SWITCH/ALARM WITH MIN (4) SENSORS TO ACTIVATE EXHAUST FAN(S) (SIZED FOR 1.5 CFM/SF). ALSO ACTIVATE SYSTEM IF SPACE RH EXCEEDS 80%. PROVIDE ASSOCIATED MAKEUP AIR LOUVER/DAMPERS.
 (*2) PROVIDE CO/NO2 SWITCH/ALARM WITH MIN (4) SENSORS TO ACTIVATE EXHAUST FAN(S) (SIZED FOR 1.5 CFM/SF). ALSO ACTIVATE SYSTEM IF SPACE RH EXCEEDS 80%. PROVIDE ASSOCIATED MAKEUP AIR SYSTEM/LOUVERS/DAMPERS.
 (*3) LOCK OUT RADIANT ZONES 3 & 4 ABOVE 30F OAT (ADJUSTABLE). LOCK OUT HEAT PUMP(S) BELOW 10F OAT (ADJUSTABLE).
 (*4) PROVIDE MIN VENTILATION PER ASHRAE 62.1-2007

| EQUIPMENT SCHEDULE | | |
|-------------------------------|---------------------------------------|-------------------|
| EQUIPMENT | ACCEPTABLE MANUFACTURERS | COMMENTS |
| BOILERS | BUDERUS, HTP, LOCHINVAR, VISSMAN | LP CONDENSING |
| DOMESTIC WATER HEATER | BOSCH, LOCHINVAR, RINNAI | LP INSTANTANEOUS |
| ERV | RENEWAIRE, S&P | INTERIOR |
| EXHAUST FANS | ACME, COOK, GREENHECK | WITH DAMPER |
| GAS-FIRED MAKEUP AIR UNIT | MODINE, GREENHECK | INDIRECT FIRED |
| GRILLES, REGISTERS, DIFFUSERS | NAILOR, METALAIRE, PRICE | ALUMINUM, WHITE |
| HEAT PUMPS | DAIKIN, MITSUBISHI, SAMSUNG, HAIER | |
| HW CIRCULATORS | GRUNFOS, TACO | WET ROTOR |
| INFRARED SUPPLEMENTAL HEAT | RVERBARAY, DETROIT RADIANT, SOLARONCS | LP TUBE HEATERS |
| LOUVERS | GREENHECK, RUSKIN, UNITED INTERTECH | EXTRUDED |
| RADIANT FLOOR | UPONOR PEX-A | SLAB TEMP SENSORS |
| VEHICULAR EXHAUST SYSTEM | CARMON, VENTAIRE | |

SEE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. MANUFACTURERS OTHER THAN ABOVE MAY BE CONSIDERED IF NOTED IN PROPOSAL.

| PLUMBING FIXTURE SCHEDULE | | |
|---------------------------|-----------------------|--|
| TAG | TYPE | COMMENTS |
| P-1 | WATER CLOSET | TANK-TYPE(INSULATED), 2-PIECE, ELONGATED BOWL, FLOOR MOUNTED, 12" ROUGH-IN, CLOSED-FRONT PLASTIC SEAT, INSULATED TANK, MEET ADA/ANSI A117.1 HANDICAP REQUIREMENTS, FLUSH HANDLE ON ACCESS SIDE, WHITE, AMERICAN STANDARD CADET 4 OR EQUIVALENT BY KOHLER OR TOTO. 1.6 GALLONS PER FLUSH MAXIMUM. |
| P-2 | URINAL | AMERICAN STANDARD 6561.017 OR EQUAL BY TOTO: VITREOUS CHINA CONSTRUCTION, FLUSHING RIM, SIPHON JET FLUSH ACTION, PRIVACY SHIELDS, 3/4" TOP SPUD, WALL HANGERS, MANUAL SLOAN FLUSHOMETER. |
| P-3 | LAVATORY | AMERICAN STANDARD WHEELCHAIR USERS LAVATORY, #9141.911 WITH COLONY7SOFT SINGLE CONTROLLAVATORFAUCET, #2175.5020.5-0.7 GPM MAXIMUM FLOW RATE AT 60 PSI. MEET ADA/ANSIA117.1 HANDICAP REQUIREMENTS, WHITE. PROVIDE CONCEALED ARM CARRIER. PROVIDE LAV GUARD BY TRUEBRO DRAIN PIPING AND ANGLE VALVE SUPPLY COVERS. |
| P-4 | SHOWER | 60" WIDE ONE PIECE UNIT WITH SLIP RESISTANT FLOOR, CHROME TRIM, LASCO OR EQUAL, WITH SYMMONS S-96-300-B30-L-V PACKAGE INCLUDING PRESSURE-BALANCING VALVE, WALL/HAND SHOWER, FLEXIBLE METAL HOSE, 30" SLIDE BAR, ETC. OR EQUAL BY LEONARD OR MOEN, 2.0 GPM MAXIMUM FLOW RATE. |
| P-5 | KITCHEN SINK | ELKAY GEOR-2521 OR EQUAL, 25" LONG X 21" WIDE X 5-3/8" DEEP, SINGLE INSULATED BOWL, MINIMUM #20 GAGE 304 SS, SELF-RIMMING, FOUR FAUCET HOLES, SINGLE-LEVER FAUCET WITH SWING SPOUT AND SPRAY BY ELKAY LK4101 OR EQUAL, 1.5 GPM MAXIMUM FLOW RATE AT 60 PSI. |
| P-6 | WASH FOUNTAIN | ACORN 3402-2-F-VPB-MXTP, 38-1/2" HIGH, FOOT PUSHBOTTON, STAINLESS STEEL BOWL, 2 PERSON, 0.50 GPM, SEMI-CIRCULAR |
| P-7 | EMERG. SHOWER/EYEWASH | BRADLEY S19-310DC, WITH DUST COVER, 22 GPM SHOWERHEAD, 1-1/4" NPT SUPPLY CONN., WITH EMERGENCY THERMOSTATIC MIXING VALVE, MEETS ANSI Z358.1 |
| P-8 | FREEZE PROOF HOSE BIB | AUTOMATIC DRAINING WITH ANTI-SYPHON VACUUM BREAKER AND LOOSE TEE KEY. CHROME FINISH. WOODFORD MODEL 65 OR EQUAL BY JOSAM OR ZURN. |
| P-9 | INTERIOR HOSE BIBB | HEAVY DUTY, BRASS BODY AND HANDLE, 3/4" X HOSE THREAD |
| FD | FLOOR DRAIN | ZURN, ROUND, ACID-RESISTANT ENAMEL AND ACID-RESISTANT EPOXY, BRONZE STRAINER, NICKEL BRONZE FINISH |



BOILER PIPING DIAGRAM
NOT TO SCALE

INTENT OF BID DOCUMENTS:

THE INTENT OF THESE BID DOCUMENTS IS TO ENABLE CONTRACTORS TO DEVELOP PROPOSALS FOR MECHANICAL SYSTEMS, TO ENABLE THE OWNER AND DESIGN TEAM TO REVIEW AND APPROVE THE PROPOSED SYSTEMS, AND TO FACILITATE COORDINATION AMONG THE DESIGN/BUILD TEAM. THESE DOCUMENTS ARE NOT SUFFICIENTLY DEVELOPED, NOR INTENDED, TO SERVE AS CONSTRUCTION DOCUMENTS. THESE BID DOCUMENTS ESTABLISH MINIMUM CRITERIA AND DO NOT RELAX ANY APPLICABLE CODES OR STANDARDS. THE INTENT IS FOR THE BID DOCUMENTS TO ESTABLISH CRITERIA FOR DESIGN BY A LICENSED ENGINEER. PROPOSALS SHALL BE THE PROPERTY OF THE CONTRACTOR FOR CONSIDERATION BY THE TOWN AND SHALL NOT BE SHARED WITH OTHER CONTRACTORS.

DESIGN-BUILD MECHANICAL CONTRACTOR REQUIREMENTS

THE SELECTED CONTRACTOR WILL PROVIDE THE PROJECT DESIGN IN ACCORDANCE WITH THE CONCEPTS OF THESE BID DOCUMENTS AND ASSOCIATED SPECIFICATIONS AND PRODUCE DETAILED CONSTRUCTION DRAWINGS AND EQUIPMENT SCHEDULES. THE SUCCESSFUL DESIGN-BUILD MECHANICAL CONTRACTOR WILL SUBMIT THE COMPLETED DESIGN DOCUMENTS TO PINE TREE ENGINEERING FOR REVIEW FOR CONFORMANCE TO THE OUTLINE SPECIFICATIONS. SUBMIT EQUIPMENT SUBMITTALS FOR REVIEW AND COMMENTS BEFORE EQUIPMENT ORDERS ARE RELEASED. AFTER SELECTION AND CONTRACT AWARD AND BEFORE EQUIPMENT IS ORDERED, THE SUCCESSFUL CONTRACTOR SHALL PROVIDE ENGINEERED DOCUMENTS STAMPED BY THE ENGINEER OF RECORD TO PINE TREE ENGINEERING FOR REVIEW AND ACCEPTANCE.

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| REV | DATE | STATUS | BY | CHKD | APPD |
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| 0 | 1/26/18 | ISSUED FOR BIDDING | RAM | JCD | RLP |



DESIGNED BY: RAM
 DRAWN BY: RAM
 CHECKED BY: JCD
 APPROVED BY: RAM
 DATE: 01/26/18

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PROJECT
PUBLIC WORKS FACILITY

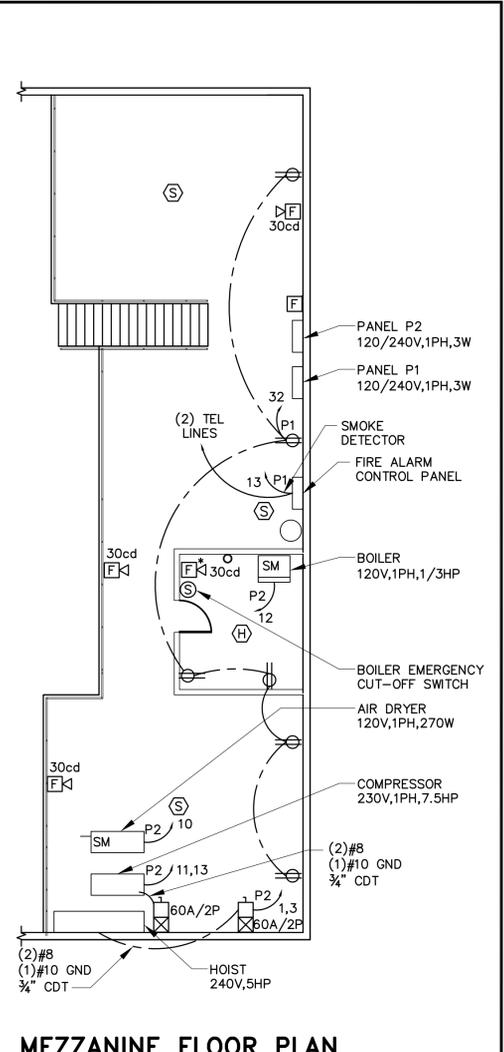
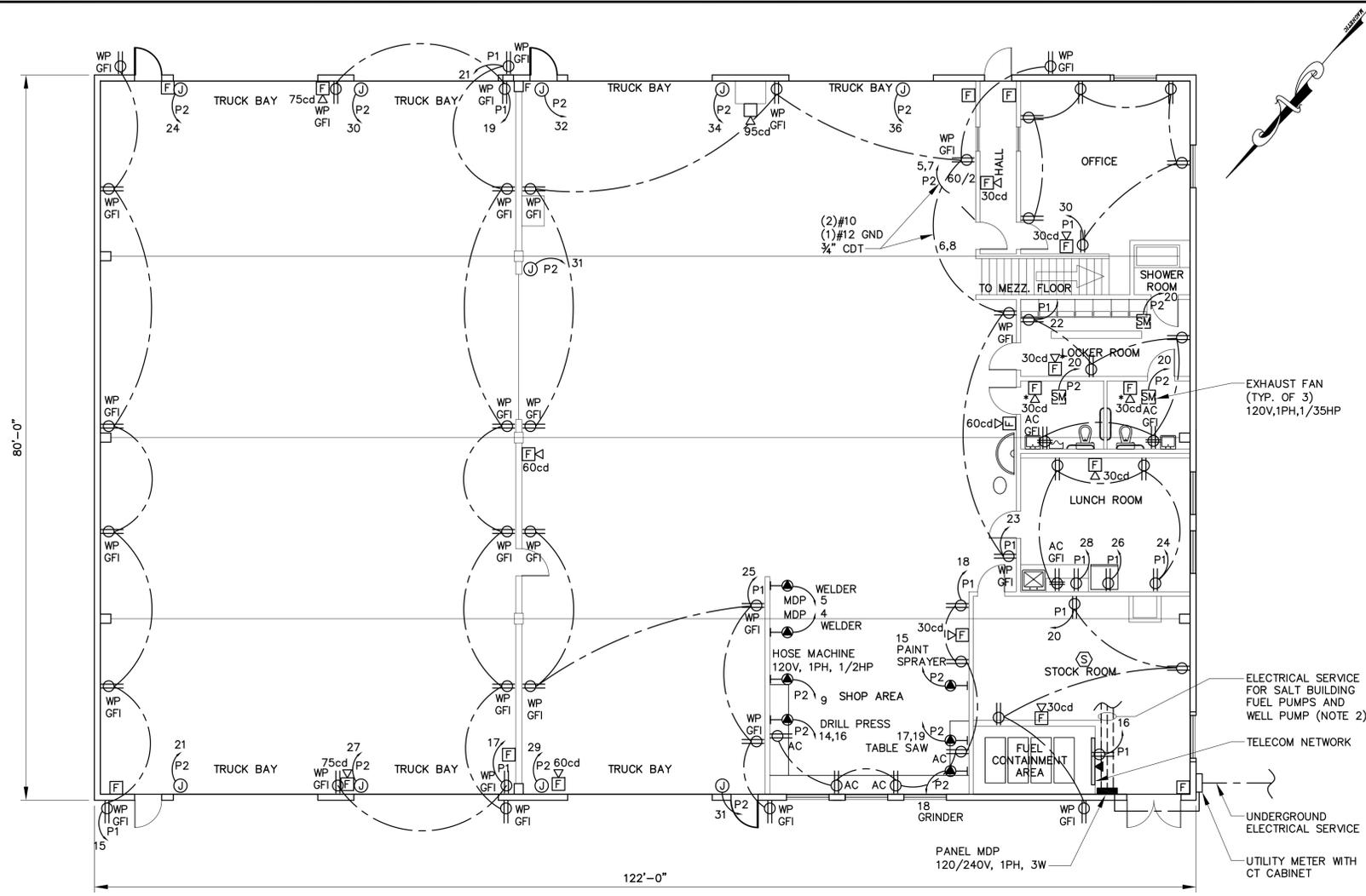
TITLE
GARAGE MECHANICAL PLAN

SCALE
 AS SHOWN

PROJECT NO.
 16018

DRAWING NO.
 16018 Garage FP.dwg

SHT. 12 of 19 REV. 0



FLOOR PLAN
SCALE: 1/8" = 1'-0"

MEZZANINE FLOOR PLAN
SCALE: 1/8" = 1'-0"

| PANEL SCHEDULE - P1 | | | | | | | | | | | | | |
|---------------------|-------------|------------------|------|---------|------|--------|---------|------|--------|-----------------|---------------------|----|----|
| BREAKER | DESCRIPTION | CKT VA | TYPE | CKT NO. | LOAD | | CKT NO. | TYPE | CKT VA | DESCRIPTION | BREAKER | | |
| | | | | | A | B | | | | | | P | A |
| 20 | 2 | FUEL PUMPS | 1800 | M | 1 | 3600 | | | 1800 | WELL PUMPS | 2 | 20 | |
| 20 | 2 | FUEL PUMPS | 1800 | M | 3 | | 3600 | 4 | M | 1800 | WELL PUMPS | 2 | 20 |
| 20 | 2 | FUEL PUMPS | 1800 | M | 5 | 2300 | | | 500 | SPARE | 1 | 20 | |
| 20 | 2 | FUEL PUMPS | 1800 | M | 7 | | 2300 | 8 | S | 500 | SPARE | 1 | 20 |
| 20 | 1 | SPARE | 500 | S | 9 | 1000 | | | 500 | SPARE | 1 | 20 | |
| 20 | 1 | SPARE | 500 | S | 11 | | 1000 | 12 | S | 500 | SPARE | 1 | 20 |
| 20 | 1 | FIRE ALARM PANEL | 500 | O | 13 | 1000 | | | 500 | SPARE | 1 | 20 | |
| 20 | 1 | RECEPTACLES | 1200 | R | 15 | | 1600 | 16 | R | 400 | TELEPHONE EQUIPMENT | 1 | 20 |
| 20 | 1 | RECEPTACLES | 1000 | R | 17 | 1800 | | | 800 | RECEPTACLES | 1 | 20 | |
| 20 | 1 | RECEPTACLES | 1000 | R | 19 | | 2000 | 20 | R | 1000 | RECEPTACLES | 1 | 20 |
| 20 | 1 | RECEPTACLES | 1200 | R | 21 | 2200 | | | 1000 | RECEPTACLES | 1 | 20 | |
| 20 | 1 | RECEPTACLES | 1200 | R | 23 | | 2200 | 24 | R | 1000 | RECEPTACLES | 1 | 20 |
| 20 | 1 | RECEPTACLES | 1000 | R | 25 | 2000 | | | 1000 | REFRIGERATOR | 1 | 20 | |
| 20 | 1 | LIGHTS | 1074 | L | 27 | | 2574 | 28 | R | 1500 | MICROWAVE | 1 | 20 |
| 20 | 1 | LIGHTS | 1030 | L | 29 | 2230 | | | 1200 | RECEPTACLES | 1 | 20 | |
| 20 | 1 | LIGHTS | 1020 | L | 31 | | 2220 | 32 | R | 1200 | RECEPTACLES | 1 | 20 |
| 20 | 1 | SPARE | 500 | S | 33 | 1370 | | | 870 | LIGHTS | 1 | 20 | |
| 20 | 1 | SPARE | 500 | S | 35 | | 1420 | 36 | L | 920 | LIGHTS | 1 | 20 |
| 20 | 1 | LIGHTS | 820 | L | 37 | 1740 | | | 920 | LIGHTS | 1 | 20 | |
| 20 | 1 | LIGHTS | 920 | L | 39 | | 1740 | 40 | L | 820 | LIGHTS | 1 | 20 |
| 20 | 1 | LIGHTS | 920 | L | 41 | 2020 | | | 1100 | EXTERIOR LIGHTS | 1 | 20 | |
| PHASE TOTAL | | | | | | 21,260 | | | | 20,654 | | | |

| PANEL SCHEDULE - P2 | | | | | | | | | | | | | |
|---------------------|-------------|-----------------|------|---------|------|--------|---------|------|--------|---------------|---------------|----|----|
| BREAKER | DESCRIPTION | CKT VA | TYPE | CKT NO. | LOAD | | CKT NO. | TYPE | CKT VA | DESCRIPTION | BREAKER | | |
| | | | | | A | B | | | | | | P | A |
| 60 | 2 | HOIST | 3360 | M | 1 | 3860 | | | 500 | ERV | 1 | 20 | |
| 60 | 2 | HOIST | 3360 | M | 3 | | 5260 | 4 | M | 1900 | EXHAUST FAN | 1 | 30 |
| 20 | 1 | BOILER #1 | 864 | H | 5 | 2764 | | | 1900 | EXHAUST FAN | 1 | 30 | |
| 20 | 1 | SPARE | 500 | S | 7 | | 1000 | 8 | S | 500 | SPARE | 1 | 20 |
| 20 | 1 | HOSE MACHINE | 1176 | M | 9 | 1446 | | | 270 | AIR DRYER | 1 | 20 | |
| 60 | 2 | COMPRESSOR | 3360 | M | 11 | | 4224 | 12 | H | 864 | BOILER #2 | 1 | 20 |
| 60 | 2 | COMPRESSOR | 3360 | M | 13 | 4560 | | | 1200 | DRILL PRESS | 2 | 20 | |
| 20 | 1 | PAINT SPRAYER | 696 | M | 15 | | 1896 | 16 | M | 1200 | DRILL PRESS | 2 | 20 |
| 25 | 2 | TABLE SAW | 1440 | M | 17 | 3360 | | | 1920 | GRINDER | 1 | 20 | |
| 25 | 2 | TABLE SAW | 1440 | M | 19 | | 1940 | 20 | M | 500 | EXHAUST FAN | 1 | 20 |
| 25 | 1 | OVERHEAD DOOR | 1587 | M | 21 | 3507 | | | 1920 | EXHAUST FAN | 1 | 20 | |
| 20 | 1 | CIRC. PUMPS | 1000 | M | 23 | | 2587 | 24 | M | 1587 | OVERHEAD DOOR | 1 | 25 |
| 30 | 1 | AIR FAN | 1900 | M | 25 | 3800 | | | 1900 | EXHAUST FAN | 1 | 30 | |
| 25 | 1 | OVERHEAD DOOR | 1587 | M | 27 | | 3487 | 28 | M | 1900 | EXHAUST FAN | 1 | 30 |
| 25 | 1 | OVERHEAD DOOR | 1587 | M | 29 | 3174 | | | 1587 | OVERHEAD DOOR | 1 | 25 | |
| 25 | 1 | OVERHEAD DOOR | 1587 | M | 31 | | 3174 | 32 | M | 1587 | OVERHEAD DOOR | 1 | 25 |
| 30 | 1 | VEHICLE EXHAUST | 1900 | M | 33 | 2400 | | | 500 | SPARE | 1 | 20 | |
| 20 | 1 | SPARE | 500 | S | 35 | | 2087 | 36 | M | 1587 | OVERHEAD DOOR | 1 | 25 |
| 20 | 1 | SPARE | 500 | S | 37 | 1000 | | | 500 | SPARE | 1 | 20 | |
| 20 | 1 | SPARE | 500 | S | 39 | | 1000 | 40 | S | 500 | SPARE | 1 | 20 |
| 20 | 1 | SPARE | 500 | S | 41 | 1000 | | | 500 | SPARE | 1 | 20 | |
| PHASE TOTAL | | | | | | 30,871 | | | | 26,655 | | | |

LEGEND

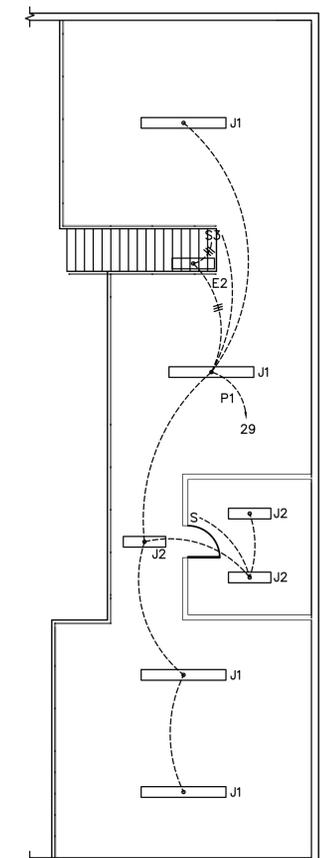
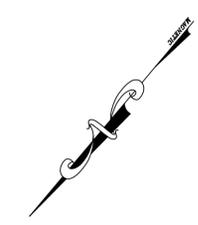
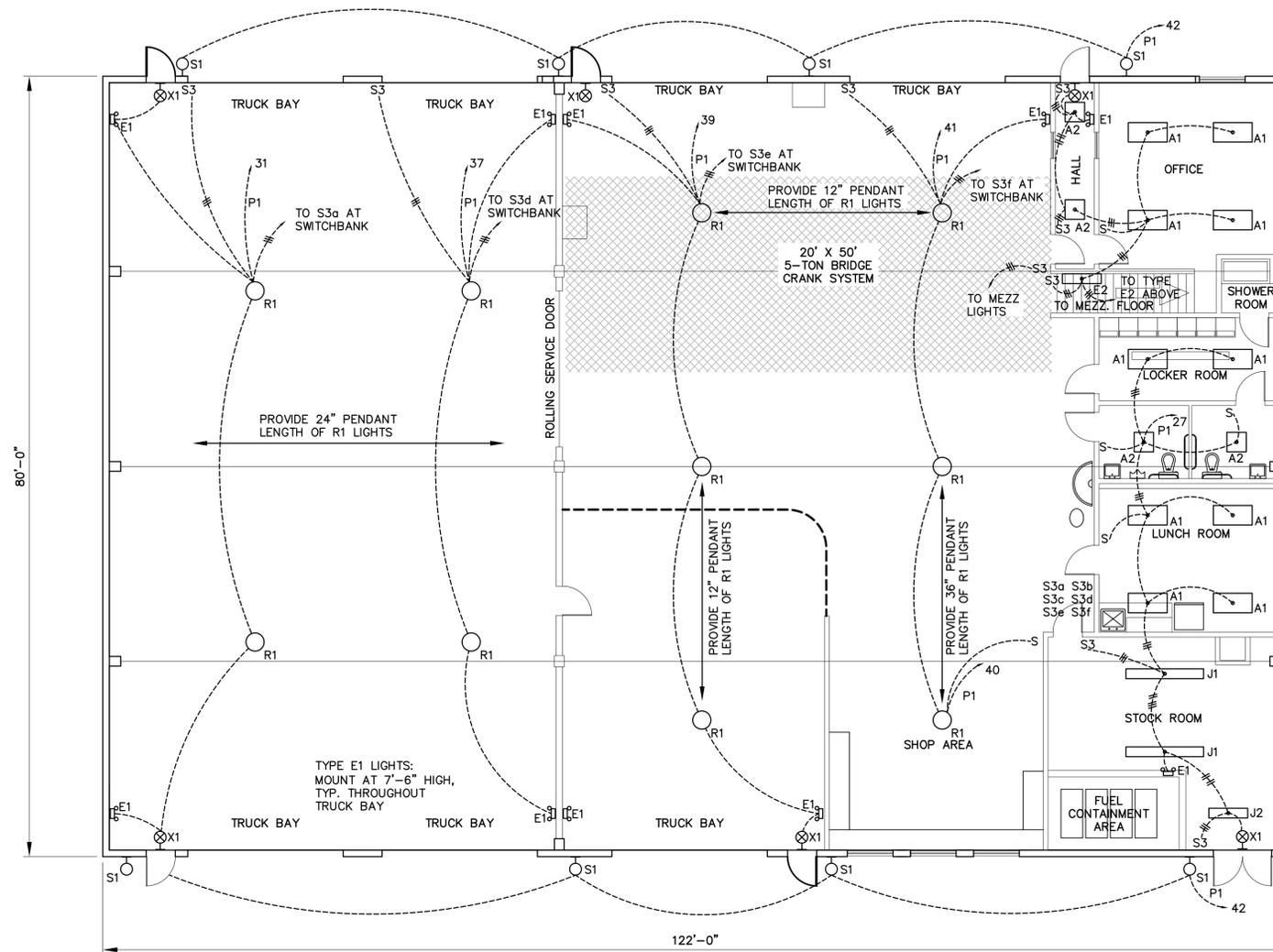
- ⊕ STANDARD DUPLEX RECEPTACLE OUTLET
- ⊕ QUAD RECEPTACLE OUTLET
- ⊕ JUNCTION BOX
- S SWITCH
- ⊕ 208 RECEPTACLE OUTLET
- ⊕ FIRE ALARM HORN/STROBE
- XXcd strobe candela rating
- ⊕ FIRE MANUAL PULL STATION
- ⊕ VENT
- ⊕ FIRE ALARM HEAT DETECTOR
- ⊕ FIRE ALARM SMOKE DETECTOR
- ⊕ COMBINATION (MCP) MOTOR STARTERS
- SM MANUAL MOTOR SWITCH
- XX wiring homerun
- PX panel designation
- CONDUIT
- WP WATERPROOF
- GFI GROUND FAULT INTERRUPTER
- AC ABOVE COUNTER

NOTES:

- COORDINATE ELECTRICAL CIRCUITS REQUIRED FOR MECHANICAL HVAC SYSTEMS EQUIPMENT WITH MECHANICAL DESIGN-BUILD CONTRACTOR. PROVIDE FOR A MINIMUM OF THE FOLLOWING:
 - MEZZANINE MECHANICAL ROOM**
 - (2) BOILERS- 20A, 120V EACH/PANEL P2 CKTS #5 AND #12
 - 4 CIRCULATING PUMPS- 20A, 120V PANEL P2 CKT #23
 - MAKEUP AIR FAN- 30A, 120V PANEL P2 CKT #25
 - OFFICE AREA**
 - ERV- 20A, 120V PANEL P2 CKT #2
 - HEAT PUMP INDOOR UNIT- 20A, 240V PANEL P2 CKT #40, 42
 - MAINTENANCE GARAGE**
 - EXHAUST FANS- 30A, 120V PANEL P2 CKTS #4 AND #6
 - GENERAL GARAGE**
 - EXHAUST FANS- 30A, 120V PANEL P2 CKTS #26 AND #28
 - VEHICLE EXHAUST SYSTEM- 30A, 120V PANEL P2 CKT #33
 - EXTERIOR**
 - HEAT PUMP OUTDOOR UNIT- 240V, 60A, PANEL MDP #4
- CONNECT FUEL PUMPS CIRCUIT TO PANEL P1, CIRCUITS #1, 3 AND #5, 7. CONNECT WELL PUMP CIRCUIT TO PANEL P1 CIRCUIT #2, 4. ROUTE CIRCUITS UNDERGROUND IN 1-1/2" CONDUITS.

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|--|--|--|---|---|---|--|
| Bartlett Design LIGHTING & ELECTRICAL ENGINEERING 942 WASHINGTON STREET, BATH, ME 04530 TEL (207) 443-5447 | | DESIGNED BY: LEB DRAWN BY: LEB CHECKED BY: JCD APPROVED BY: LEB DATE: 01/26/18 | Pine Tree Engineering 53 Front Street Bath, Maine 04530 Tel: (207) 443-1508 Fax: (207) 442-7029 Civil/Environmental Engineering • Surveying | CLIENT TOWN OF BOWDOINHAM 13 SCHOOL STREET BOWDOINHAM, ME 04008 | PROJECT PUBLIC WORKS FACILITY | SCALE AS SHOWN PROJECT NO. 16018 DRAWING NO. 16018 Garage FP.dwg SHT. 13 of 19 REV. 0 |
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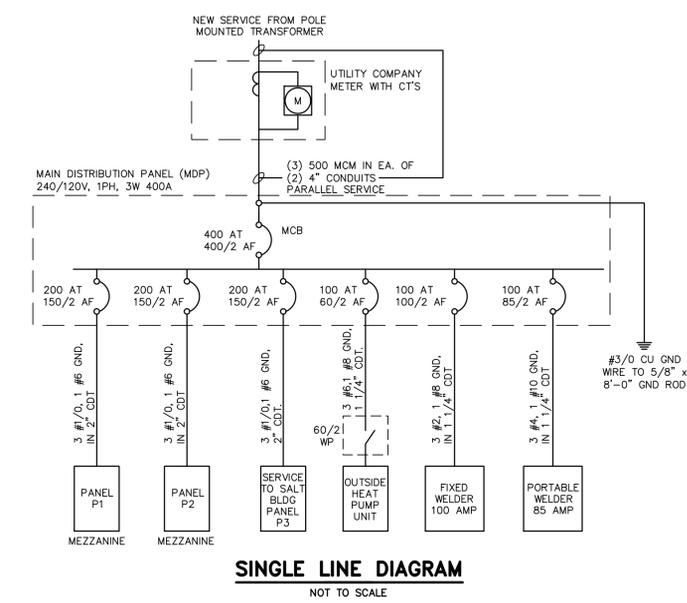


MEZZANINE FLOOR PLAN
SCALE: 1/8" = 1'-0"

FLOOR PLAN
SCALE: 1/8" = 1'-0"

| LIGHTING FIXTURE SCHEDULE | | | | |
|---------------------------|---------------|--|-----------|--|
| NO. | MANUFACTURER | CAT. NO. | LAMP | DESCRIPTION |
| A1 | METALUX | 24EN-LD2-45-UNV-EL7W-L835-CD1 SK-24-WS | 3500K LED | 2 X 4 SURFACE LED FIXTURE WITH ACRYLIC LENS AND INTEGRAL EMERGENCY BATTERY PACK RATED TO PROVIDE 800 LUMENS FOR 90 MINUTES UPON LOSS OF NORMAL POWER. |
| A2 | METALUX | 22EN-LD2-34-UNV-EL7W-L835-CD1 SK-22-WS | 3500K LED | 2 X 2 SURFACE LED FIXTURE WITH ACRYLIC LENS AND INTEGRAL EMERGENCY BATTERY PACK RATED TO PROVIDE 800 LUMENS FOR 90 MINUTES UPON LOSS OF NORMAL POWER. |
| E1 | SURE-LITES | SEL-50-NICAD-WHITE | (2) LED | SURFACE WALL MOUNTED LED EMERGENCY FIXTURE WITH INTEGRAL NICAD BATTERY RATED TO OPERATE FIXTURE FOR 90 MINUTES UPON LOSS OF NORMAL POWER. |
| E2 | AXIS LIGHTING | PRWLED-800-80-35-S-4-W-120-D-1-B1 | 3500K LED | SURFACE WALL MOUNTED LED FIXTURE WITH ACRYLIC LENS AND INTEGRAL BATTERY RATED TO OPERATE FIXTURE FOR 90 MINUTES UPON LOSS OF NORMAL POWER. |
| J1 | METALUX | 8T-SNLED-LD5-B1SL-LW-UNV-L835-CD2 | 3500K LED | 8 FT. LONG SURFACE LED FIXTURE WITH ACRYLIC FROSTED LENS. |
| J2 | METALUX | 4-SNLED-LD5-41SL-LW-UNV-L835-CD1 | 3500K LED | 4 FT. LONG SURFACE LED FIXTURE WITH ACRYLIC FROSTED LENS. |
| R1 | XELEUM | XHH240-40UY-060 | 4000K LED | PENDANT HUNG HI-BAY LED LIGHT WITH POLYCARBONATE LENS AND 60-DEGREE OPTICAL DISTRIBUTION. PROVIDE PENDANT LENGTH AS SHOWN ON THE DRAWINGS. |
| S1 | McGRAW-EDISON | GWC-AF-02-LED-E1-T4W-BK-600-P120 | 4000K LED | SURFACE WALL MOUNTED EXTERIOR LED FIXTURE WITH DIE-CAST ALUMINUM HOUSING. FIXTURE SHALL BE UL LISTED FOR WET LOCATIONS. |
| X1 | SURE-LITES | APXH-7-R | LED | SURFACE WALL MOUNTED LED UNIVERSAL MOUNT EXIT SIGN INTEGRAL NICAD BATTERY RATED TO OPERATE FIXTURE FOR 90 MINUTES UPON LOSS OF NORMAL POWER. FIXTURE SHALL HAVE RED LETTERS AND WHITE HOUSING. |

- ALL LIGHT FIXTURES ARE 120 VOLT EXCEPT AS SPECIFICALLY NOTED OTHERWISE IN SCHEDULE.
- EQUIVALENT LIGHT FIXTURES BY ALTERNATE MANUFACTURERS WILL BE CONSIDERED FOR APPROVAL.



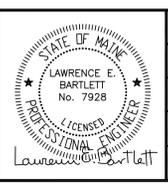
SINGLE LINE DIAGRAM
NOT TO SCALE

- LEGEND**
- PENDANT LIGHT
 - ⊖ WALL MOUNTED EXTERIOR LIGHT
 - ⊗ WALL MOUNTED INTERIOR LIGHT
 - 1 X 8 FLUORESCENT LIGHT
 - 1 X 4 FLUORESCENT LIGHT
 - 2 X 4 FLUORESCENT LIGHT
 - 2 X 2 FLUORESCENT LIGHT
 - ⚡ EMERGENCY LIGHT
 - S1 SINGLE PHASE LIGHT SWITCH
 - S3 3-WAY LIGHT SWITCH
 - 4-CONDUCTOR WIRE
 - 3-CONDUCTOR WIRE
 - WIRE (2 CONDUCTOR WIRE W/ GROUND)

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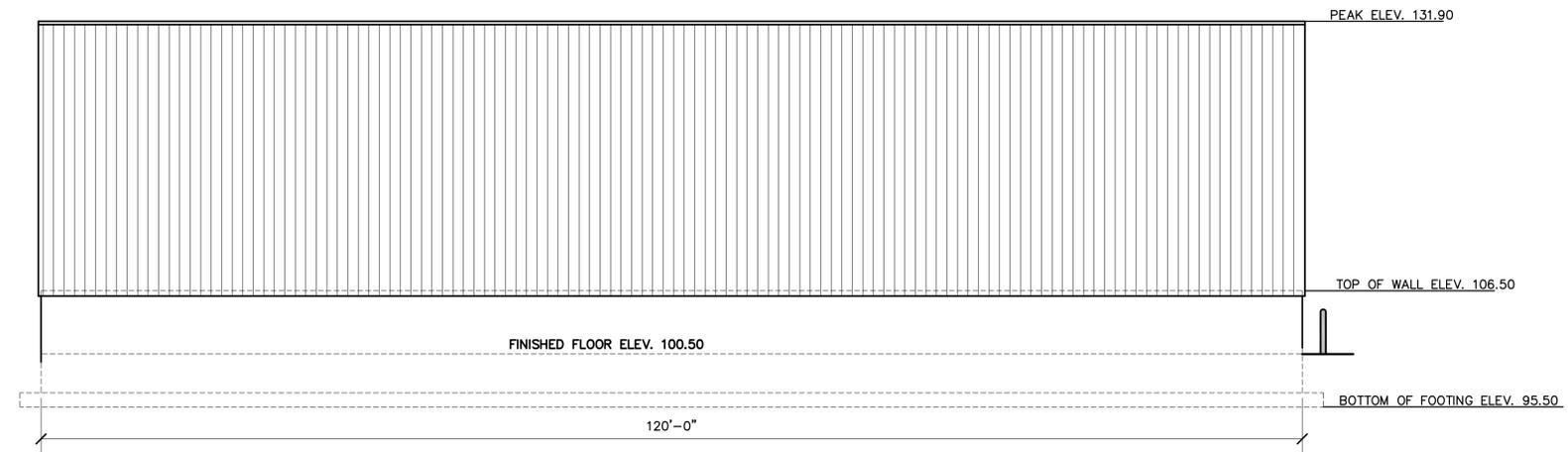
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| TITLE | GARAGE LIGHTING PLAN | PROJECT NO. | 16018 |
| | | DRAWING NO. | 16018 Garage FP |
| | | SHT. | 14 of 19 |
| | | REV. | 0 |

ARCH DESIGN NOTE:

A FULLY ENGINEERED ARCH DESIGN SHALL BE SUPPLIED BY THE MANUFACTURERE BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF MAINE. ARCH PROFILES THAT DIFFER FROM THE PROFILE IN THESE DRAWINGS BUT USED FOR SIMILAR APPLICATIONS IN SIMILAR LOCATIONS WILL BE CONSIDERED.

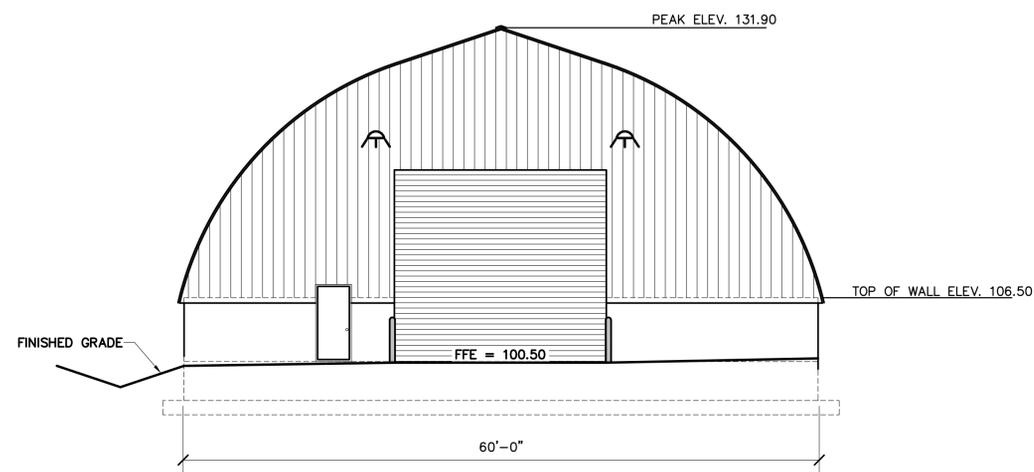
GENERAL DESIGN REQUIREMENTS:

1. CONTACT DIG SAFE 1-888-344-7233 BEFORE ANY EXCAVATION OCCURS
2. ALL CONSTRUCTION SHALL COMPLY WITH 2009 INTERNATIONAL BUILDING CODE
3. USE SAND AND SALT STORAGE LOW HAZARD STORAGE OCCUPANCY (S-2) FIRST FLOOR
4. BUILDING CONSTRUCTION IBC TYPE VB UNPROTECTED
5. OCCUPANCY 500 SQ.FT PER OCCUPANT 1st FLOOR = 17
6. GROUND SNOW LOAD EQUALS 60 PSF
7. BASIC WIND SPEED EQUALS 120 MPH, PARTIALLY ENCLOSED STRUCTURE
8. EXPOSURE RATING B
9. IMPORTANCE CATEGORY II I=10



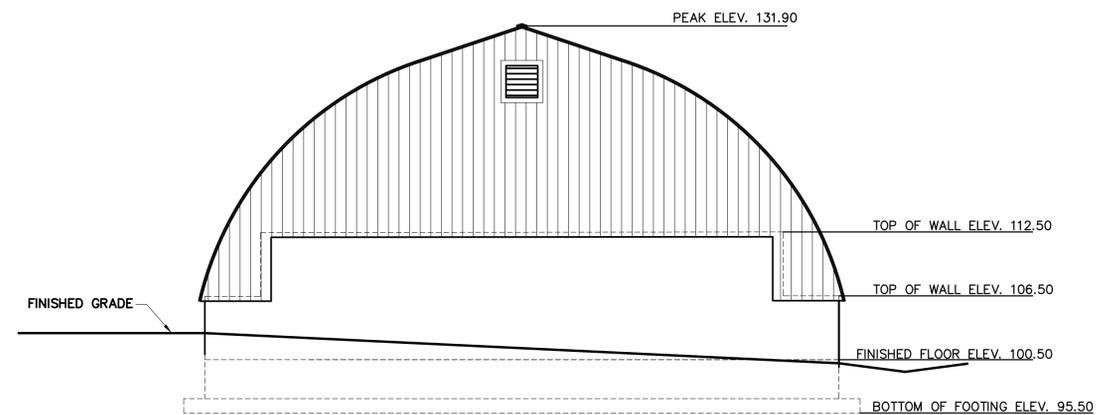
SOUTHWEST AND NORTHEAST VIEWS

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



NORTHWEST VIEW

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

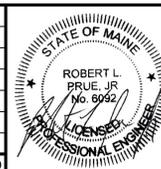


SOUTHEAST VIEW

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

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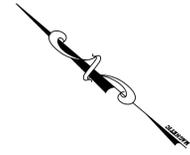
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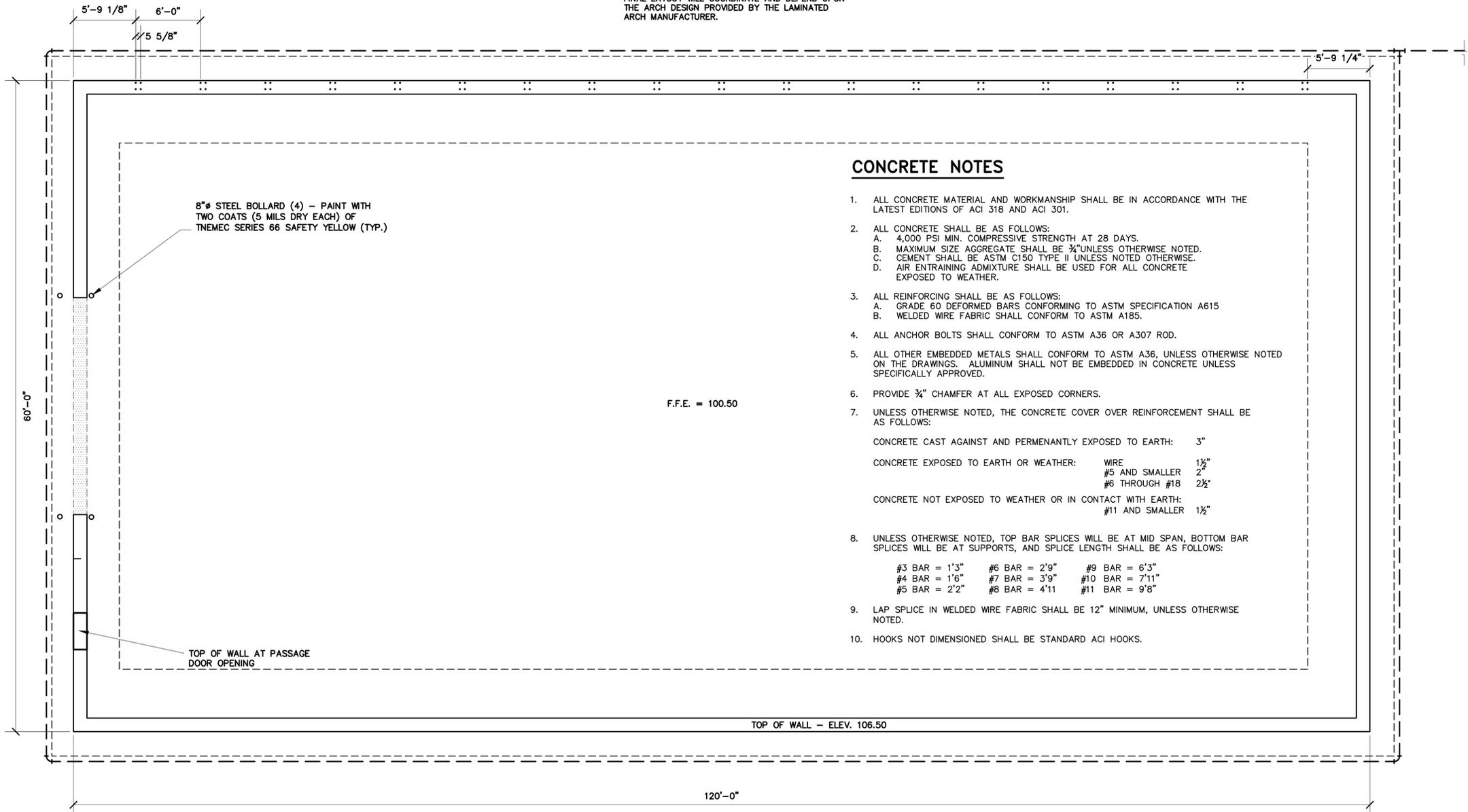
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| PROJECT | PUBLIC WORKS FACILITY |
| TITLE | SAND & SALT STORAGE ELEVATION VIEWS |

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| DRAWING NO. | 16018 SS Elev.dwg |
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NOTE:
 THE ANCHOR BOLT LAYOUT SHOWN HERE IS A
 SAMPLE LAYOUT FOR ESTIMATING PURPOSES. THE
 FINAL LAYOUT WILL COORDINATE AND DEPEND UPON
 THE ARCH DESIGN PROVIDED BY THE LAMINATED
 ARCH MANUFACTURER.



CONCRETE NOTES

1. ALL CONCRETE MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF ACI 318 AND ACI 301.
2. ALL CONCRETE SHALL BE AS FOLLOWS:
 - A. 4,000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS.
 - B. MAXIMUM SIZE AGGREGATE SHALL BE 3/4" UNLESS OTHERWISE NOTED.
 - C. CEMENT SHALL BE ASTM C150 TYPE II UNLESS NOTED OTHERWISE.
 - D. AIR ENTRAINING ADMIXTURE SHALL BE USED FOR ALL CONCRETE EXPOSED TO WEATHER.
3. ALL REINFORCING SHALL BE AS FOLLOWS:
 - A. GRADE 60 DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615
 - B. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
4. ALL ANCHOR BOLTS SHALL CONFORM TO ASTM A36 OR A307 ROD.
5. ALL OTHER EMBEDDED METALS SHALL CONFORM TO ASTM A36, UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALUMINUM SHALL NOT BE EMBEDDED IN CONCRETE UNLESS SPECIFICALLY APPROVED.
6. PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS.
7. UNLESS OTHERWISE NOTED, THE CONCRETE COVER OVER REINFORCEMENT SHALL BE AS FOLLOWS:

| | |
|---|----------------------------|
| CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: | 3" |
| CONCRETE EXPOSED TO EARTH OR WEATHER: | WIRE #5 AND SMALLER 1 1/2" |
| | #6 THROUGH #18 2 1/2" |
| CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH: | #11 AND SMALLER 1 1/2" |
8. UNLESS OTHERWISE NOTED, TOP BAR SPLICES WILL BE AT MID SPAN, BOTTOM BAR SPLICES WILL BE AT SUPPORTS, AND SPLICE LENGTH SHALL BE AS FOLLOWS:

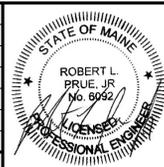
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|---------------|----------------|-----------------|
| #3 BAR = 1'3" | #6 BAR = 2'9" | #9 BAR = 6'3" |
| #4 BAR = 1'6" | #7 BAR = 3'9" | #10 BAR = 7'11" |
| #5 BAR = 2'2" | #8 BAR = 4'11" | #11 BAR = 9'8" |
9. LAP SPLICE IN WELDED WIRE FABRIC SHALL BE 12" MINIMUM, UNLESS OTHERWISE NOTED.
10. HOOKS NOT DIMENSIONED SHALL BE STANDARD ACI HOOKS.

FOUNDATION PLAN

SCALE: 3/16" = 1'-0"

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TITLE

**SAND AND SALT STORAGE
 FOUNDATION PLAN**

SCALE

AS SHOWN

PROJECT NO.

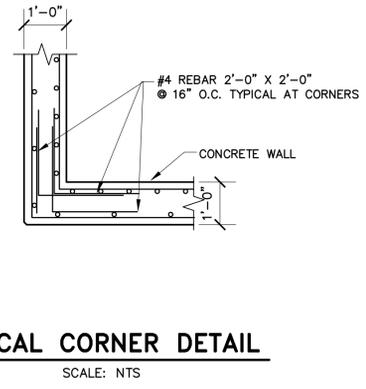
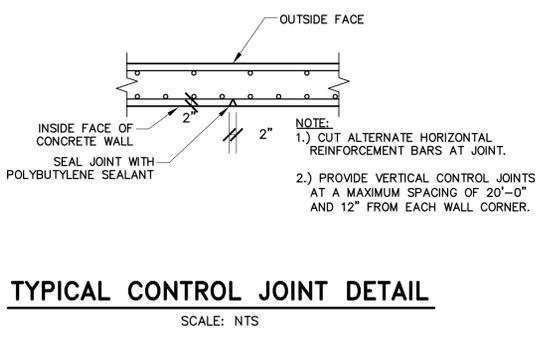
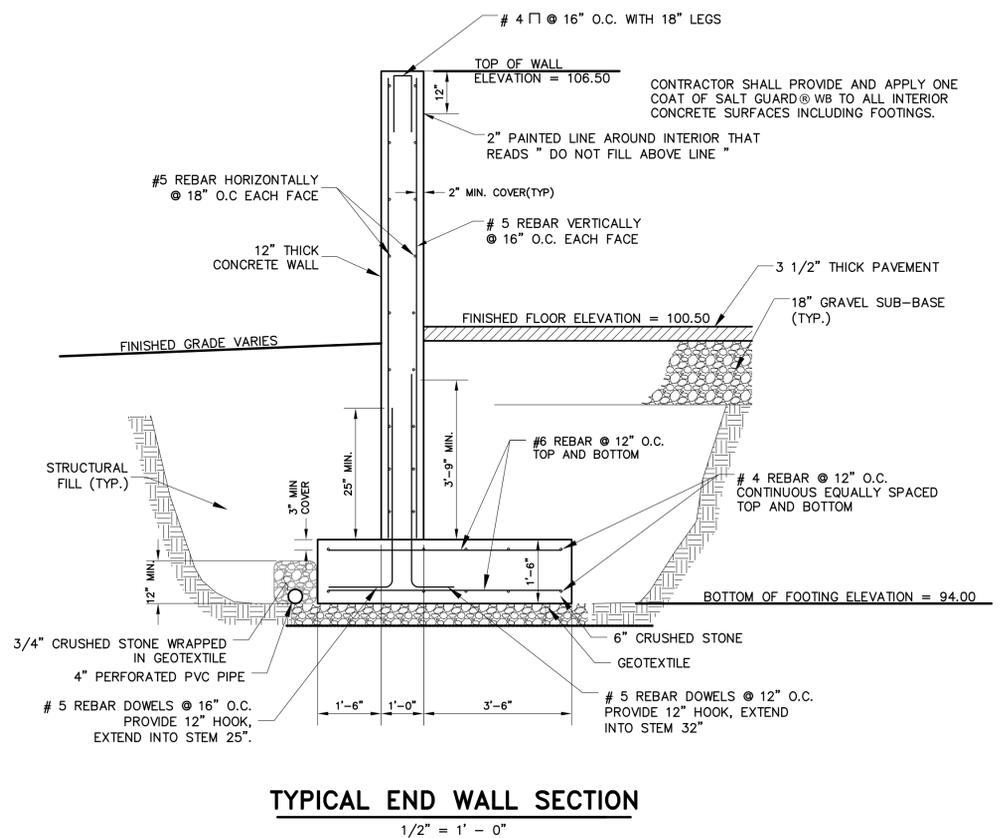
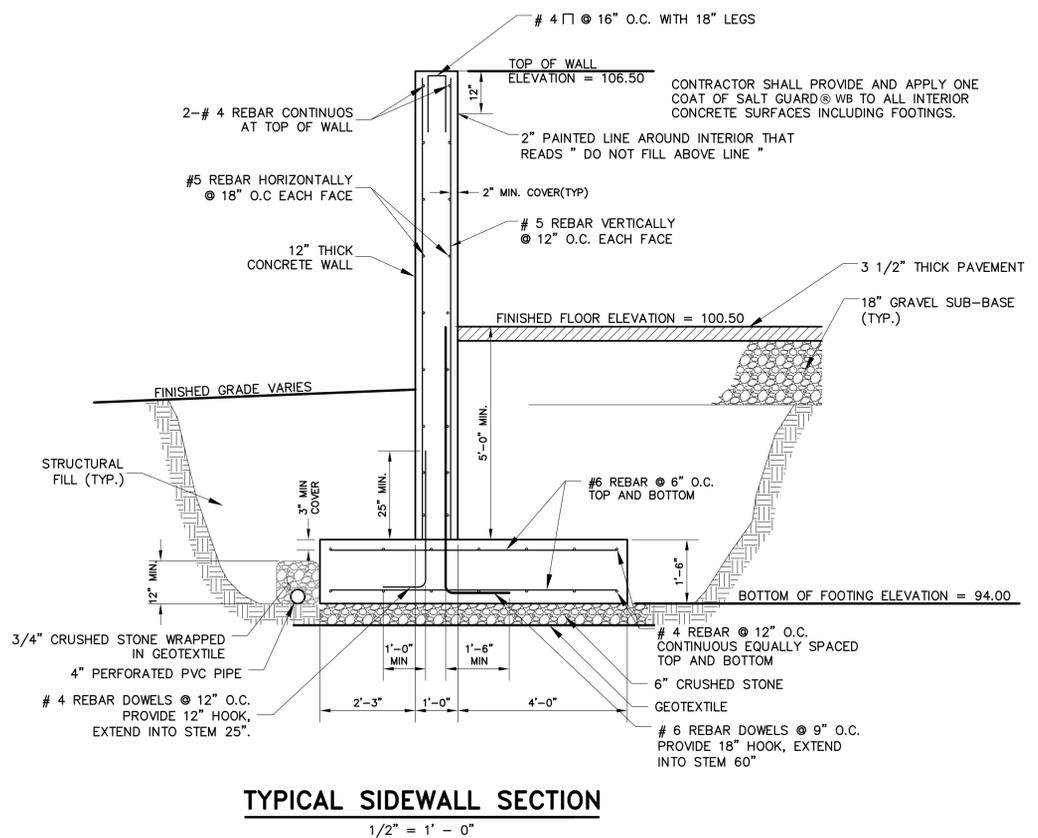
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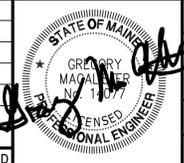
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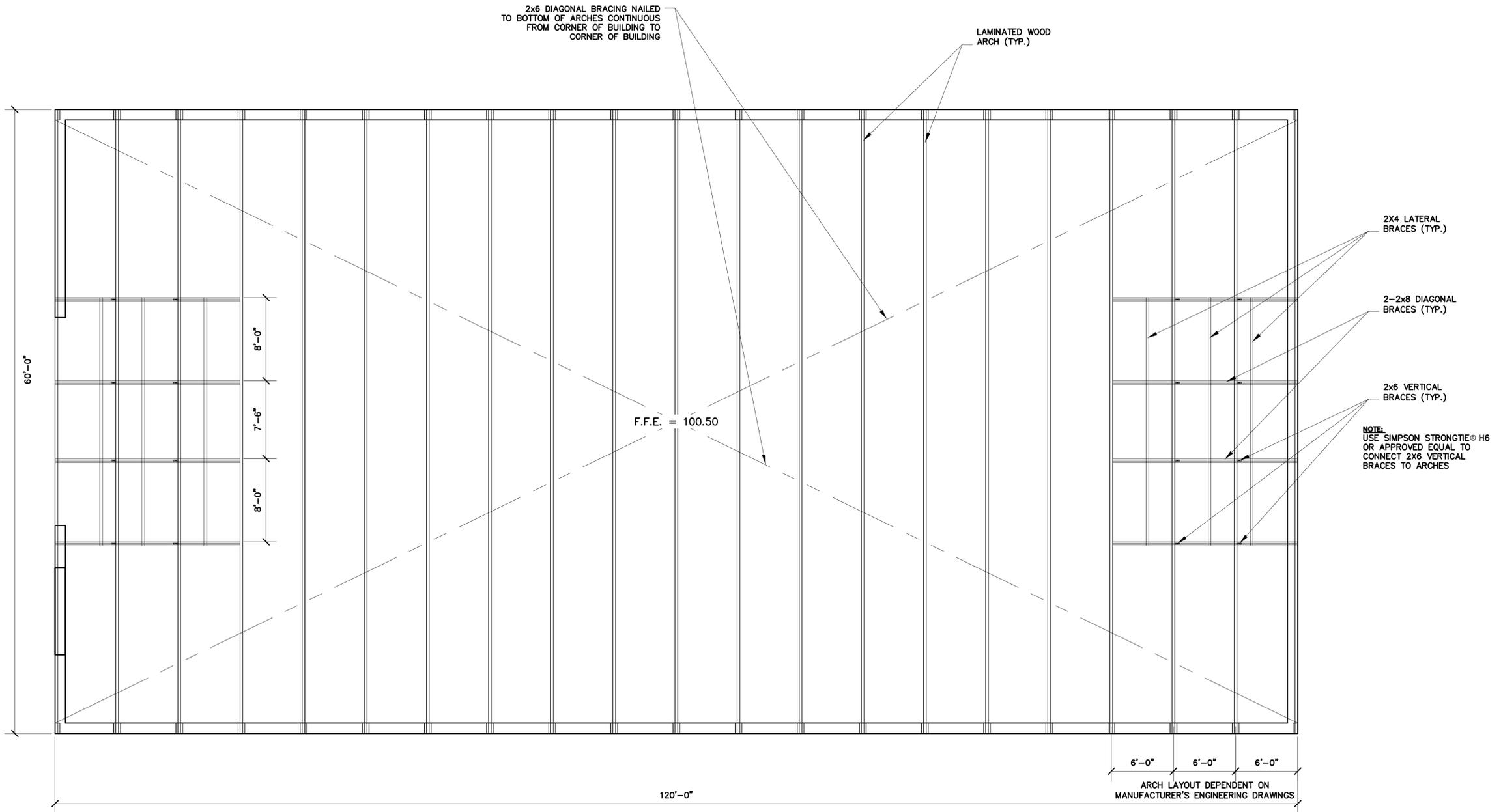
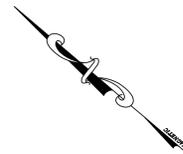
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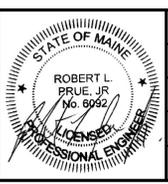
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ROOF FRAMING PLAN
SCALE: 3/16" = 1'-0"

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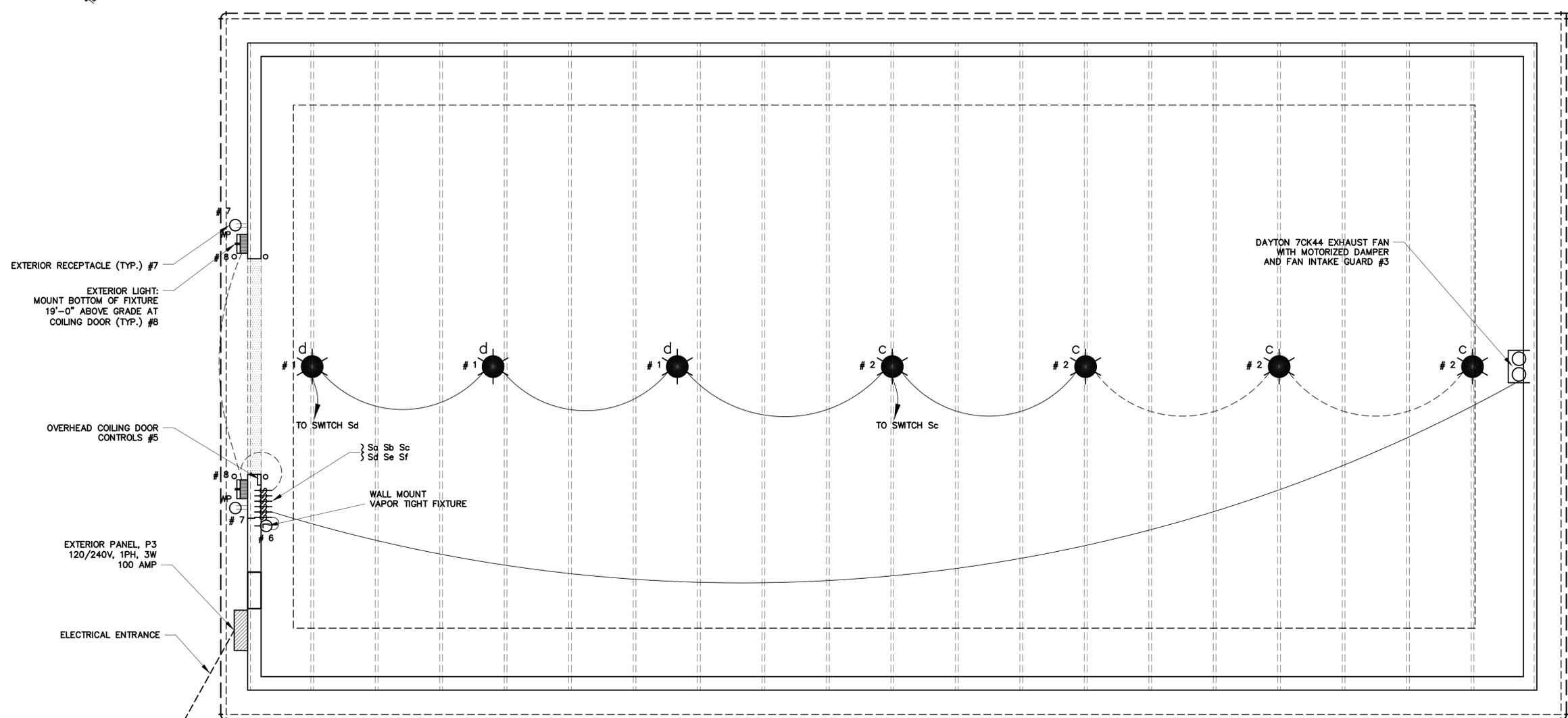
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SAND AND SALT STORAGE ARCH LAYOUT PLAN

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ELECTRICAL PLAN

SCALE: 3/16" = 1'-0"

NOTES

- SUSPEND CENTER PENDANT LIGHTS WITH CHAIN AND SAFETY CABLE TO A HEIGHT OF 24 FEET FROM FINISHED FLOOR TO BOTTOM OF FIXTURE.
- PROVIDE A NEW 120/240V, 1PH SECONDARY SERVICE FROM THE TOWN GARAGE, AND A 4" PVC UNDERGROUND CONDUIT WITH 3 #2 CONDUCTORS TO PANEL P1.
- PROVIDE A 5/8" DIA 8'-0" L GROUND ROD AND GROUNDING AT PANEL P1 IN ACCORDANCE WITH NFPA 70 ARTICLE 250.

LEGEND

- HOLOPHANE # PLED2/18L/4K/12/GH/10/CRG L5H/MS16NWL PENDANT HUNG LED LUMINAIRE
- HOLOPHANE # PMLD/6/4K/10A/AS/65/3/K GP/06/43/PMLD FV-GG/BKT-3HG WALL MOUNTED LED LUMINAIRE
- ONE WAY SWITCH
- WEATHER PROOF GFCI DUPLEX RECEPTACLE
- CIRCUIT BREAKER DESIGNATION
- HUBBELL LIGHTING # WH/VBLU15/VL15LG/VCG15 WALL MOUNTED LED VAPOR TIGHT FIXTURE

PANELBOARD P3

- 120/240V, 1PH, 3W, 100A BUS 100 A/2P MCB SURFACE CABINET
- BRANCH CIRCUIT BREAKERS :
- 1 20A/1P INTERIOR LIGHTS
- 2 20A/1P INTERIOR LIGHTS
- 3 30A/1P EXHAUST FAN
- 4 30A/1P OVERHEAD DOOR
- 5 15A/1P INTERIOR WALL LAMP
- 6 20A/1P EXTERIOR RECEPTACLES
- 7 20A/1P EXTERIOR LIGHTS
- 8-12 20A/1P SPARE

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PROJECT
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