TOWN OF LISBON

CONTRACT #1 WATER SYSTEM IMPROVEMENTS

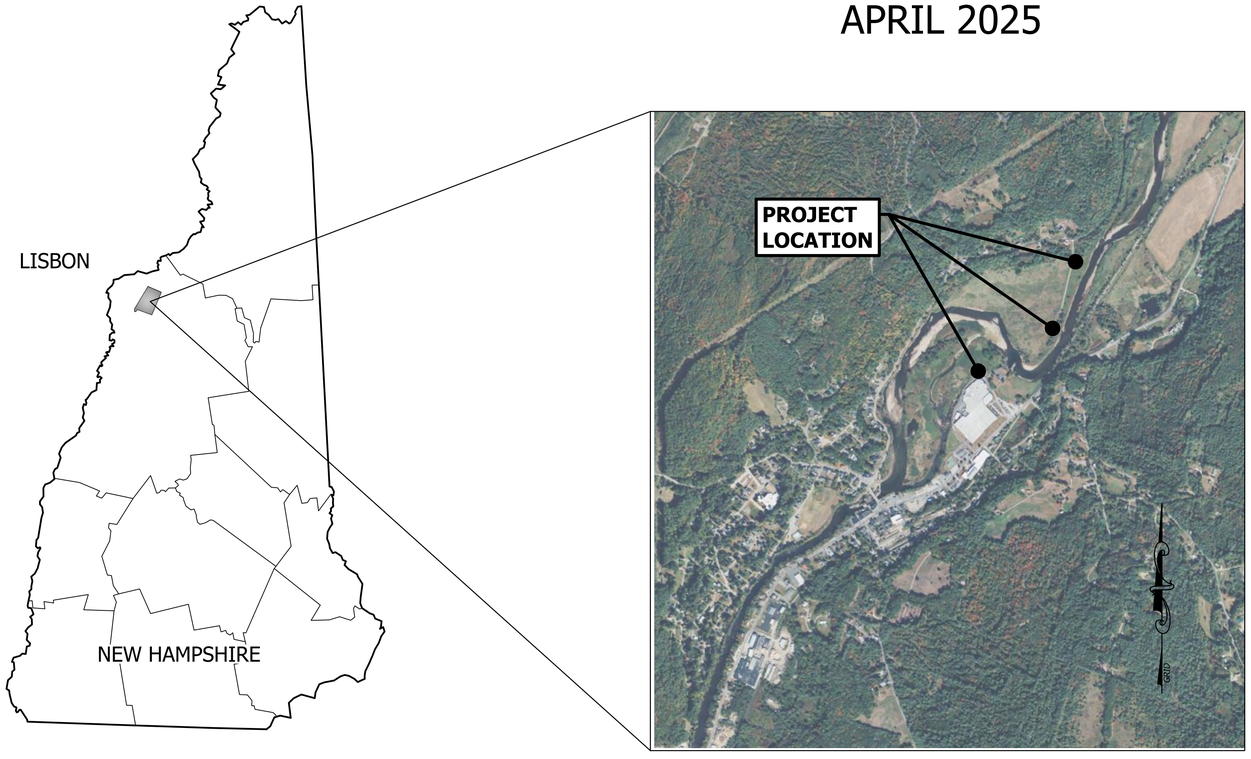
USDA WEP, ARPA 1361010, DWSRF 1361010, DWGT-82

CONTROL BUILDING, WELL SITE, CHEMICAL BUILDING ADDITION & MANGANESE TREATMENT

BISHOP ROAD & VALLEY VIEW DRIVE

LISBON, NEW HAMPSHIRE

APRIL 2025



LOCATION PLAN

SCALE: 1" = 1000'

FOR CONSTRUCTION

DATE OF PRINT
APRIL 17 2025
HORIZONS ENGINEERING

OWNER:
LISBON WATER DEPT
153 SOUTH MAIN ST
LISBON, NH 03585
(603) 838-6376

ENGINEER:
horizons Engineering
34 SCHOOL STREET
LITTLETON, NH 03561
(603) 444-4111

SHEET INDEX:

GENERAL NOTES

1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND TECHNICAL SPECIFICATIONS.
2. NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
3. ALL WORK SHALL BE PERFORMED WITHIN THE PROPERTY OF, AND EASEMENTS SECURED BY, THE OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY HIS ACTIONS. COSTS FOR REQUIRED EROSION CONTROL, REGARDLESS OF WHETHER OR NOT SUCH MEASURES ARE SHOWN ON THE ENGINEERING DRAWINGS, SHALL BE BORNE BY HIM.
6. UTILITY LOCATIONS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING UTILITIES AND SHALL REPAIR ANY DAMAGE AS QUICKLY AS POSSIBLE AT HIS OWN EXPENSE. ALL UTILITIES ENCOUNTERED SHALL BE LOCATED BY DEPTH AND TIES AND SHOWN BY THE CONTRACTOR ON HIS "AS BUILT" DRAWINGS. HAND EXCAVATION SHALL BE DONE WHEREVER UNDERGROUND UTILITIES ARE SHOWN OR ANTICIPATED. THE CONTRACTOR SHALL CONTACT DIG SAFE AND THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION IN ORDER TO VERIFY EXISTING CONDITIONS AND UTILITY LOCATIONS.

LEGEND

- APPROX PROPERTY LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- OHE — OVERHEAD UTILITY LINE
- TREE LINE
- 100YR-FP — 100 YEAR FLOOD PLAIN
- SPB-50 — 50 FT SHORELAND BUFFER
- SPB-150 — SPB-150 — 150 FT SHORELAND BUFFER
- SPB-250 — SPB-250 — 250 FT SHORELAND BUFFER
- WELL
- MONITORING WELL
- WATER SHUTOFF
- UTILITY POLE
- GUY WIRE
- SIGN
- MAIL BOX
- DECIDUOUS TREE
- CONIFER TREE

SITE SPECIFIC NOTES

1. SUBJECT PROPERTY/PROJECT IS LOCATED:
   TOWN OF LISBON NH TAX MAP R20, LOT 1
   40 BISHOP ROAD
   LISBON, NEW HAMPSHIRE
   ZONING DISTRICT D
2. THE SUBJECT PROPERTY IS WITHIN THE 100-YR FLOOD PLAIN, ZONE AE.
3. ALL WORKMANSHIP AND MATERIALS INCORPORATED INTO THE CONSTRUCTION OF IMPROVEMENTS SPECIFIED ON THIS SITE PLAN SHALL CONFORM TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AS PUBLISHED AND AMENDED BY THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
4. THE PROJECT IS LOCATED WITHIN THE SHORELAND BUFFER AREA. A SHORELAND PERMIT BY NOTIFICATION HAS BEEN FILED WITH NHDES.

SHORELAND CONDITIONS

1. EROSION AND SILTATION CONTROL MEASURES SHALL: BE INSTALLED PRIOR TO THE START OF WORK; BE MAINTAINED THROUGHOUT THE PROJECT; AND REMAIN IN PLACE UNTIL ALL DISTURBED SURFACES ARE STABILIZED.
2. EROSION AND SILTATION CONTROLS SHALL BE APPROPRIATE TO THE SIZE AND NATURE OF THE PROJECT AND TO THE PHYSICAL CHARACTERISTICS OF THE SITE, INCLUDING SLOPE, SOIL TYPE, VEGTATIVE COVER, PROXIMITY TO WETLAND OR SURFACE WATERS.
3. NO PERSON UNDERTAKING ANY ACTIVITY IN THE PROJECTED SHORELAND SHALL CAUSE OR CONTRIBUTE TO, OR ALLOW THE ACTIVITY TO CAUSE OR CONTRIBUTE TO ANY VIOLATIONS OF THE SURFACE WATER QUALITY STANDARDS ESTABLISHED IN ENV-Ws 1700 OR SUCCESS RULES IN ENV-Wq 1700.
4. ANY FILL USED SHALL BE CLEAN SAND, GRAVEL, ROCK OR OTHER SUITABLE MATERIAL.
5. FOR ANY PROJECT WHERE MECHANIZED EQUIPMENT WILL BE USED, ORANGE CONSTRUCTION FENCE SHALL: BE INSTALLED PRIOR TO THE START OF WORK AT THE LIMITS OF TEMPORARY IMPACT AREA AS SHOWN ON THE PLANS APPROVED AS PART OF A PERMIT OR ACCEPT AS PART OF THE PERMIT BY NOTIFICATION; BE MAINTAINED THROUGH THE PROJECT; AND REMAIN IN PLACE UNTIL ALL MECHANIZED EQUIPMENT HAS BEEN REMOVED FROM THE SITE.
6. MITIGATION REQUIREMENTS MAY CHANGE TO REFLECT RECOMMENDATIONS MADE BY NHB OR OTHER PARTIES SUCH AS NH FISH & GAME.

AMONOOSUC RIVER

BISHOP ROAD

PROJECT LOCATION

50' SHORELAND PROTECTIVE BUFFER

150' SHORELAND PROTECTIVE BUFFER

250' SHORELAND PROTECTIVE BUFFER

EXISTING 12" WATERMAIN LOCATION FROM WELL SITE TO CHEMICAL BUILDING IS APPROXMATE, NOT VERIFIED.

N/F STATE OF NEW HAMPSHIRE DEPT. OF TRANSPORTATION
MAP R18 LOT 6

N/F BELINDA A. BAILEY
MAP R20 LOT 4

N/F AMMONOOSUC LAND TRUST
MAP R19 LOT 15

N/F VALNEY J. & NANCY FORTIN
MAP R19 LOT 8

N/F BAY VIEW FAMILY TRUST
GOULD BRYAN S & MELISSA A
MAP R19 LOT 5

N/F FREEDOM MORTAGE CORPORATION
MAP R19 LOT 4

N/F ALANA LESSARD
MAP R19 LOT 3

N/F TIMOTHY A. FISHER
MAP R19 LOT 9

N/F ROGER L. & MICHELLE M. WILLIAMS
MAP R19 LOT 2

N/F SUSAN K. CUNNINGHAM
MAP R19 LOT 1

N/F LISBON WATER DEPARTMENT
MAP R20 LOT 1

N/F NEW ENGLAND WIRE-LITTLETON, INC
MAP U6 LOT 5A

N/F ROBERT F. & LINDA CLARK
MAP U6 LOT 5

N/F LISBON WATER DEPARTMENT
MAP U6 LOT 2A

N/F NEW ENGLAND WIRE
MAP U6 LOT 2

0 50 100 200 400
SCALE IN FEET

FOR CONSTRUCTION

DATE OF PRINT
APRIL 17 2025
HORIZONS ENGINEERING

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

PROJECT #: 21215
DATE: APRIL 2025
MAP LOT (FOR ARCHIVE): *
SURVEYED BY: HEI- DJG/NWS
ENGINEERED BY: MLB
DRAWN BY: LJM
CHECKED BY: CFC

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Civil and Structural Engineering
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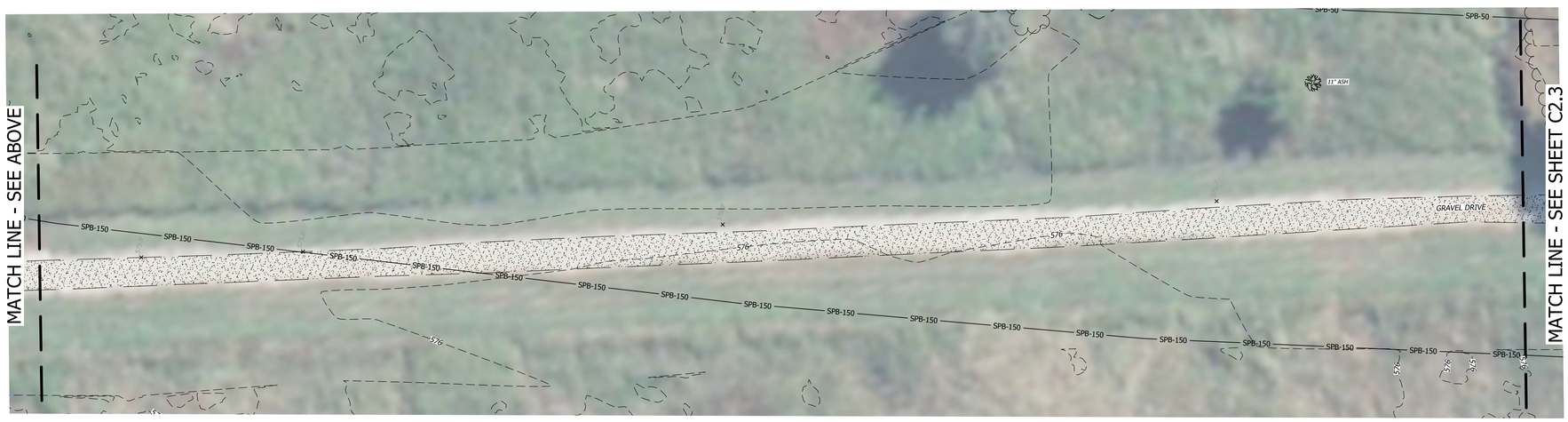
BISHOP ROAD & VALLEYVIEW DRIVE, LISBON, NEW HAMPSHIRE

OVERVIEW, ABUTTER MAP/LOT INFORMATION, GENERAL NOTES & LEGEND

SHEET C2.1

Z:\proj_21\21215\Lisbon Water System\DWGS\Draft\Contract 1 - bishop wellsite\21215_Bishop_site-26.dwg, OVERVIEW, 4/17/2025 3:53:32 PM, LisaMcClure



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0 10 20 40 80

SCALE IN FEET

PLAN REFERENCES:

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3. THE PROPERTY BOUNDARIES ARE APPROXIMATE PER THE TOWN OF LISBON TAX RECORDS A THE TIME THIS PLAN WAS PREPARED.

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SURVEYED BY:	HEI- DJG/NWS
ENGINEERED BY:	MLB
DRAWN BY:	LJM
CHECKED BY:	CFC

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - MARK L. BOWEN No. 14151

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EXISTING CONDITIONS PLAN

SHEET C2.2

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GRID

0 10 20 40 80

SCALE IN FEET

FOR CONSTRUCTION

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DATE: APRIL 2025
MAP-LOT (OR ARCHIVE): *
SURVEYED BY: HEI- DJG/NWS
ENGINEERED BY: MLB
DRAWN BY: LJM
CHECKED BY: CFC

NEW HAMPSHIRE - STATE OF - PROFESSIONAL ENGINEER - MARK L. BURNELL - 14 MAY 2019

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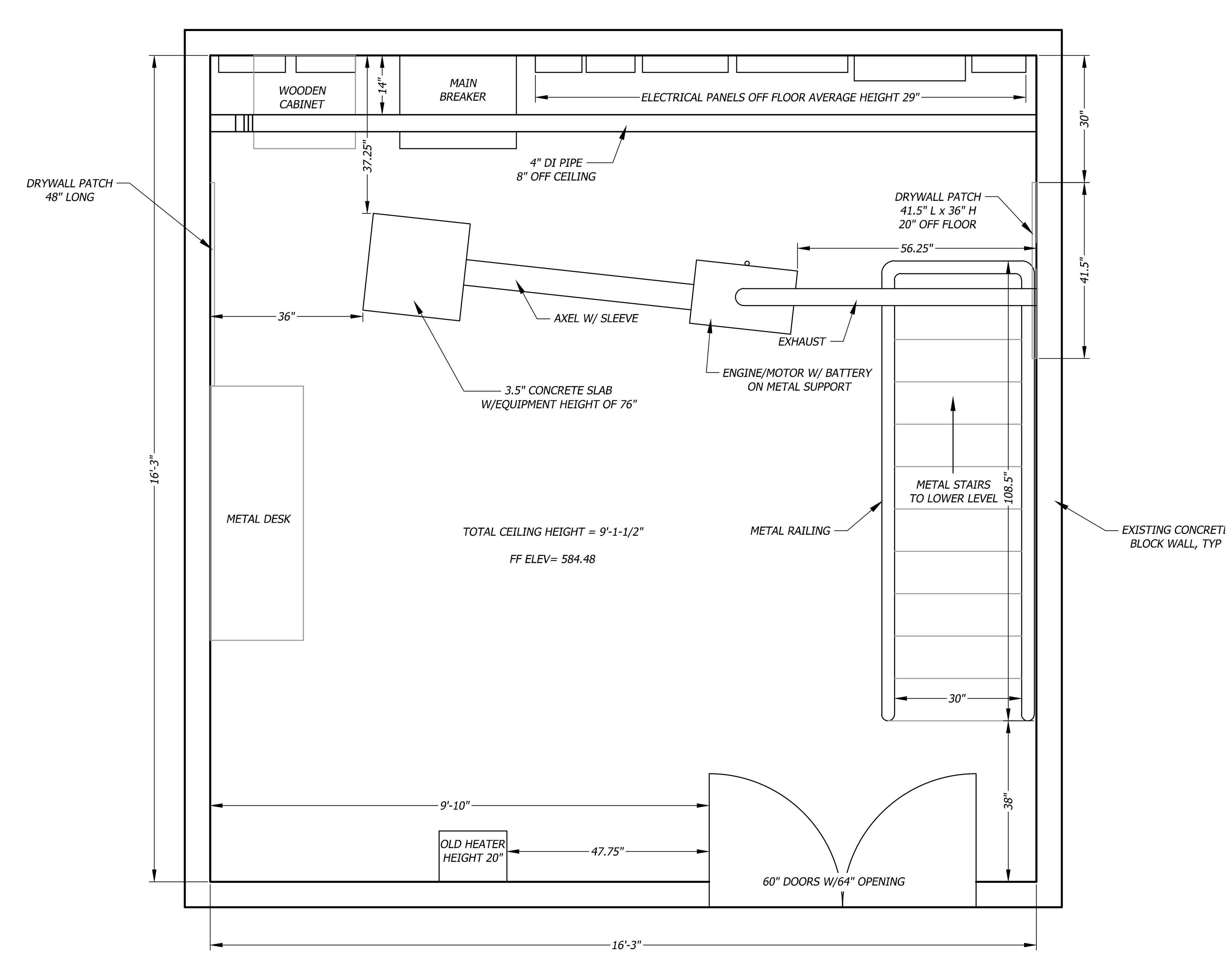
BISHOP ROAD & VALLEYVIEW DRIVE, LISBON, NEW HAMPSHIRE

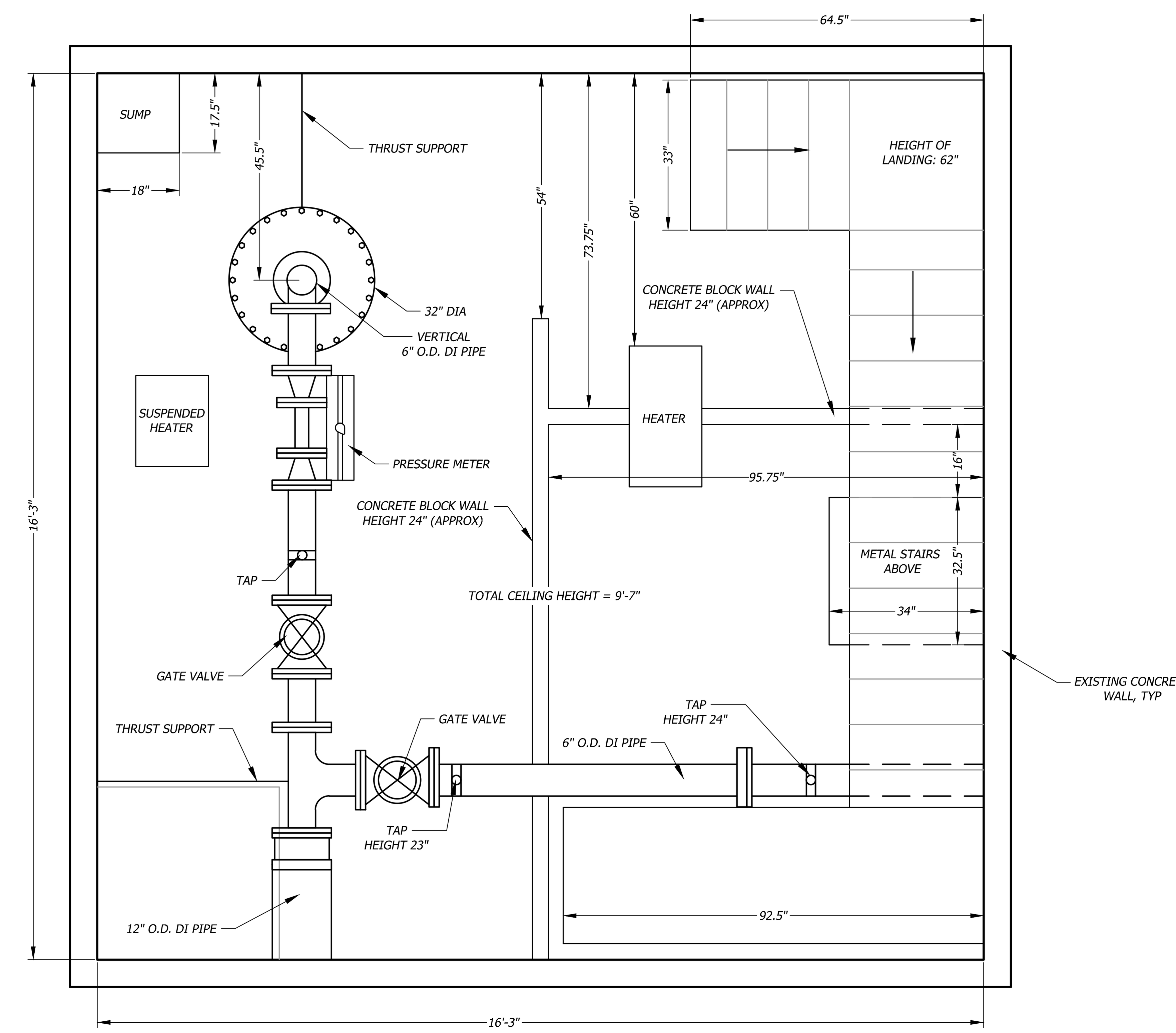
EXISTING CONDITIONS PLAN

SHEET C2.3



EXISTING BUILDING - UPPER LEVEL

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



EXISTING BUILDING - LOWER LEVEL

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

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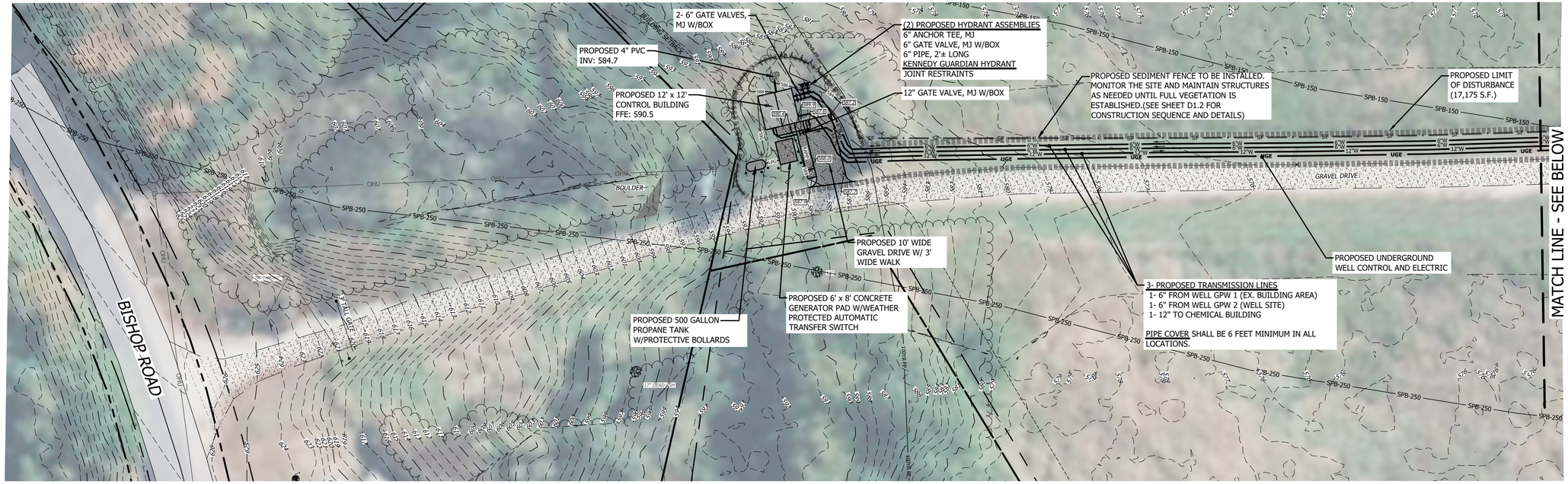
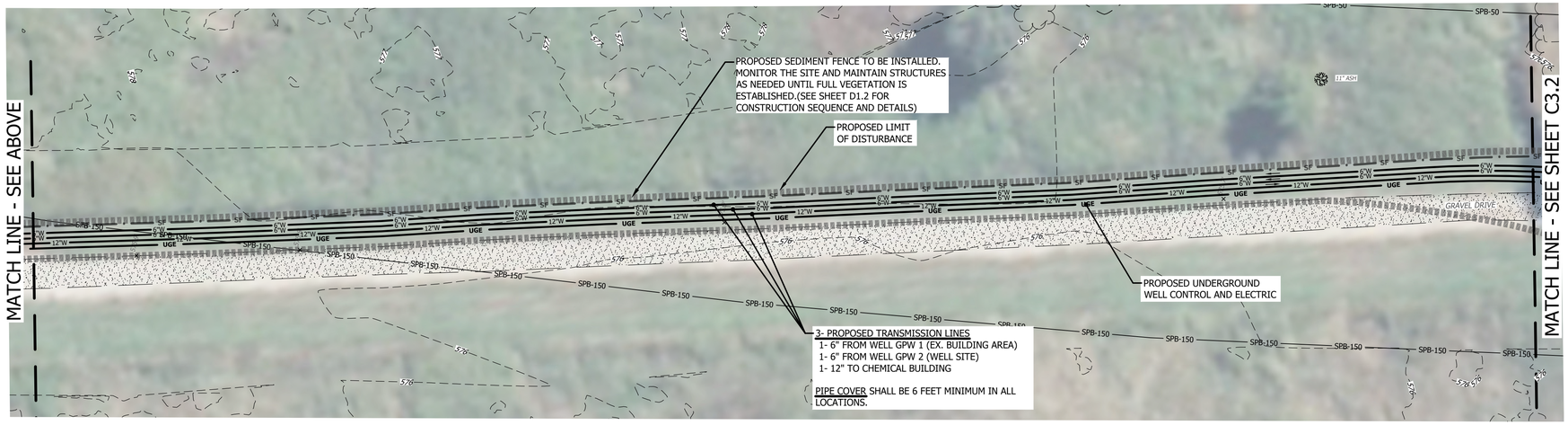
EXISTING BUILDING PLAN

SHEET C2.4





SHORELAND PROTECTIVE BUFFER AREA

50'-150' SPA - DISTURBED AREA WITHIN THE SHORELAND PROTECTIVE BUFFER
(50' TO 150') = 12,685 SF

150'-250' SPA - DISTURBED AREA WITHIN THE SHORELAND PROTECTIVE BUFFER
(150' TO 250') = 4,490 SF

TOTAL IMPACT AREA WITHIN 250' SPA = 17,175 S.F.

SHORELAND CONDITIONS

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PROPOSED CONSTRUCTION SCHEDULE

THE INTENT OF THIS CONSTRUCTION SCHEDULE IS TO MITIGATE AS MUCH WELL PRODUCTION DOWNTIME AS POSSIBLE. SINCE ALL THE WELL DISTRIBUTION MAIN IS LOCATED WITHIN THE EXISTING WELL BUILDING, HORIZONS PROPOSES THAT THE NEW CONTROL BUILDING, AND PIPING TO WELL GPW 2 BE ACTIVE PRIOR TO THE DEMOLITION OF THE EXISTING BUILDING SURROUNDING WELL GPW 1.

1. CLEAR AND GRUB WELL CONTROL BUILDING SITE
2. CONSTRUCT WELL CONTROL BUILDING
   a. ALLOW 3 PIPE PENETRATIONS THROUGH THE FLOOR (2 FOR WELL WATER, 1 FOR TRANSMISSION TO CHEMICAL BUILDING).
   b. CAN START CONSTRUCTING WATERLINES/ELECTRIC/CONTROLS TOWARDS WELLS
3. CONSTRUCT ELECTRICAL AND MECHANICAL INSIDE CONTROL BUILDING
4. CONNECT NEW 6" WELL LINE AND CONTROLS FROM NEW CONTROL BUILDING TO FURTHEST WELL GPW 2. MAKE CONNECTION FROM WELL CONTROL BUILDING TO TRANSMISSION LINE TO CHEMICAL BUILDING
   a. VERIFY THAT WATER IS BEING SUPPLIED TO THE CHEMICAL BUILDING
5. REMOVE EQUIPMENT FROM OLD BUILDING AND PROTECT EXISTING WELL IN THE BASEMENT
   a. DEMOLISH AND REMOVE BUILDING
   b. RAISE WELL CASING ELEVATION TO 585.00
   c. RAISE GRADE AROUND CASING, WATERPROOF CASING, INSTALL PITLESS ADAPTER AND MAKE CONNECTION FROM NEW WELL CONTROL BUILDING TO WELL WITH WATER LINE AND ELECTRIC/CONTROLS
      NOTE:
      - *WELL WILL NEED TO BE PURGED AND CLEANED PRIOR OPERATION SINCE IT HAS NOT BEEN VERY ACTIVE*
   d. FINISH GRADING AROUND WELL SITE
6. FINISH SITE WORK AROUND WELL CONTROL BUILDING

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0 10 20 40 80

SCALE IN FEET

FOR CONSTRUCTION

DATE OF PRINT
MAY 29 2026
HORIZONS ENGINEERING

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	MAY 2026	RAMP TO CONTROL BLDG	MLB	LJM

PROJECT #: 21215
DATE: APRIL 2025
MAP LOT (OR ARCHIVE): *
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ENGINEERED BY: MLB
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SITE IMPROVEMENTS PLAN

SHEET C3.1

WELL CLEANING:

(NHDES GROUNDWATER DISCHARGE PERMIT REQUIRED) 1

PRIOR TO INSTALLATION OF NEW WELL PUMPS IN WELL GPW 1 AND WELL GPW 2 THE WELLS SHALL BE CLEANED. THE FOLLOWING IS A SUGGESTED PROCEDURE TO BE FOLLOWED AND CHEMICALS TO BE USED:

1. REMOVE WELL PUMP. CLEAR THE WELL OF ANY LOOSE ROCKS, SEDIMENT, OR OTHER DEBRIS THAT MAY HAVE FALLEN INTO THE WELL.
2. EXAMINE THE WELL CASING FOR ANY CRACKS, LEAKS OR SIGNS OF DETERIORATION. COMPLETE A VIDEO SURVEY OF THE WELL AND A SPECIFIC CAPACITY TEST PRIOR TO WELL CLEANING WITH TREATMENT FLUIDS.
3. EFFECTIVE CLEANING OF THE WELL IS ACHIEVED BY PUSHING THE TREATMENT FLUIDS INTO THE FORMATION AND ALLOWING THE TREATMENT FLUIDS TO REACT TO THE WELL BLOCKAGE. PROPOSED CLEANING SOLUTION OF NUWELL-120 LIQUID ACID IN COMBINATION WITH NUWELL-310 BIOACID DISPERSANT AND NUWELL-400 NON-IONIC SURFACTANT, OR EQUIVALENT CHEMICAL MANUFACTURER IS TO BE USED. ALL TREATMENT CHEMICALS ARE TO BE NSF CERTIFIED FOR POTABLE WATER WELL USE AND DISPOSED OF PER MANUFACTURERS RECOMMENDATIONS. DETERMINE REQUIRED AMOUNTS OF CHEMICALS PER MANUFACTURERS' RECOMMENDATIONS.
4. PHYSICALLY CLEAN THE INSIDE OF THE WELL BY REMOVAL ANY LOOSE SCALE DEPOSITS. THIS CAN BE ACCOMPLISHED BY BRUSH, JETTINGS OR OTHER METHODS. EVACUATE ALL OF THE LOOSE MATERIAL FROM THE WELL AFTER PHYSICALLY CLEANING THE WELL.
5. A SOLUTION OF 40% OF THE TOTAL TREATMENT VOLUME OF CLEAN, POTABLE WATER SHOULD BE USED TO MIX WITH THE RECOMMENDED TREATMENT CHEMICALS IN THE TANK ON THE SURFACE. THE MIXING TANK SHALL HAVE A CAPACITY OF AT LEAST 20% GREATER THAN THE VOLUME OF THE SOLUTION TO BE MIXED IN THE TANK IN ORDER TO AVOID SPILLING DURING THE MIXING AND TRANSFER OR THE CHEMICALS CAN BE MIXED IN MULTIPLE BATCHES. BLEND THE NUWELL-120 ACID INTO THE WATER, THEN ADD NUWELL-310 BIOACID DISPERSANT AND NUWELL-400 NON-IONIC SURFACTANT, AGAIN AND BLEND THOROUGHLY.
6. PLACE 75% OF THE CLEANING SOLUTION ACROSS THE SCREEN SECTION BY SPOTTING IT WITH A DOUBLE SURGE BLOCK AND SWAPPING THE SOLUTION INTO THE SCREEN. WASH THE CASING WITH THE CLEANING SOLUTION IN THE WELL TO HELP CLEAN THE UPPER NON-WETTED PORTION OF THE CASING.
7. CHECK THE PH AT 30 TO 60 MINUTE INTERVALS ESPECIALLY IN THE BEGINNING TO BE ABLE TO MAINTAIN A MINIMUM PH OF 3.0 IN THE CLEANING SOLUTION IN THE WELL. IF THE PH RISES ABOVE 4, ADD APPROXIMATELY HALF OF THE REMAINDER OF THE CLEANING SOLUTION TO THE WELL. AFTER APPROXIMATELY 12 HOURS, PLACE THE REMAINDER OF THE ACID SOLUTION IN THE SCREEN SECTION AND WORK IT INTO THE FORMATION. ALLOW THE SOLUTION TO REMAIN IN THE WELL FOR A MINIMUM PERIOD OF 24 TO 48 HOURS.
8. SWAB THE WELL PERIODICALLY TO MOVE THE CLEANING FLUIDS INTO THE FORMATION TO FACILITATE CLEANING. USE DELIBERATE STROKING TO PUSH VOLUMES OF CLEANER INTO THE AREA OUTSIDE THE SCREEN. OCCASIONALLY CHECK THE PH OF THE TREATMENT SOLUTION AND ADD AN QUANTITY OF ACID WHENEVER NEEDED TO MAINTAIN A PH NEAR 3.
9. AFTER THE CLEANING SOLUTION HAS WORKED IN THE WELL FOR AT LEAST 24-48 HOURS, PUMP THE ACID TO A WASTE HOLDING AREA AND NEUTRALIZE IT PRIOR TO DISPOSAL.
10. IF THE WELL SHOWS SIGNS OF MECHANICAL BLOCKAGE DUE TO SEDIMENT INFILTRATION OR IF THE PRODUCED WATER IS EXHIBITING ELEVATED OCCURRENCE OF VERY FINE SAND, SILTS AND CLAYS. IT IS RECOMMENDED TO REDEVELOP THE WELL USING NUWELL-220 CLAY DISPERSANT.
11. ONCE WELLS HAVE BEEN CLEANED AND REDEVELOPED, INSTALL NEW WELL PUMP AND WELL LEVEL TRANSDUCERS, DISINFECT AND FIELD TEST PRIOR TO OPERATION.

REPLACEMENT PUMPS:

GRUNDFOS 192500C5 475S400-5B 40 HP 60 Hz (OR EQUAL)

1. WELL GPW 1 & WELL GPW 2 REPLACEMENT PUMPS SHALL HAVE A DESIGN POINT OF 350 GPM AT 310 TOTAL DYNAMIC HEAD
2. BOTH PUMPS SHALL BE SUBMERSIBLE WELL PUMPS WITH VARIABLE FREQUENCY DRIVES AND INCLUDE LEVEL TRANSDUCERS AS PART OF THE INSTALLATION.
3. PRIOR TO OPERATION OF NEW WELL PUMPS, WELL GPW 1 AND WELL GPW 2 SHALL BE CLEANED

EARTH WORK DATA

TOTAL PROPERTY IMPACT AREA:	35,900 S.F.
• EARTH BURROW:	18,725 S.F.
• WATER SYSTEM:	17,175 S.F.
TOTAL FILL VOLUME : 360 Cu Yds	
• DEMOLISHED BUILDING:	30 Cu Yds
• RAISED WELL GRADING:	330 Cu Yds
TOTAL CUT USABLE VOLUME:	380 Cu Yds
• EARTH BURROW: (1 - 1½ FT BELOW EXISTING GRADE)	670 Cu Yds
• 6" TOP SOIL:	290 Cu Yds

0 10 20 40 80

SCALE IN FEET

FOR CONSTRUCTION

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APRIL 17 2025
HORIZONS ENGINEERING

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	JUNE 2025	WELL CLEANING (GROUNDWATER DISCHARGE PERMIT REQUIRED)	MLB	LJM

PROJECT #:	21215
DATE:	APRIL 2025
MAP-LOT (OR ARCHIVE)	*
SURVEYED BY:	HEI- DJG/NWS
ENGINEERED BY:	MLB
DRAWN BY:	LJM
CHECKED BY:	CFC

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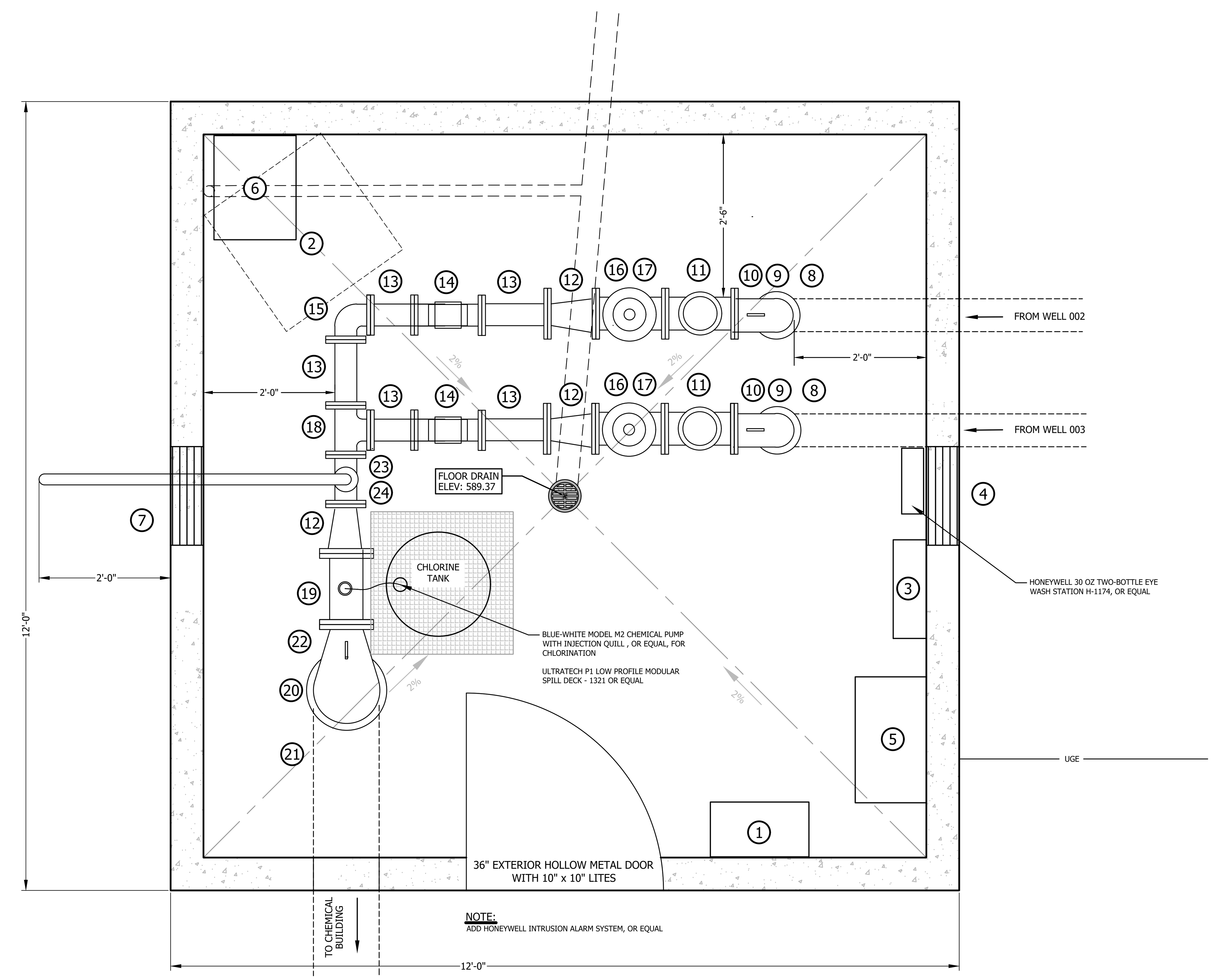
TOWN OF LISBON
CONTRACT #1 WATER SYSTEM IMPROVEMENTS
USDA WEP, ARPA 1361010, DW SRF 1361010, DWGT-82
CONTROL BUILDING, WELLSITE,
CHEMICAL BUILDING ADDITION & MANGANESE TREATMENT
BISHOP ROAD & VALLEYVIEW DRIVE, LISBON, NEW HAMPSHIRE

SITE IMPROVEMENTS PLAN

SHEET C3.2



PROPOSED CONTROL BUILDING LAYOUT

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

MECHANICAL EQUIPMENT SCHEDULE

ITEM	DESCRIPTION
1	AUTOMATIC TRANSFER SWITCH
2	PROPANE GAS HEATER, REZNOR V3, 30,000 BTU, MODEL UDAS, 26" x 26" x 12" H, CEILING MOUNT, WITH WALL MOUNT THERMOSTAT, OR EQUAL.
3	MAIN BREAKER PANEL
4	18" x 18" AIR INLET LOUVER AND GRAVITY RELIEF DAMPER, GREENHECK, OR EQUAL
5	CONTROL PANEL
6	DAYTON DEHUMIDIFIER, MODEL #55HE55 CONTINUOUS DRAIN, OR EQUAL
7	18" x 18" AIR OUTLET LOUVER AND GRAVITY RELIEF DAMPER AND SIDEWALL DIRECT DRIVE 3/4 HP EXHAUST FAN, GREENHECK, OR EQUAL.

VALVE & PIPING SCHEDULE

ITEM	DESCRIPTION	ITEM	DESCRIPTION
8	6" PIPE THROUGH FLOOR	17	6" TAPPED TEE, FLANGED, 2" TAP WITH 1" BUSHING TURNED UP
9	6" 90° FLANGED ELBOW	18	4" FLANGED TEE
10	WELL PRESSURE GAUGE LIQUID FILLED 0-200 PSI	19	6" SCH80 SPOOL PIECE WITH MAINTENANCE COUPLING
11	6" CHECK VALVE	20	12"x 6" 90° FLANGED REDUCING ELBOW
12	6"x 4" CONCENTRIC REDUCER	21	12" PIPE THROUGH FLOOR
13	4" SCH80 SPOOL PIECE WITH MAINTENANCE COUPLING	22	DISCHARGE PRESSURE GAUGE LIQUID FILLED 0-200 PSI
14	4" BADGER MODMAG M2000 FLOW METER, OR EQUAL	23	4" TAPPED TEE, 2" TAP TURNED UP
15	4" 90° FLANGED ELBOW	24	2" NPT SURGE RELIEF VALVE, ROSS 20WR, OR EQUAL, WITH 2" ISOLATION BALL VALVE. PROVIDE 2 INCH GALVANIZED STEEL DISCHARGE THROUGH WALL WITH ELBOW TURNED DOWN AND STAINLESS STEEL INSECT SCREEN.
16	MANIFOLD WITH 1" PRESSURE AIR RELEASE VALVE, CRISPIN PL10 WITH 1/8" ORIFICE OR EQUAL, WITH 1" ISOLATION BALL VALVE AND 3/4" SAMPLE TAP		

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CONTROL BUILDING LAYOUT PLAN

FOR CONSTRUCTION

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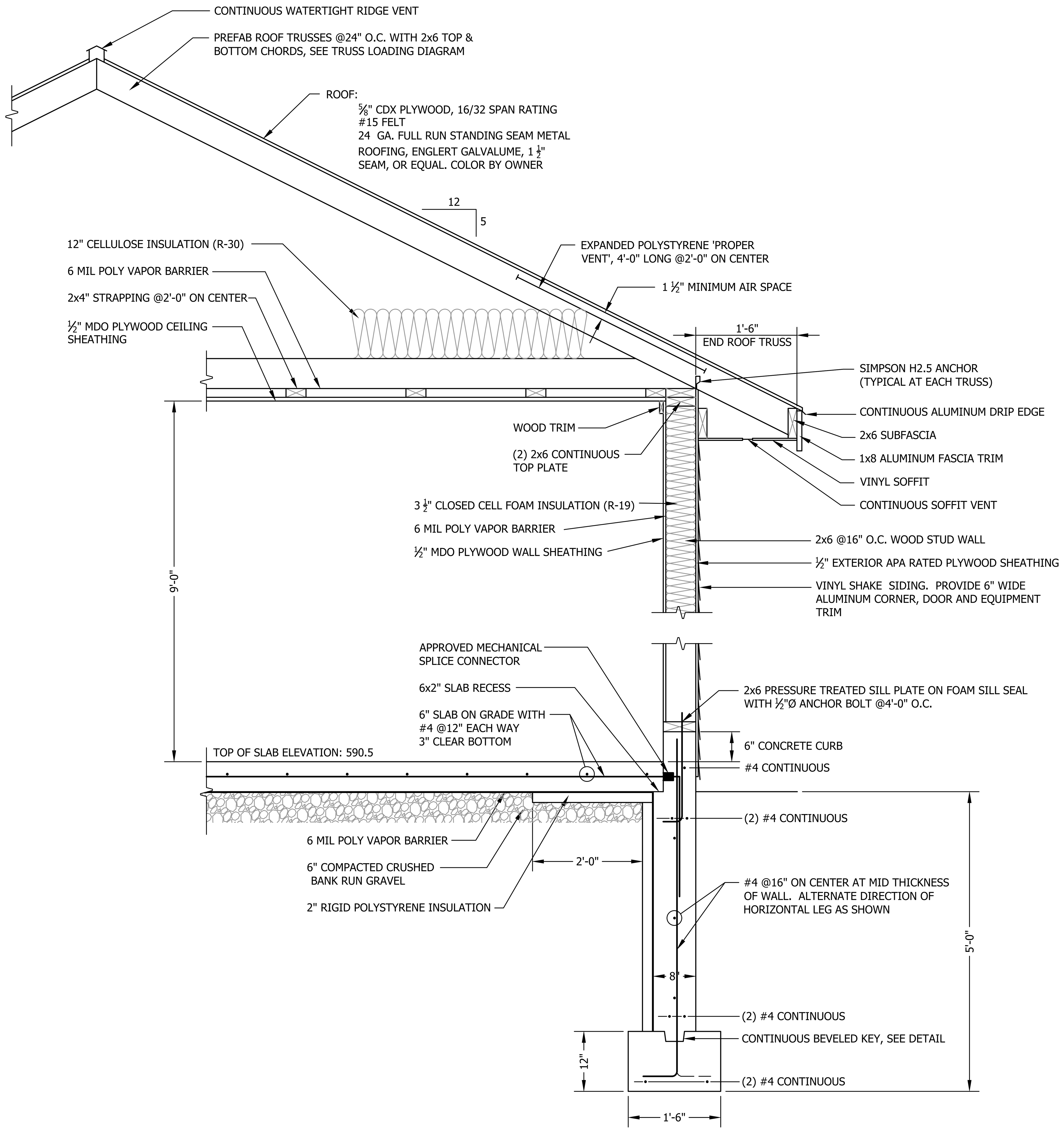
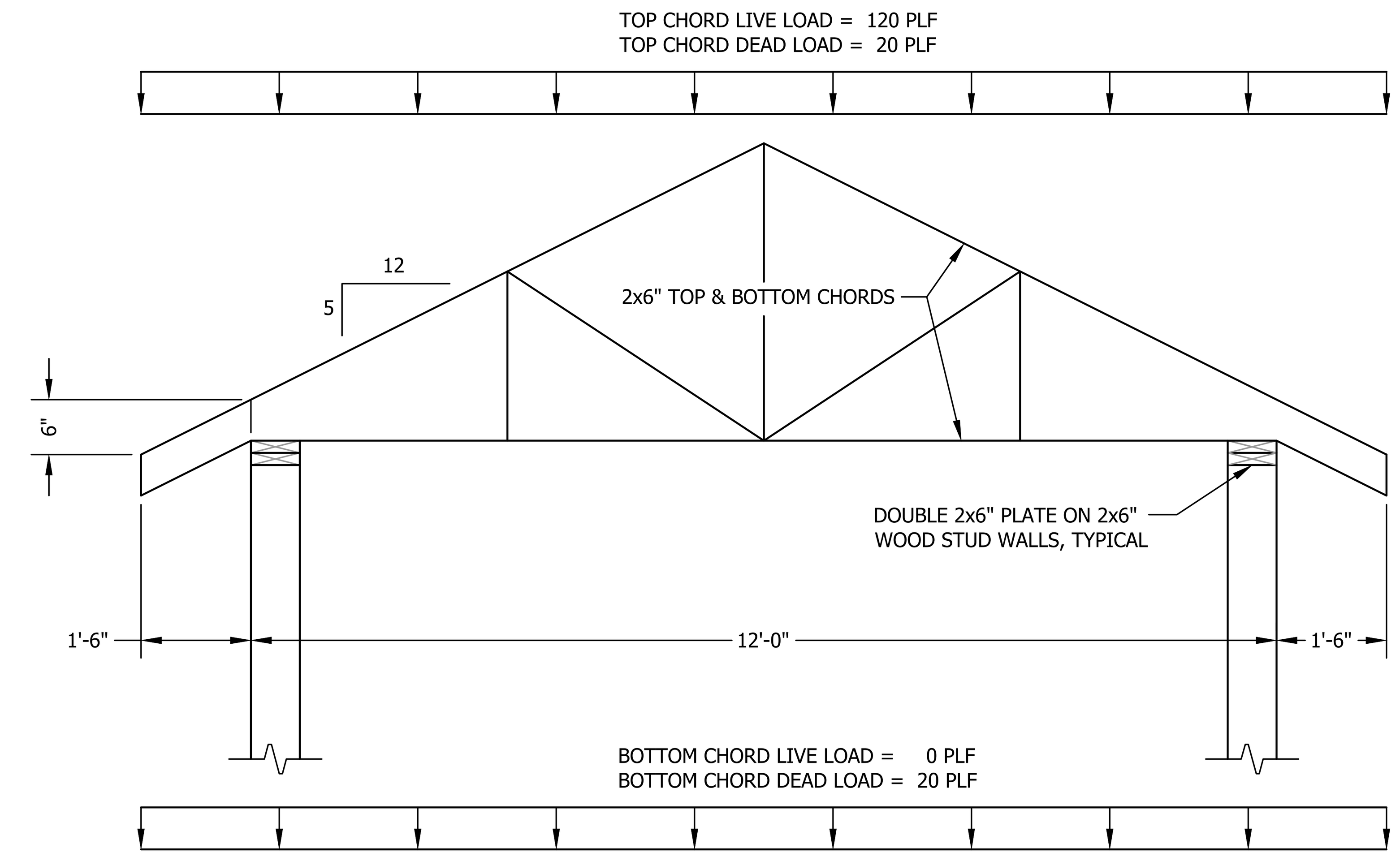


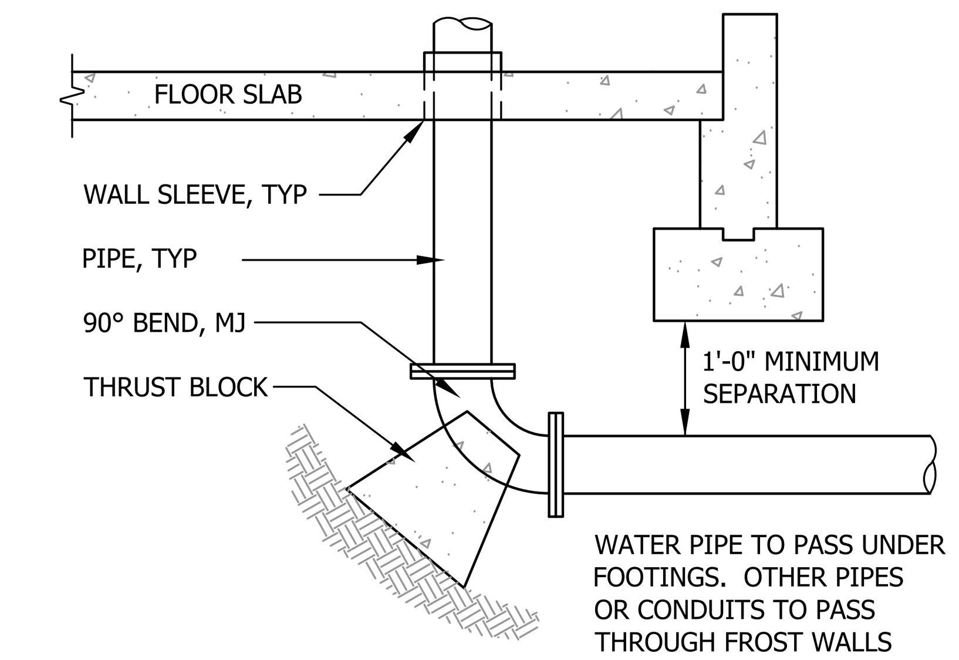
TYPICAL BUILDING SECTION

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



ROOF TRUSS LOADING DIAGRAM

NOT TO SCALE



FLOOR PIPE PENETRATION DETAIL

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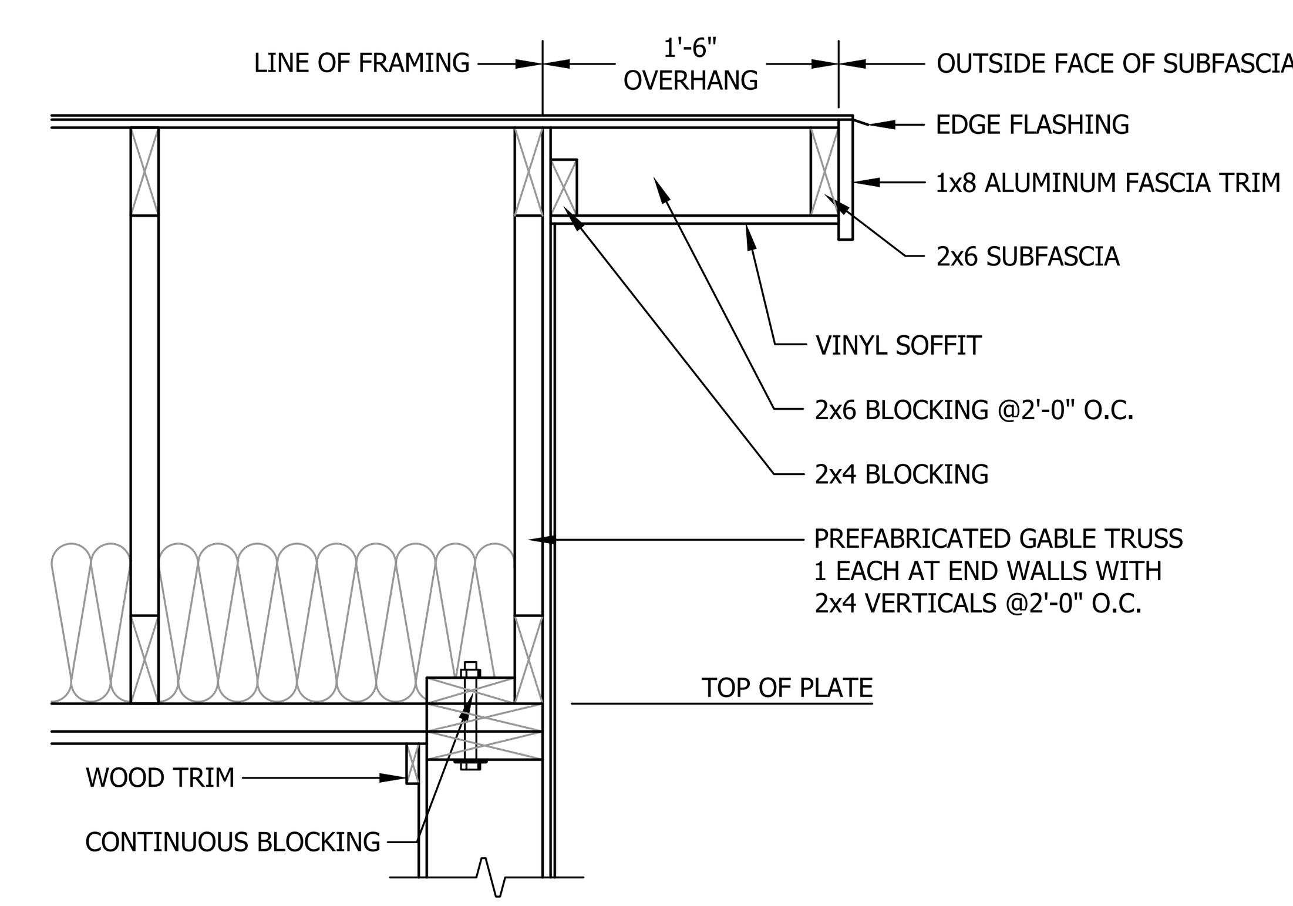

TYPICAL END GABLE TRUSS DETAIL

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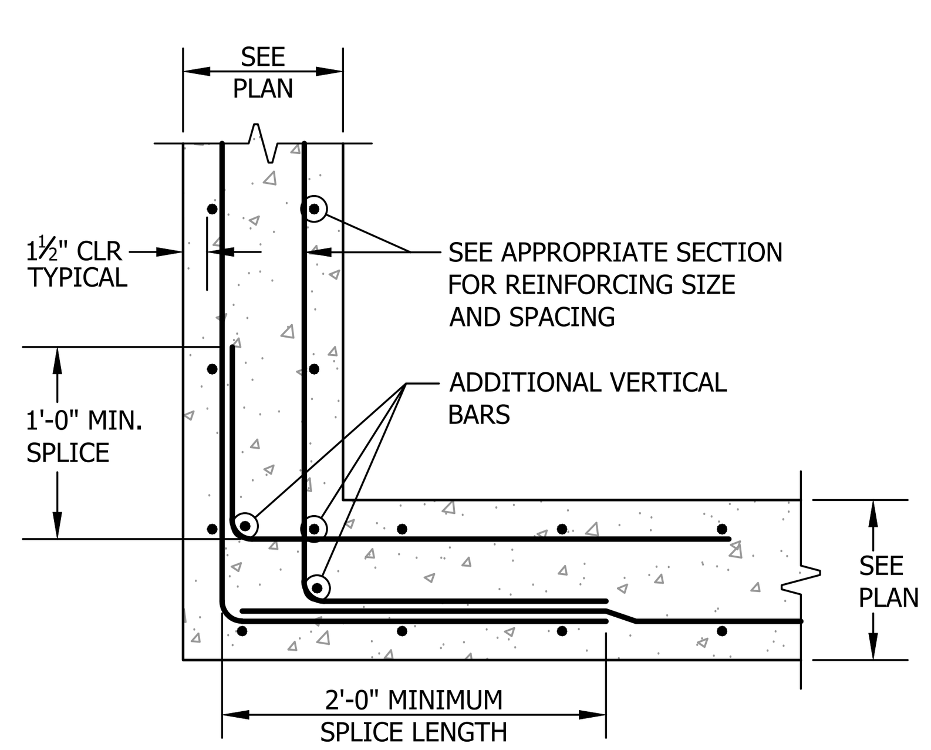
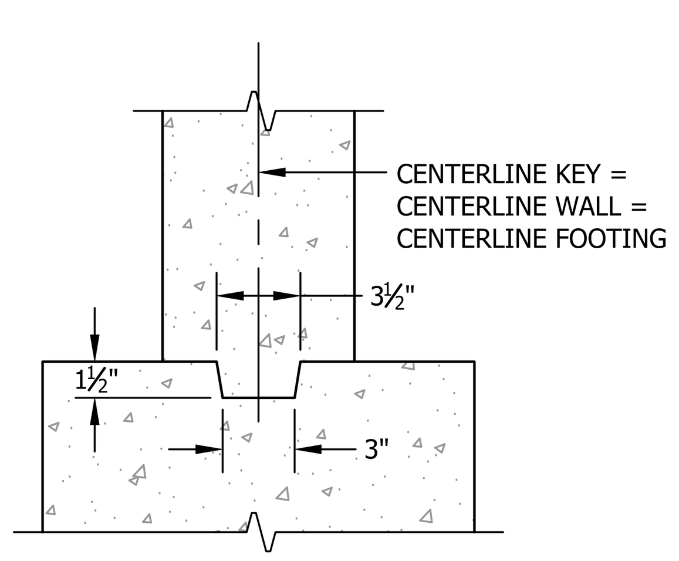


TYPICAL FOUNDATION WALL CORNER REINFORCING

NOT TO SCALE



FORMED KEY DETAIL

NOT TO SCALE

BUILDING STRUCTURAL NOTES

1. BUILDING HAS BEEN DESIGNED FOR THE MINIMUM EARTHQUAKE LOADS AS SPECIFIED IN THE ASCE 7-95, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCUTURES.
   EARTHQUAKE DESIGN LOADS: CATEGORY IV
   Aa = 0.11, Av = 0.11
   SEISMIC PERF. CATEGORY D
   BEARING WALL SYSTEM: Cv = 0.24, R = 6.5, Cd = 4
2. EXTERIOR PLYWOOD TO BE NAILED TO STUDS WITH MINIMUM 8d NAILS @6" ON CENTER AT PANEL EDGES AND 12" ON CENTER AT INTERIOR OF PANEL. PROVIDE BLOCKING AT ALL PANEL EDGES AND FASTEN PLYWOOD TO BLOCKING AS DESCRIBED ABOVE.
3. PROVIDE SIMPSON STRAP TIE HOLD DOWNS, STHD8, AT EACH BUILDING CORNER, AND THE DOOR JAMB ADJACENT TO LONGER WALL SECTION (5 TOTAL). STRAP TIES TO BE POSITIONED WITH 1 1/2" CLEAR FROM EDGE OF CONCRETE FOUNDATION TO EDGE OF STRAP TIE. INSTALLATION PER MANUFACTURER RECOMMENDATIONS.

BUILDING NOTES

1. THE TYPICAL BUILDING WALL SECTION FROM THE OUTSIDE IN IS AS FOLLOWS:
   - VINLY SHAKE SIDING, "CERTAINTEED" NORTHWOOD SHINGLE, 7 INCH STRAIGHT EDGE, PERFECTION SHINGLE, OR EQUAL
   - 1 X 6 PVC CORNER AND DOOR TRIM
   - 5/8" ADVANTECH, INSTALLED PER MANUFACTURERS RECOMMENDATIONS, OR EQUAL.
   - 2 X 6 PRESSURE TREATED DOUBLE SILL PLATE BOLTED TO THE CONCRETE
   - 2 X 6 WALL STUDS, 8 FEET HIGH +/-
   - 2 X 6 DOUBLE TOP PLATE
   - SIMPSON H2.5 ANCHORS, TOP PLATE TO RAFTERS, OR EQUAL
   - 3-1/2 INCH CLOSED CELL SPRAY FOAM INSULATION
2. THE TYPICAL BUILDING INTERIOR WALL SECTION IS AS FOLLOWS:
   - 2 X 6 PRESSURE TREATED DOUBLE SILL PLATE BOLTED TO THE CONCRETE
   - 2 X 6 WALL STUDS, 9 FEET HIGH +/-
   - 2 X 6 DOUBLE TOP PLATE
   - 1" X 6" PVC TOE KICK BOARD AROUND INTERIOR WALLS OF BUILDING IN CONTACT WITH CONCRETE
   - 1/2 INCH MDO PLYWOOD
   - INTERIOR PVC TRIM AS NEEDED
3. THE TYPICAL BUILDING CEILING SECTION FROM THE INTERIOR IS AS FOLLOWS:
   - 1/2 INCH MDO PLYWOOD
   - 2" x 4" STRAPPING
   - ROOF TRUSS BOTTOM CHORD
   - 12 INCH THICK CELLULOSE INSULATION
4. THE TYPICAL BUILDING ROOF SECTION FROM THE OUTSIDE IS AS FOLLOWS:
   - STANDING SEAM METAL ROOFING, 24 GAUGE MINIMUM, COLOR BY OWNER
   - ICE AND WATER SHIELD OVER ENTIRE ROOF
   - 5/8 ADVENTECH ROOF SHEATHING, OR EQUAL
   - ROOF TRUSSES
   - RAFTER VENT, ENTIRE LENGTH OF RAFTER WHERE INSULATED
   - 12 INCHES CELLULOSE INSULATION
   - CONTINUOUS DRIP EDGE, EAVES AND RAKES
   - 2 X 6 SUBFASCIA AND BLOCKING
   - 1 X 8 PVC FASCIA TRIM
   - CONTINUOUS SOFFIT VENT
5. PROVIDE ADEQUATELY SIZED GABLE END VENTS TO ALLOW INSTALLATION OF INSULATION AND DEAD SPACE VENTING.

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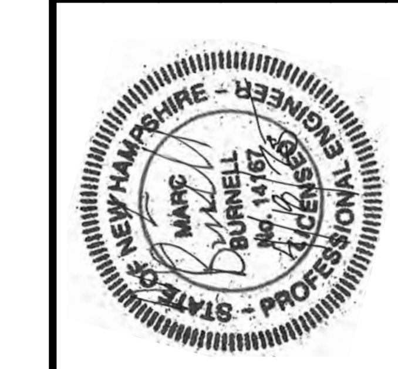

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CONTROL BUILDING STRUCTURAL PLAN

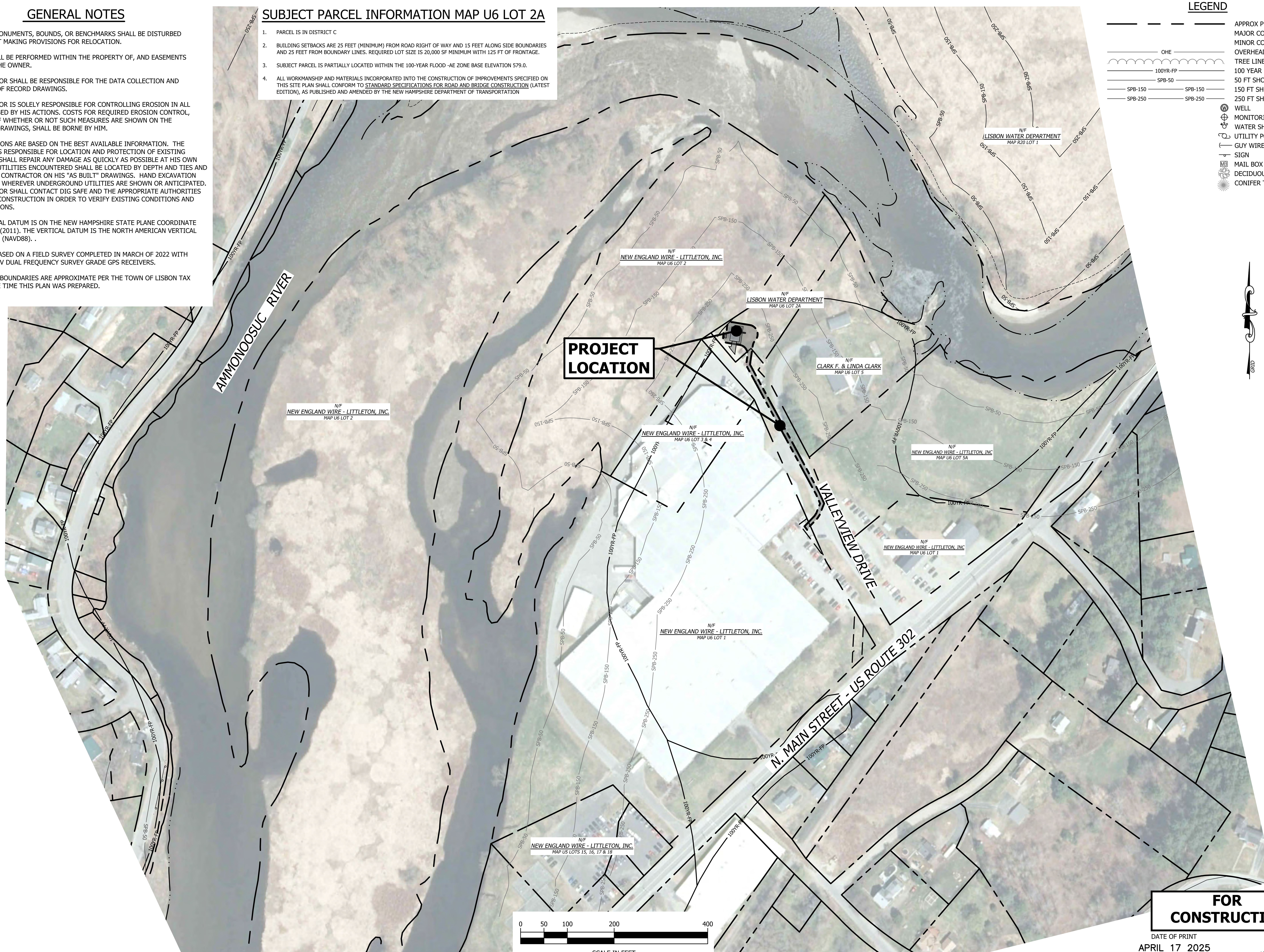
SHEET C3.4

GENERAL NOTES

1. NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
2. ALL WORK SHALL BE PERFORMED WITHIN THE PROPERTY OF, AND EASEMENTS SECURED BY, THE OWNER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY HIS ACTIONS. COSTS FOR REQUIRED EROSION CONTROL, REGARDLESS OF WHETHER OR NOT SUCH MEASURES ARE SHOWN ON THE ENGINEERING DRAWINGS, SHALL BE BORNE BY HIM.
5. UTILITY LOCATIONS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING UTILITIES AND SHALL REPAIR ANY DAMAGE AS QUICKLY AS POSSIBLE AT HIS OWN EXPENSE. ALL UTILITIES ENCOUNTERED SHALL BE LOCATED BY DEPTH AND TIES AND SHOWN BY THE CONTRACTOR ON HIS "AS BUILT" DRAWINGS. HAND EXCAVATION SHALL BE DONE WHEREVER UNDERGROUND UTILITIES ARE SHOWN OR ANTICIPATED. THE CONTRACTOR SHALL CONTACT DIG SAFE AND THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION IN ORDER TO VERIFY EXISTING CONDITIONS AND UTILITY LOCATIONS.
6. THE HORIZONTAL DATUM IS ON THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM NAD83 (2011). THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). .
7. THIS PLAN IS BASED ON A FIELD SURVEY COMPLETED IN MARCH OF 2022 WITH TOPCON HIPER V DUAL FREQUENCY SURVEY GRADE GPS RECEIVERS.
8. THE PROPERTY BOUNDARIES ARE APPROXIMATE PER THE TOWN OF LISBON TAX RECORDS A THE TIME THIS PLAN WAS PREPARED.

SUBJECT PARCEL INFORMATION MAP U6 LOT 2A

1. PARCEL IS IN DISTRICT C
2. BUILDING SETBACKS ARE 25 FEET (MINIMUM) FROM ROAD RIGHT OF WAY AND 15 FEET ALONG SIDE BOUNDARIES AND 25 FEET FROM BOUNDARY LINES. REQUIRED LOT SIZE IS 20,000 SF MINIMUM WITH 125 FT OF FRONTAGE.
3. SUBJECT PARCEL IS PARTIALLY LOCATED WITHIN THE 100-YEAR FLOOD -AE ZONE BASE ELEVATION 579.0.
4. ALL WORKMANSHIP AND MATERIALS INCORPORATED INTO THE CONSTRUCTION OF IMPROVEMENTS SPECIFIED ON THIS SITE PLAN SHALL CONFORM TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AS PUBLISHED AND AMENDED BY THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION



LEGEND

- APPROX PROPERTY LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- OVERHEAD UTILITY LINE
- TREE LINE
- 100 YEAR FLOOD PLAIN
- 50 FT SHORELAND BUFFER
- 150 FT SHORELAND BUFFER
- 250 FT SHORELAND BUFFER
- WELL
- MONITORING WELL
- WATER SHUTOFF
- UTILITY POLE
- GUY WIRE
- SIGN
- MAIL BOX
- DECIDUOUS TREE
- CONIFER TREE

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OVERVIEW, ABUTTER MAP/LOT INFORMATION, GENERAL NOTES & LEGEND

SHEET C4.1

0 15 30 60 120

SCALE IN FEET

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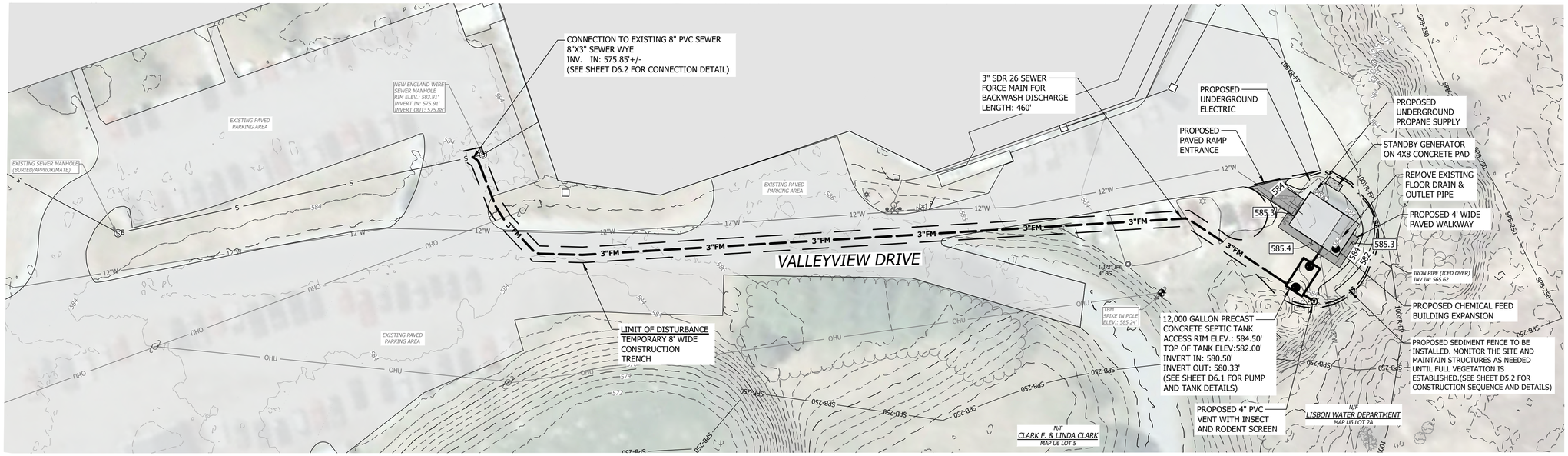
EXISTING CONDITIONS PLAN

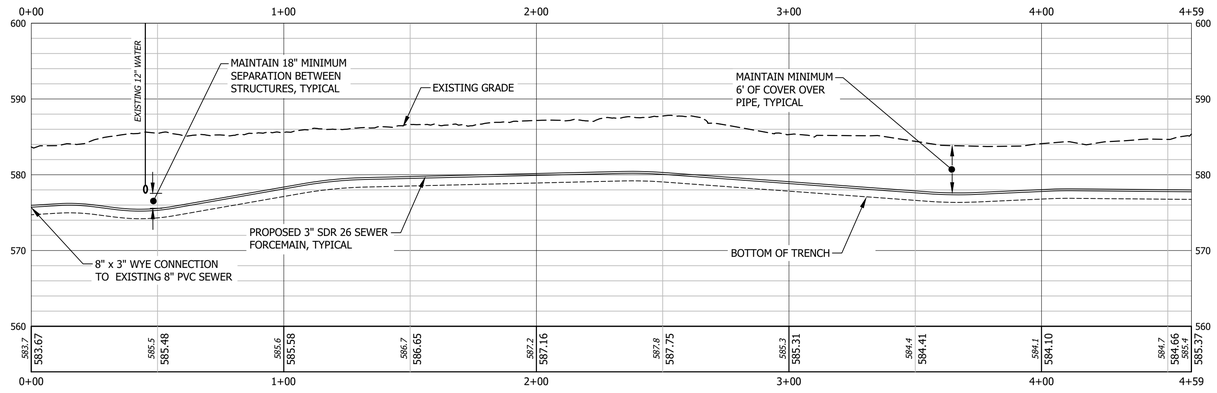
SHEET C4.2



SEWER FORCE MAIN SITE PLAN
STA 0+00 TO STA 4+59.36

0 15 30 60 120

SCALE IN FEET



SEWER FORCE MAIN PROFILE
STA 5+50 TO STA 11+96.35

0 15H 30H 60H 120H

0 5V 10V 20V 40V

SCALE IN FEET

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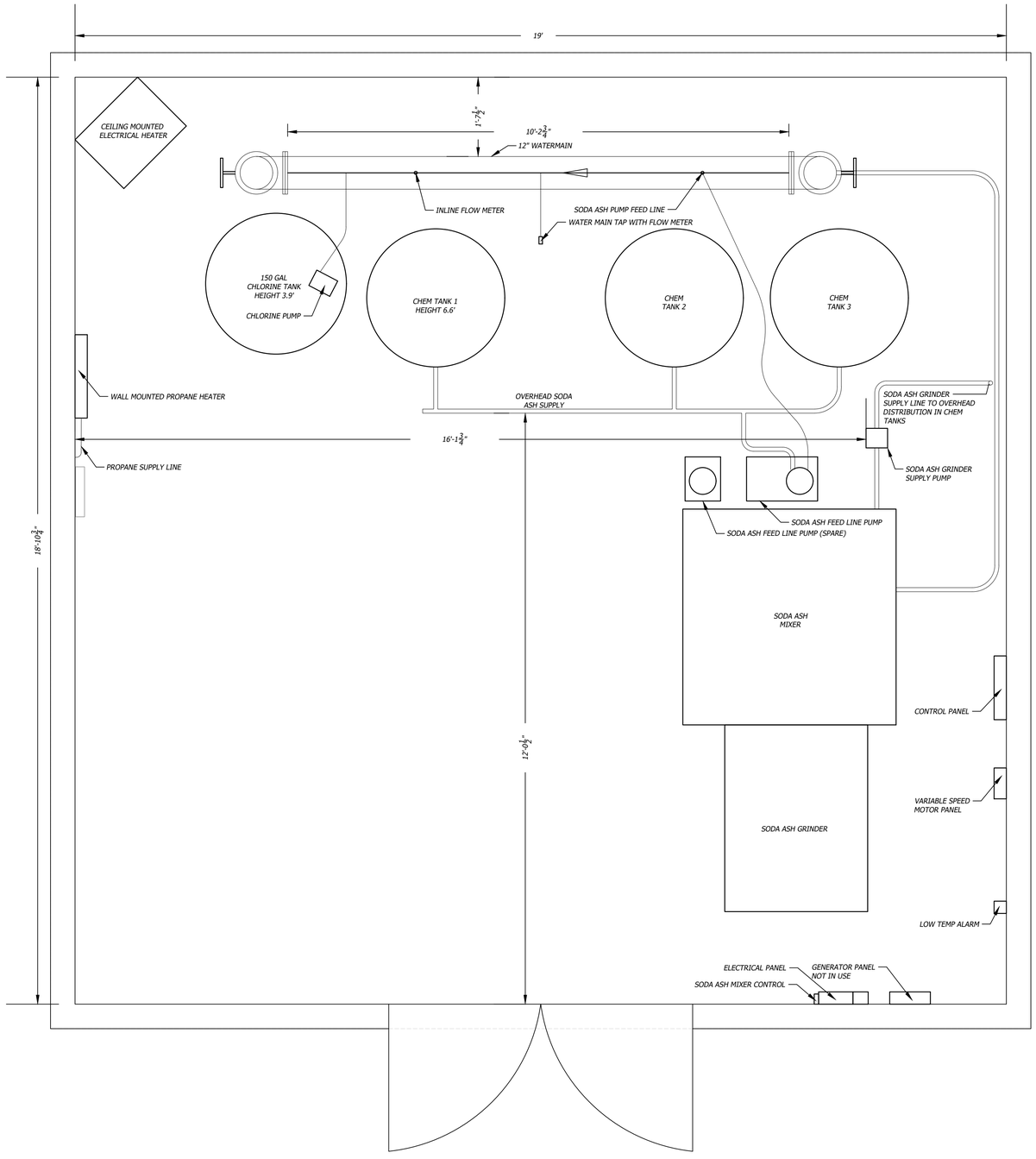
PLAN & PROFILE
SEWER FORCE MAIN STA 5+50 TO STA 11+96.35

SHEET C4.3



EXISTING CHEMICAL FEED BUILDING LAYOUT

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

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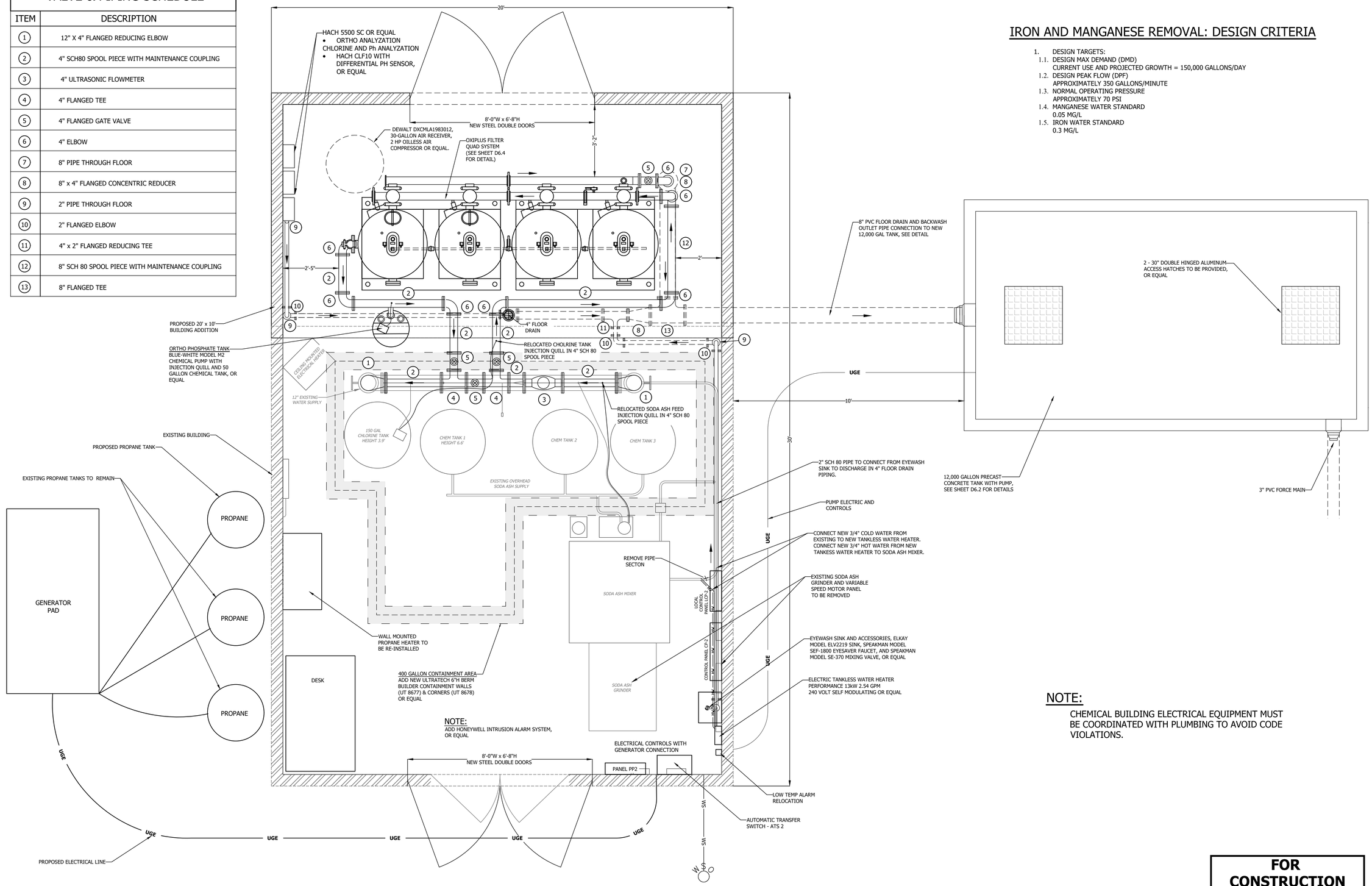
EXISTING CHEMICAL FEED BUILDING LAYOUT PLAN

SHEET C5.1

VALVE & PIPING SCHEDULE

ITEM	DESCRIPTION
1	12" X 4" FLANGED REDUCING ELBOW
2	4" SCH80 SPOOL PIECE WITH MAINTENANCE COUPLING
3	4" ULTRASONIC FLOWMETER
4	4" FLANGED TEE
5	4" FLANGED GATE VALVE
6	4" ELBOW
7	8" PIPE THROUGH FLOOR
8	8" x 4" FLANGED CONCENTRIC REDUCER
9	2" PIPE THROUGH FLOOR
10	2" FLANGED ELBOW
11	4" x 2" FLANGED REDUCING TEE
12	8" SCH 80 SPOOL PIECE WITH MAINTENANCE COUPLING
13	8" FLANGED TEE



PROPOSED CHEMICAL FEED BUILDING LAYOUT

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

IRON AND MANGANESE REMOVAL: DESIGN CRITERIA

1. DESIGN TARGETS:
   - 1.1. DESIGN MAX DEMAND (DMD)
     CURRENT USE AND PROJECTED GROWTH = 150,000 GALLONS/DAY
   - 1.2. DESIGN PEAK FLOW (DPF)
     APPROXIMATELY 350 GALLONS/MINUTE
   - 1.3. NORMAL OPERATING PRESSURE
     APPROXIMATELY 70 PSI
   - 1.4. MANGANESE WATER STANDARD
     0.05 MG/L
   - 1.5. IRON WATER STANDARD
     0.3 MG/L

NOTE:

CHEMICAL BUILDING ELECTRICAL EQUIPMENT MUST BE COORDINATED WITH PLUMBING TO AVOID CODE VIOLATIONS.

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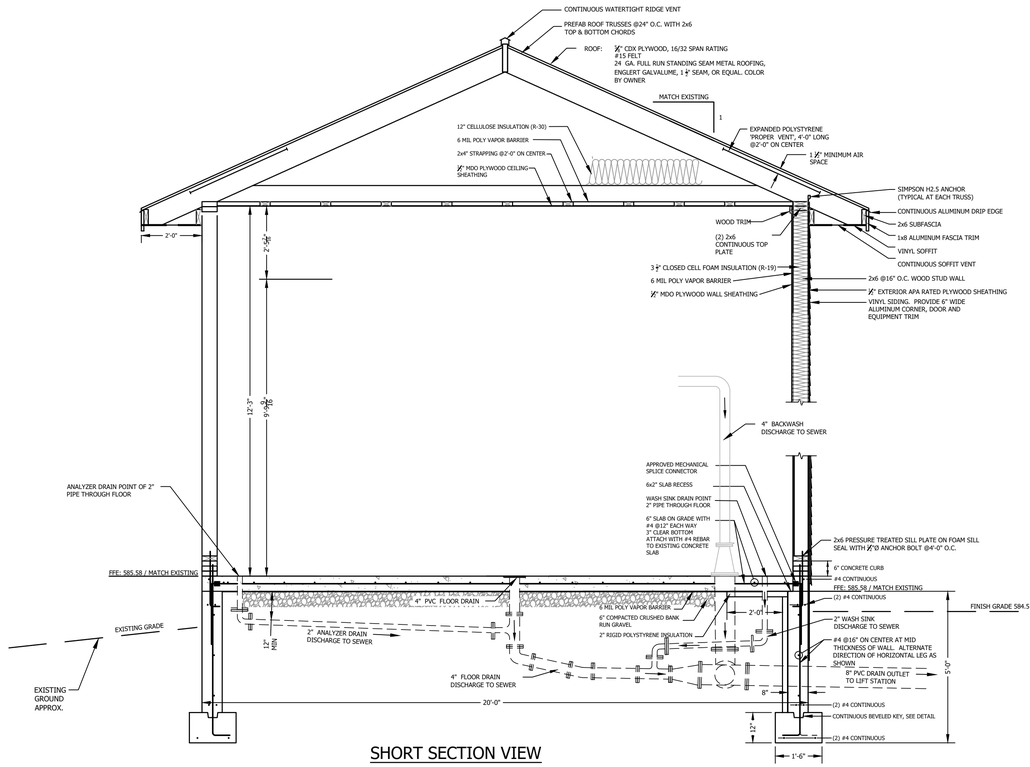
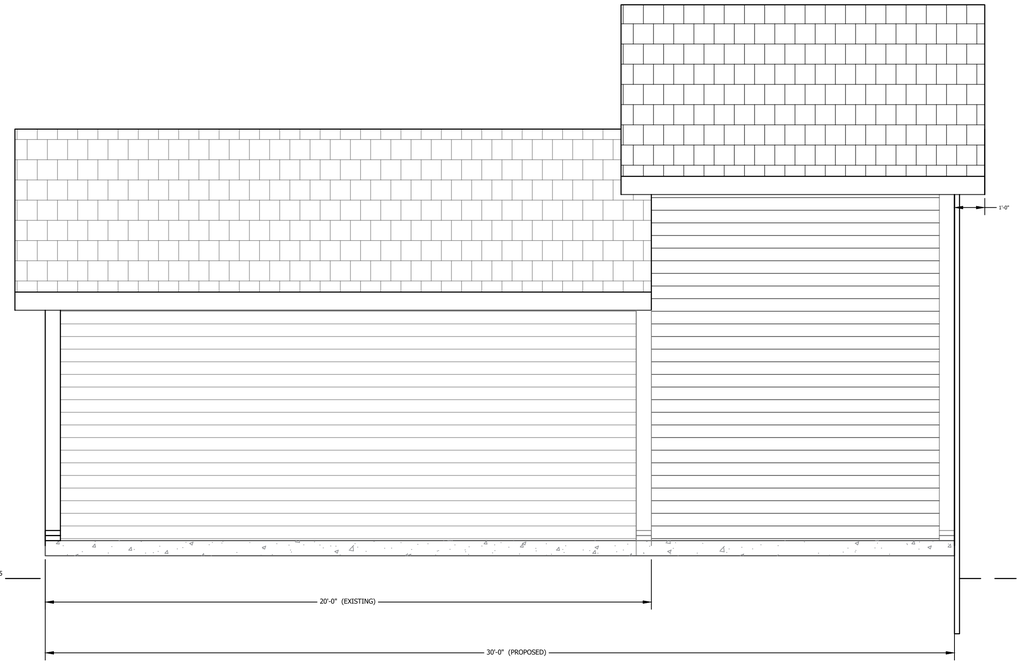
PROPOSED CHEMICAL FEED BUILDING LAYOUT PLAN

SHEET C5.2



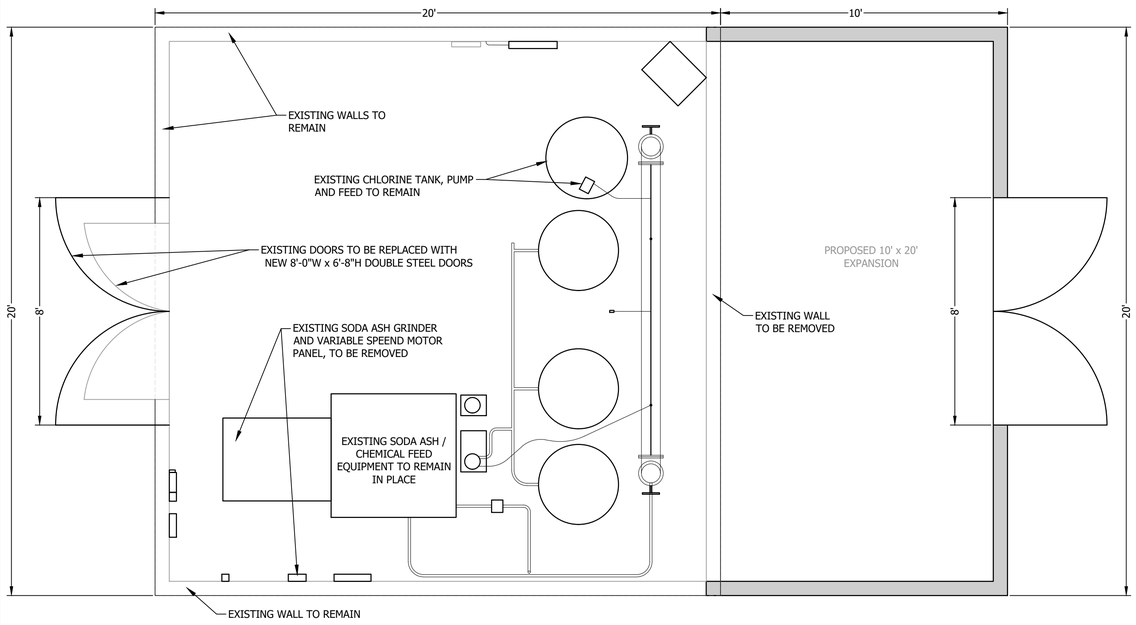
SHORT SECTION VIEW



LONG SECTION VIEW

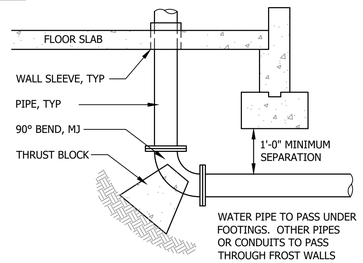
PROPOSED BUILDING SECTION VIEW

SCALE: 1" = 30'



CHEMICAL FEED BUILDING - DEMOLITION PLAN

NOT TO SCALE



FLOOR PIPE PENETRATION DETAIL

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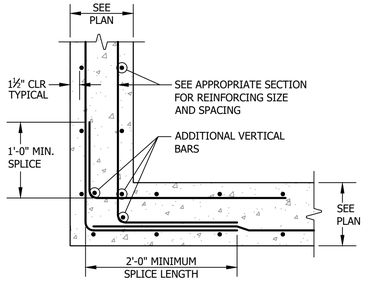
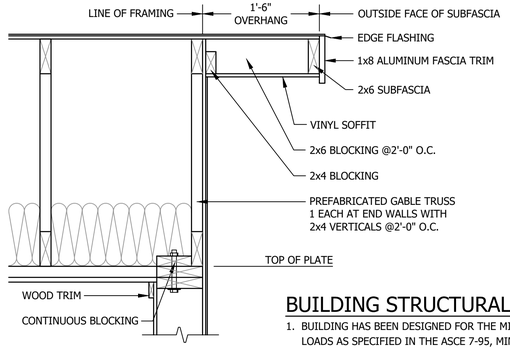


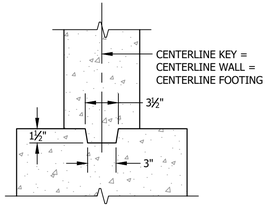
TYPICAL FOUNDATION WALL CORNER REINFORCING

NOT TO SCALE



TYPICAL END GABLE TRUSS DETAIL

NOT TO SCALE



FORMED KEY DETAIL

NOT TO SCALE

BUILDING STRUCTURAL NOTES

1. BUILDING HAS BEEN DESIGNED FOR THE MINIMUM EARTHQUAKE LOADS AS SPECIFIED IN THE ASCE 7-95, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCUTURES.
   EARTHQUAKE DESIGN LOADS:
   CATEGORY IV
   Aa = 0.11, Av = 0.11
   SEISMIC PERF. CATEGORY D
   BEARING WALL SYSTEM: Cv = 0.24, R = 6.5, Cd = 4
2. EXTERIOR PLYWOOD TO BE NAILED TO STUDS WITH MINIMUM 8d NAILS @6" ON CENTER AT PANEL EDGES AND 12" ON CENTER AT INTERIOR OF PANEL. PROVIDE BLOCKING AT ALL PANEL EDGES AND FASTEN PLYWOOD TO BLOCKING AS DESCRIBED ABOVE.
3. PROVIDE SIMPSON STRAP TIE HOLD DOWNS, STHD8, AT EACH BUILDING CORNER, AND THE DOOR JAMB ADJACENT TO LONGER WALL SECTION (5 TOTAL). STRAP TIES TO BE POSITIONED WITH 1 ½" CLEAR FROM EDGE OF CONCRETE FOUNDATION TO EDGE OF STRAP TIE. INSTALLATION PER MANUFACTURER RECOMMENDATIONS.

FOR CONSTRUCTION

DATE OF PRINT
APRIL 17 2025
HORIZONS ENGINEERING

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PROJECT #: 21215
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NEW HAMPSHIRE - STATE OF - PROFESSIONAL ENGINEER - MARK L. BURNELL NO. 14151

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CONTRACT #1 WATER SYSTEM IMPROVEMENTS
USDA WEP, ARPA 1361010, DW SRF 1361010, DWGT-82
CONTROL BUILDING, WELLSITE,
CHEMICAL BUILDING ADDITION & MANGANESE TREATMENT
BISHOP ROAD & VALLEYVIEW DRIVE, LISBON, NEW HAMPSHIRE

PROPOSED BUILDING SECTION & DEMOLITION PLAN

SHEET C5.3

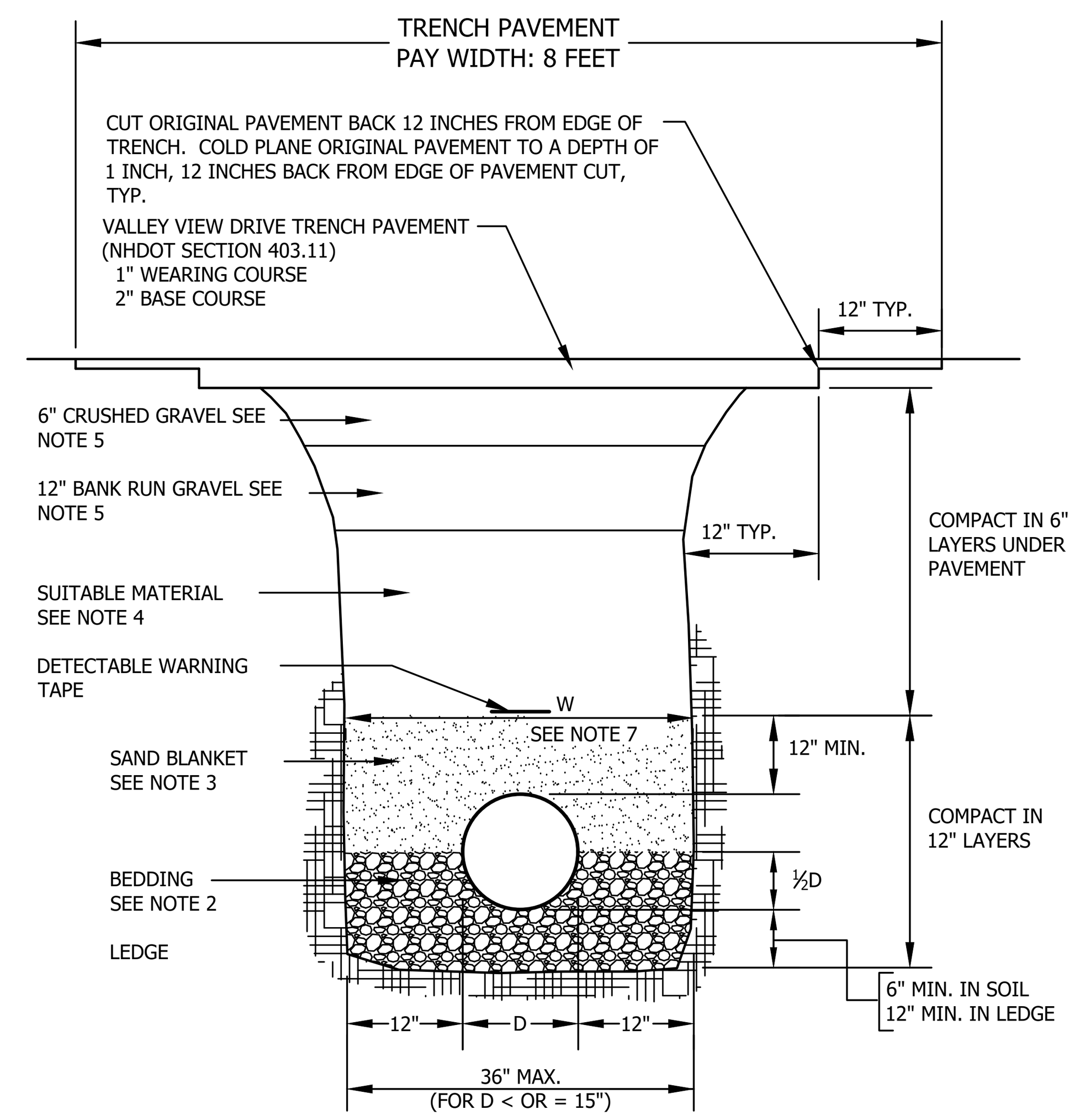
STANDARD TRENCH NOTES - WATER

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE SHALL BE REPLACED WITH BEDDING MATERIAL. SEE ALSO NOTE 4.
2. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90-100% PASSING	¾ INCH SCREEN
20-55% PASSING	⅜ INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

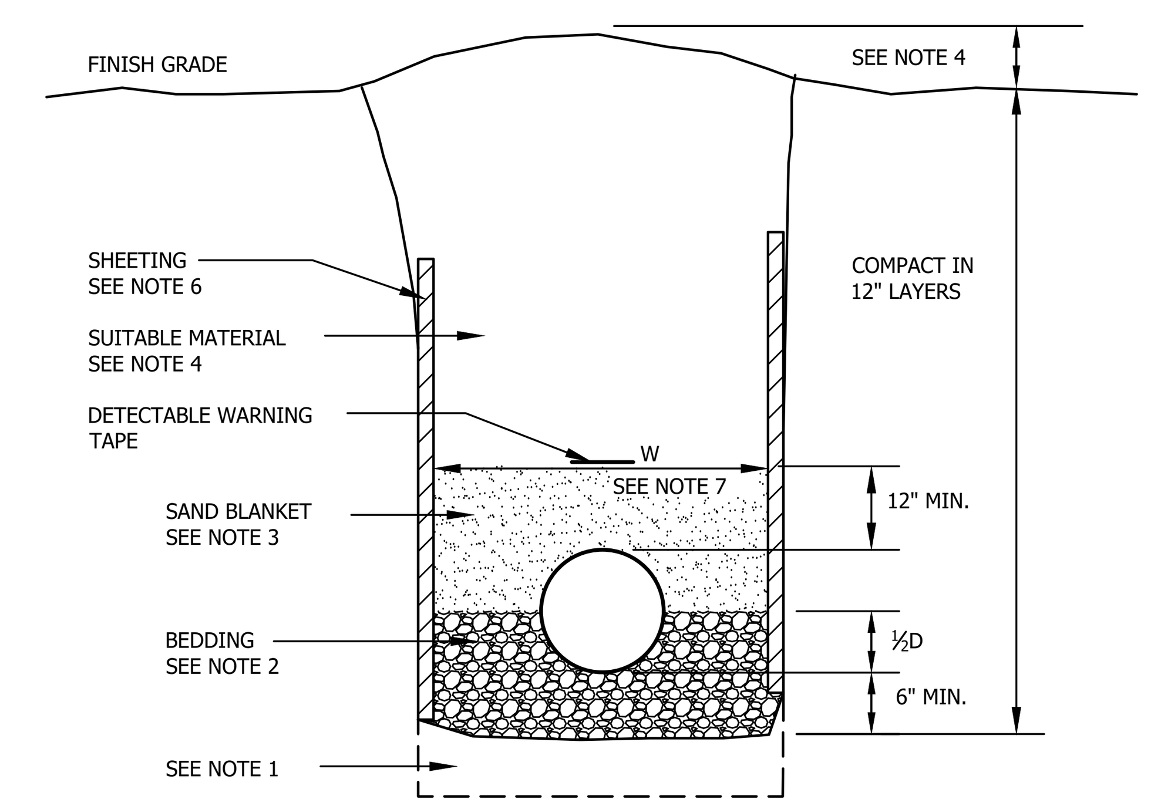
3. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A ½ INCH SIEVE AND NOT MORE THAN 15% PASSES A #200 SIEVE.
4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS, AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED FROM THE TRENCH DURING THE COURSE OF CONSTRUCTION, AFTER EXCLUDING DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL NOT APPROVED BY THE ENGINEER.

   TRENCH BACKFILL IN CROSS-COUNTRY LOCATIONS SHALL BE SUITABLE MATERIAL AS DESCRIBED ABOVE, EXCEPT THAT TOP SOIL, LOAM, MUCK, OR PEAT MAY BE USED PROVIDED THAT THE COMPLETED CONSTRUCTION WILL BE STABLE AND ACCESS TO THE PIPE FOR MAINTENANCE AND RECONSTRUCTION IS PRESERVED. BACKFILL SHALL BE MOUNDED TO A HEIGHT OF SIX INCHES ABOVE THE ORIGINAL GROUND SURFACE
5. BASE COURSE FOR TRENCH REPAIR SHALL MEET THE REQUIREMENTS OF SECTION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
6. SHEETING: ALL TRENCH SUPPORTS SHALL CONFORM TO OSHA STANDARDS. CONTRACTOR IS RESPONSIBLE FOR OSHA COMPLIANCE AND WORKER SAFETY THROUGHOUT CONSTRUCTION.
7. TRENCH DIMENSIONS: W = MAXIMUM ALLOWABLE TRENCH WIDTH MEASURED 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER (D) OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS THE PIPE OUTSIDE DIAMETER. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE. THE MAXIMUM ALLOWABLE TRENCH PAVEMENT PAYMENT WIDTH SHALL BE 8 FEET CENTERED OVER PIPE.
8. WATER/SEWER SEPARATION: WATER MAINS SHALL BE SEPARATED FROM SANITARY SEWER BY A MINIMUM OF 10 FEET HORIZONTALLY AND A MINIMUM OF 18 INCHES VERTICALLY, WITH THE WATER MAIN ABOVE THE SEWER.
9. PIPE COVER: COVER OVER WATER SHALL BE 6 FEET MINIMUM IN ALL LOCATIONS.



NOTE:
MINIMUM BEDDING DEPTH AND MAXIMUM PAYMENT LIMIT FOR LEDGE EXCAVATION = ¼D (12" MINIMUM)

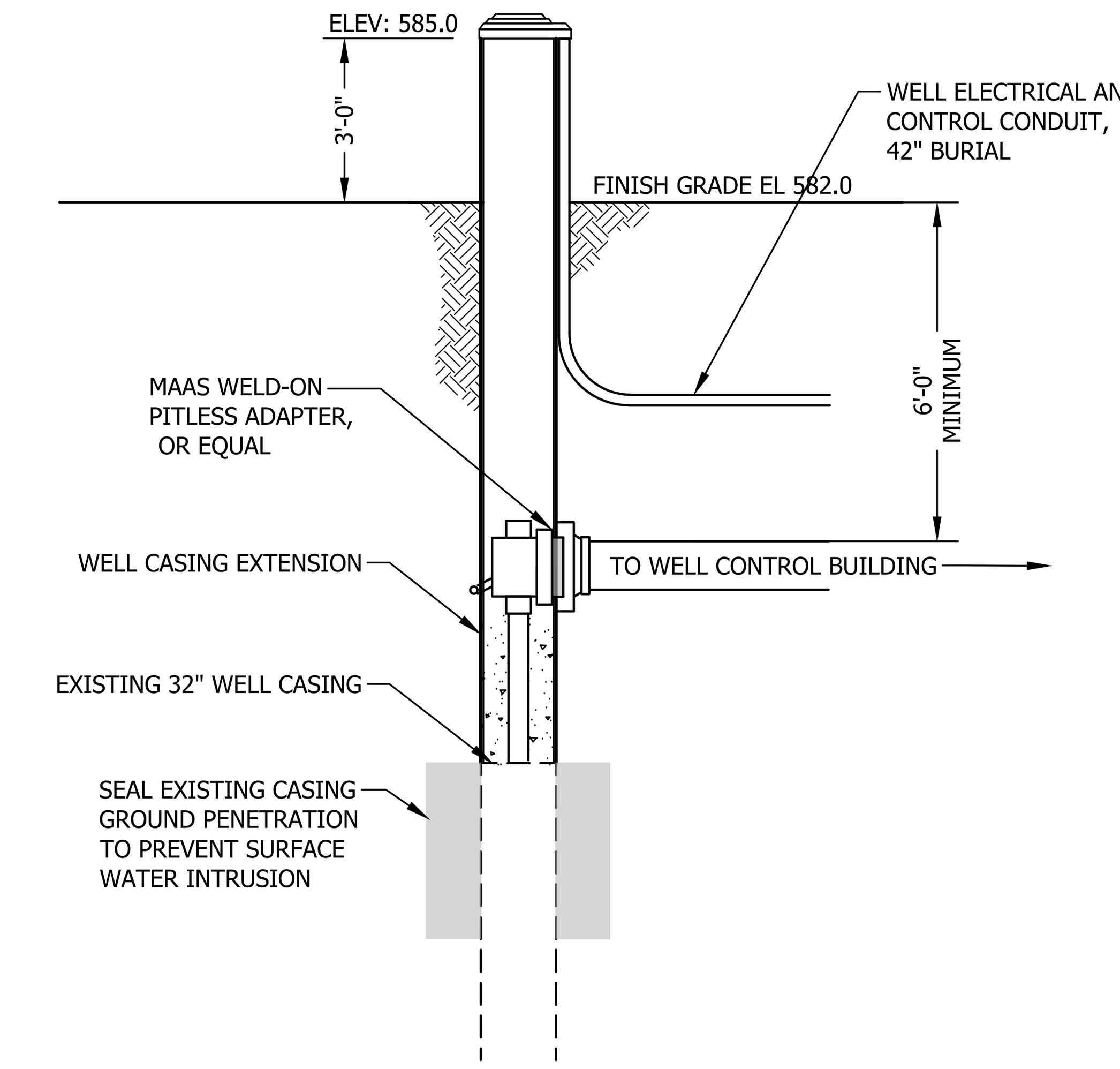
LEDGE/SUB PAVEMENT CONSTRUCTION



EARTH CONSTRUCTION
WITH OR WITHOUT SHEETING

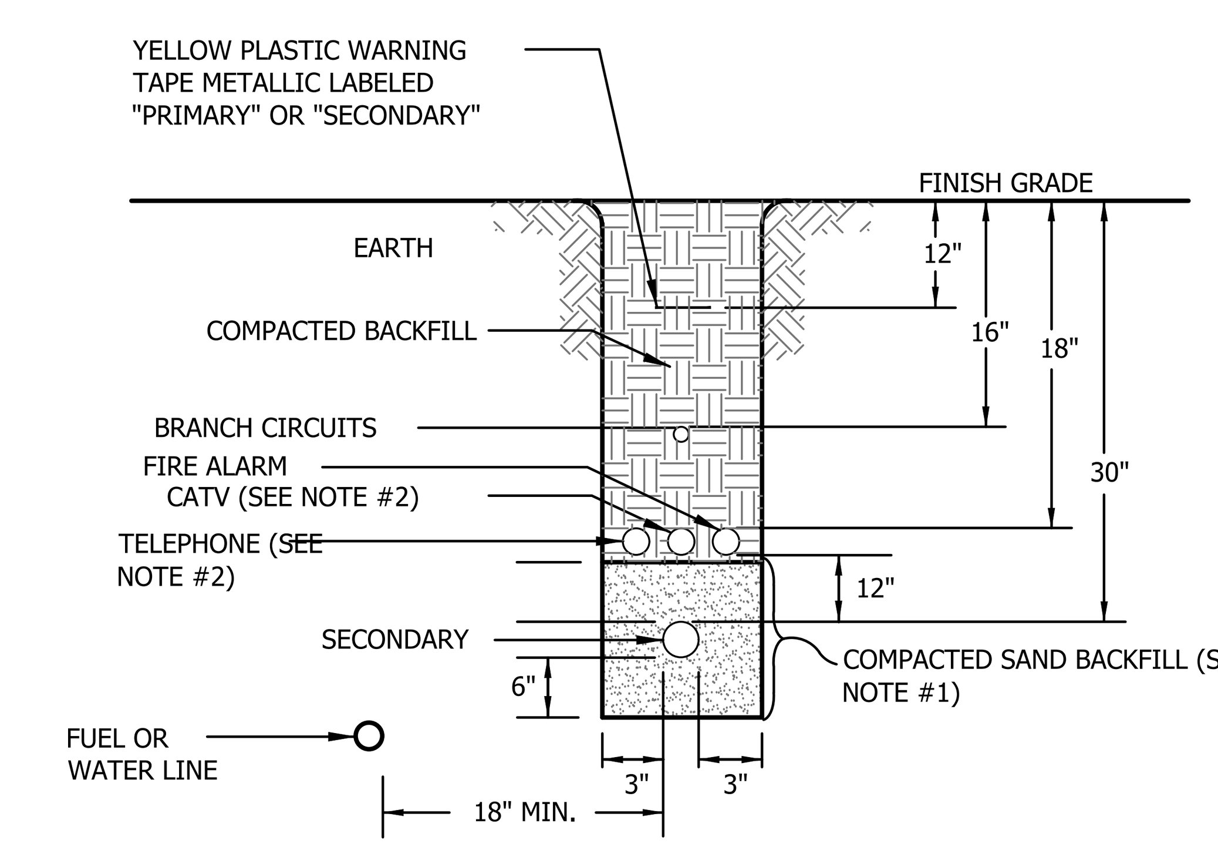
STANDARD TRENCH SECTIONS

NOT TO SCALE



WELL CASING EXTENSION DETAIL

NO SCALE



TYPICAL CONDUIT TRENCH DETAIL SECTION

NO SCALE

NOTES TYPICAL CONDUIT TRENCH:

1. SELECT SAND BACKFILL SHALL CONSIST OF FINE GRANULAR MATERIAL OF WHICH 100% SHALL PASS THROUGH A 1/4" SIEVE. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 6 INCH LAYERS.
2. TELEPHONE, CATV AND FIRE ALARM CONDUITS MAY RUN IN THE SAME TRENCH AS ELECTRIC SERVICE CONDUITS AND/OR BRANCH CIRCUIT CONDUITS PROVIDING A MINIMUM OF 12 INCH HORIZONTAL SEPARATION IS MAINTAINED. IF RUN IN THE SAME TRENCH AS PRIMARY CONDUITS A MINIMUM OF 12 INCHES BOTH HORIZONTAL AND VERTICAL SEPARATION SHALL BE MAINTAINED. SEE NOTE #1 ABOVE.
3. ALL CONDUIT BENDS OF 45 DEGREE OR MORE SHALL BE GALVANIZED RIGID STEEL. THE FIRST 10 FOOT SECTION OF CONDUIT BOTH HORIZONTAL AND VERTICAL AT UTILITY POLES, TRANSFORMER PADS AND AT BUILDING CONDUIT ENTRANCES, SHALL BE GALVANIZED RIGID STEEL. PROVIDE 3/8" NYLON PULL ROPE IN ALL EMPTY CONDUITS.
4. ALL NONMETALLIC CONDUIT AND FITTINGS SHALL BE ELECTRICAL GRADE, SCHEDULE 80 PVC AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEMA TC2-1990 AND BE UL LISTED. ONLY GRAY COLORED CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT HAVING THE PROPER NEMA OR UL MARKINGS WILL NOT BE ACCEPTED. ALL STEEL CONDUITS SHALL CONFORM TO ASTM A120 AND BE RIGID GALVANIZED STEEL. ALL PVC CONDUITS MUST BE CEMENTED. STEEL FITTINGS SHALL BE SEALED WITH COMPOUND.
5. ALL CONDUIT SYSTEMS, SHOWN ON THIS DETAIL, MAY NOT BE PRESENT ON THIS PROJECT. THIS IS A TYPICAL CONDUIT TRENCH DETAIL, EACH INDIVIDUAL PROJECT MAY HAVE MORE OR LESS CONDUIT SYSTEMS.

- BLOCKS MUST BE POURED AGAINST UNDISTURBED SOIL
- THE PIPE JOINT AND BOLTS MUST BE ACCESSIBLE.
- CONCRETE SHOULD BE CURED FOR AT LEAST 5 DAYS AND SHOULD HAVE A COMPRESSION STRENGTH OF 3,000 LBS. AT 28 DAYS.
- BLOCKS MUST BE POSITIONED TO COUNTERACT THE DIRECTION OF THE RESULTANT THRUST FORCE.

RESTRAINED JOINTS MAY BE USED FOR RESISTING THRUST FORCES WHERE THERE IS A SHORTAGE OF SPACE OR WHERE THE SOIL BEHIND A FITTING WILL NOT PROVIDE ADEQUATE SUPPORT. THIS RESTRAINING METHOD INVOLVES PLACEMENT OF THESE SPECIAL JOINTS AT APPROPRIATE FITTINGS AND FOR A PREDETERMINED NUMBER OF PIPE LENGTHS ON EACH SIDE, (MINIMUM 15 FEET).

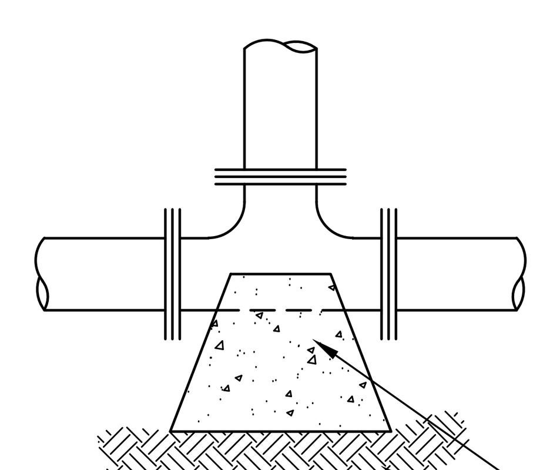
RESULTANT THRUST AT FITTINGS AT 100 PSI WATER PRESSURE					
NOMINAL PIPE DIA. (INCHES)	TOTAL THRUST (POUNDS)				
	DEAD END	90° BEND	45° BEND	22½° BEND	11¼° BEND
4	1,810	2,559	1,385	706	355
6	3,739	5,288	2,862	1,459	733
8	6,433	9,097	4,923	2,510	1,261
10	9,677	13,685	7,406	3,776	1,897
12	13,685	19,353	10,474	5,340	2,683
14	18,385	26,001	14,072	7,174	3,604
16	23,779	33,628	18,199	9,278	4,661
18	29,865	42,235	22,858	11,653	5,855
20	36,644	51,822	28,046	14,298	7,183
24	52,279	73,934	40,013	20,398	10,249

NOTE:
TO DETERMINE THRUST AT PRESSURES OTHER THAN 100 PSI, MULTIPLY THE THRUST OBTAINED IN THE TABLE BY THE RATIO OF THE PRESSURE TO 100. FOR EXAMPLE, THE THRUST ON A 12 INCH, 90° BEND AT 125 PSI IS:

$$\frac{19{,}353 \times 125}{100} = 24{,}191 \text{ POUNDS}$$

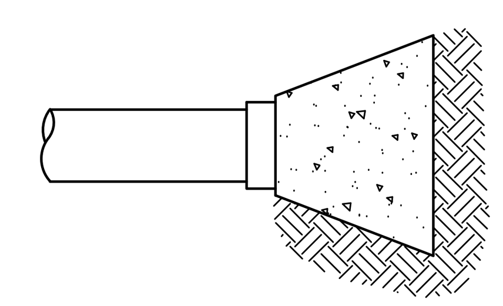
TO DETERMINE THE SIZE OF A CONCRETE THRUST BLOCK, DIVIDE THE TOTAL FORCE BY THE BEARING VALUE OF THE SOIL. THE QUOTIENT WILL BE THE SIZE OF THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET. APPROXIMATE VALUES FOR VARIOUS TYPES OF SOIL ARE LISTED BELOW.

SOIL	BEARING LOAD (LBS./SQ. FT.)
MUCK	0
SOFT CLAY	1,000
SILT	1,500
SANDY SILT	3,000
SAND	4,000
SANDY CLAY	6,000

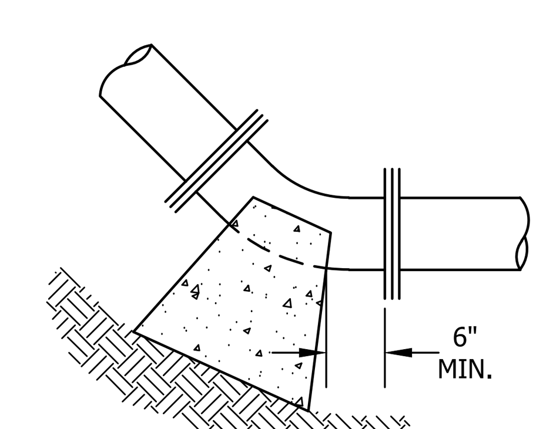


HORIZONTAL TEE

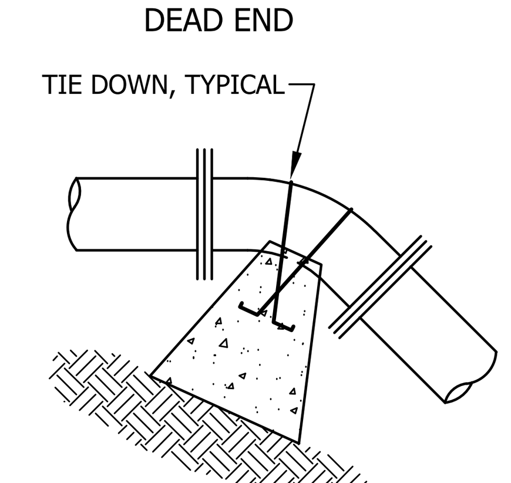
3000 LB. CONCRETE, TYPICAL
UNDISTURBED SOIL, TYPICAL



DEAD END



HORIZONTAL BEND



VERTICAL BEND

THRUST BLOCK NOTES & DETAILS

NOT TO SCALE

FOR CONSTRUCTION

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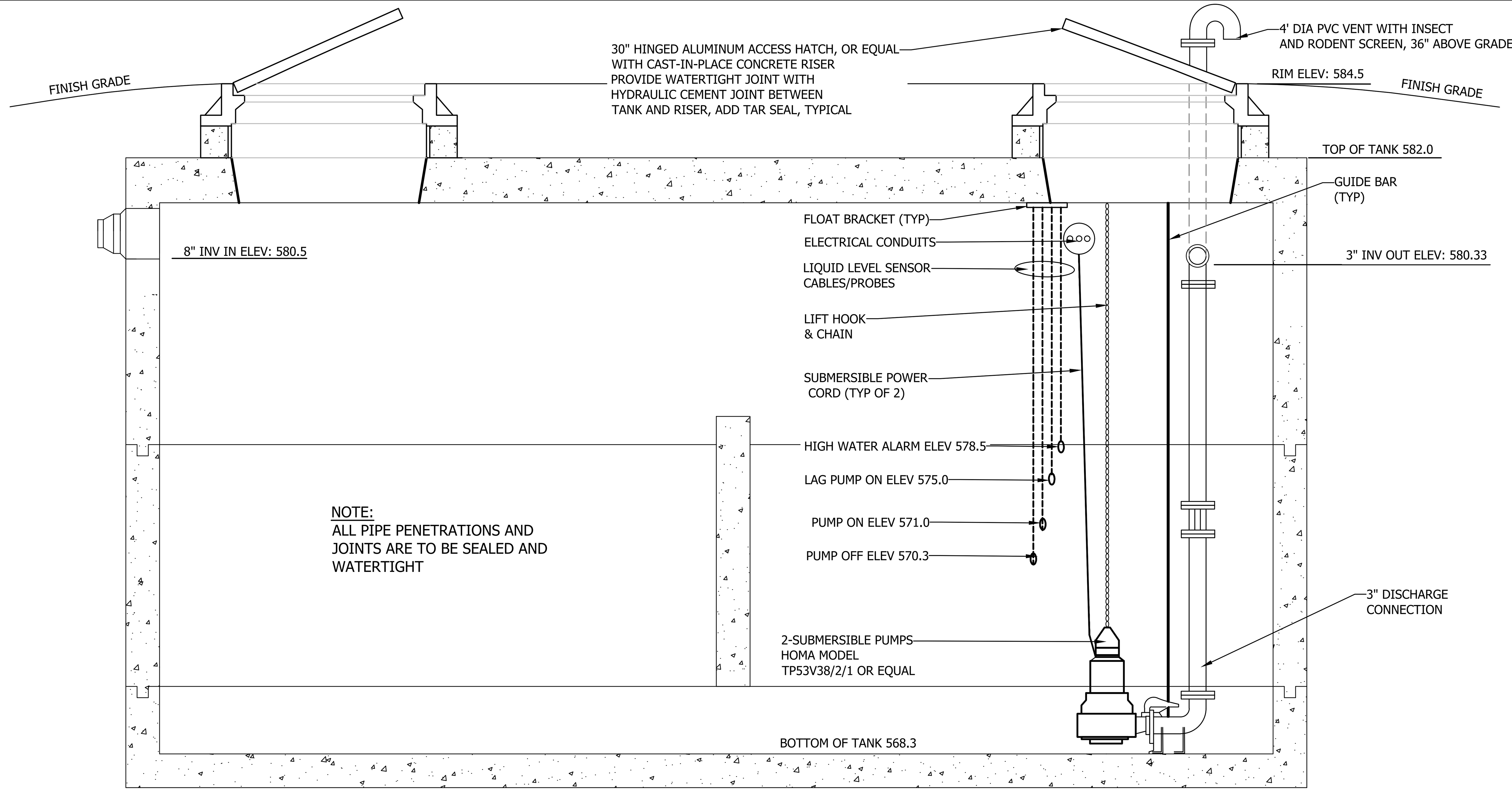
STANDARD WATER SYSTEM NOTES AND DETAILS

SHEET D6.1



MANGANESE LIFT STATION DETAIL

NOT TO SCALE

MANGANESE BACKWASH LIFT STATION BASIS OF DESIGN:

DESIGN FLOW: 4 MANGANESE FILTERS BACKWASH APPROXIMATELY ONCE A WEEK IN SUCCESSION AT 884 GALLONS EACH. TOTAL FLOW: 3,536 GALLONS/WEEK.

SINCE THIS LIFT STATION WILL SEE NOTHING OUTSIDE OF BACKWASH FROM THE MANGANESE FILTERS, THERE IS NO PEAKING FACTOR ESTABLISHED. THE LIFT STATION WILL HAVE A REDUNDANT PUMPING SYSTEM AS REQUIRED BY ENV-WQ 700. THE PUMPING SYSTEM WILL MAINTAIN A VELOCITY OF AT LEAST 2.5 FEET PER SECOND. A FLOWRATE OF 80 GPM WAS CHOSEN.

MINIMUM VELOCITY CHECK:
V= Q/A WHERE
Q=80GPM/(7.48GAL/CF*60SEC/MIN) = 0.18 CFS
A = 3.14*((3/12)^2)/4 = 0.049 SF
V = 0.18CFS/0.022SF = 3.7 FPS

ELEVATION HEAD: 12 FT
FRICTION HEAD OF 3 INCH PIPE AT 80 GPM: 9.9 FT
TOTAL DYNAMIC HEAD: 12+9.9 = 21.9 FT
PUMP DESIGN POINT: 21.9FT@80GPM

PUMP RUN TIME: 571-570.3 = 0.7 X 9 X 16 = 100.8
100.8 SF X 7.48 GAL/CF = 754 GAL
754GAL/80 = 9.4 MIN RUN TIME
8<9.4<10 ∴ OK

PUMP MODEL: HOMA TP53V38/2/1 OR EQUAL
POWER: 3-PHASE POWER

TANK VOLUME CRITERIA:
THE MANGANESE BACKWASH ACCOUNTS FOR 3,536 GALLONS APPROXIMATELY ONCE A WEEK. A 12,000 GALLON WET WELL IS PROPOSED. PUMP ON, PUMP OFF ELEVATIONS ARE SHOWN ON THIS SHEET. THE TANK SUPPLIED SHALL BE ABLE TO HANDLE APPROXIMATELY 3 FULL BACKWASH CYCLES.

BOTTOM OF TANK: 568.3'
PUMP OFF: 570.3'
PUMP ON: 571.0'
LAG PUMP ON: 575.0'
HIGH WATER ALARM: 578.5
8" INV. IN: 580.5
MINIMUM VOLUME BETWEEN PUMP OFF AND PUMP ON: VOLUME = 9.2 MIN X 80 GPM/4=184 GAL

STORAGE PROVIDED: (571-570.3) X 9 FT X 16 FT X 7.48 GAL/CF = 753 GAL
753 GAL>184 GAL ∴ OK

CONTROL PANELS:

SIMPLEX MUNICIPAL WASTEWATER PUMP CONTROL PANELS TO BE INSTALLED WITHIN THE CHEMICAL BUILDING.

CONTROL PANEL IS TO CONTROL 3-PHASE SUBMERSIBLE PUMPS IN A LEAD PUMP, LAG PUMP CONFIGURATION, ALTERNATING ON EACH PUMP START CYCLE ON A RISING WET WELL LEVEL, WITH THE LEAD PUMP OPERATING, THE LAG PUMP WILL COME ON UNTIL THE WET WELL LEVEL DROPS TO THE PUMP OFF LEVEL.

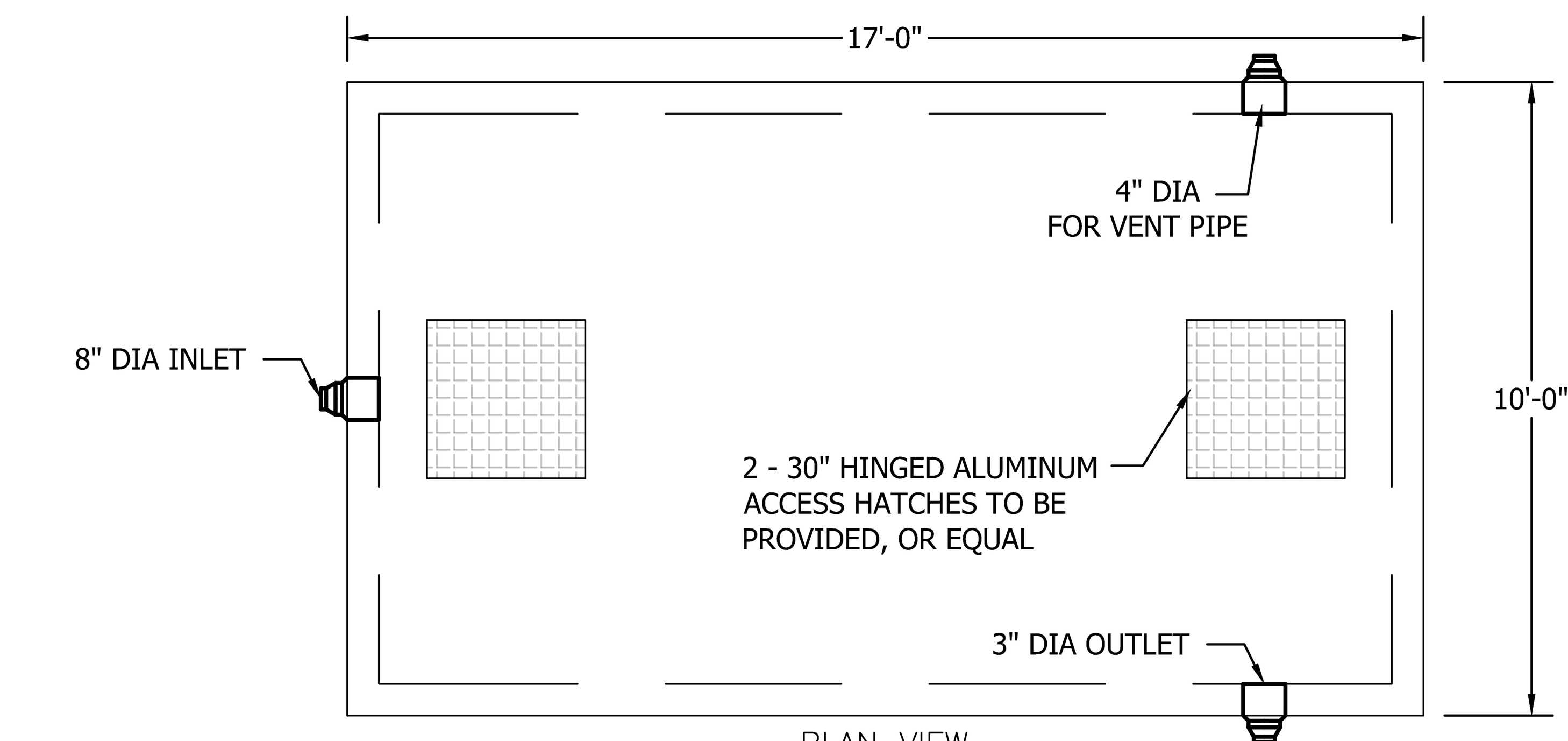
WET WELL LEVEL CONTROLS TO BE MECHANICALLY ACTIVATED FLOAT SWITCHES, KWIKSWITCH (PART #1055393) FLOAT SYSTEM, OR EQUAL.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, CUT SHEETS, CONTROL DIAGRAMS, AND PUMP CURVE FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

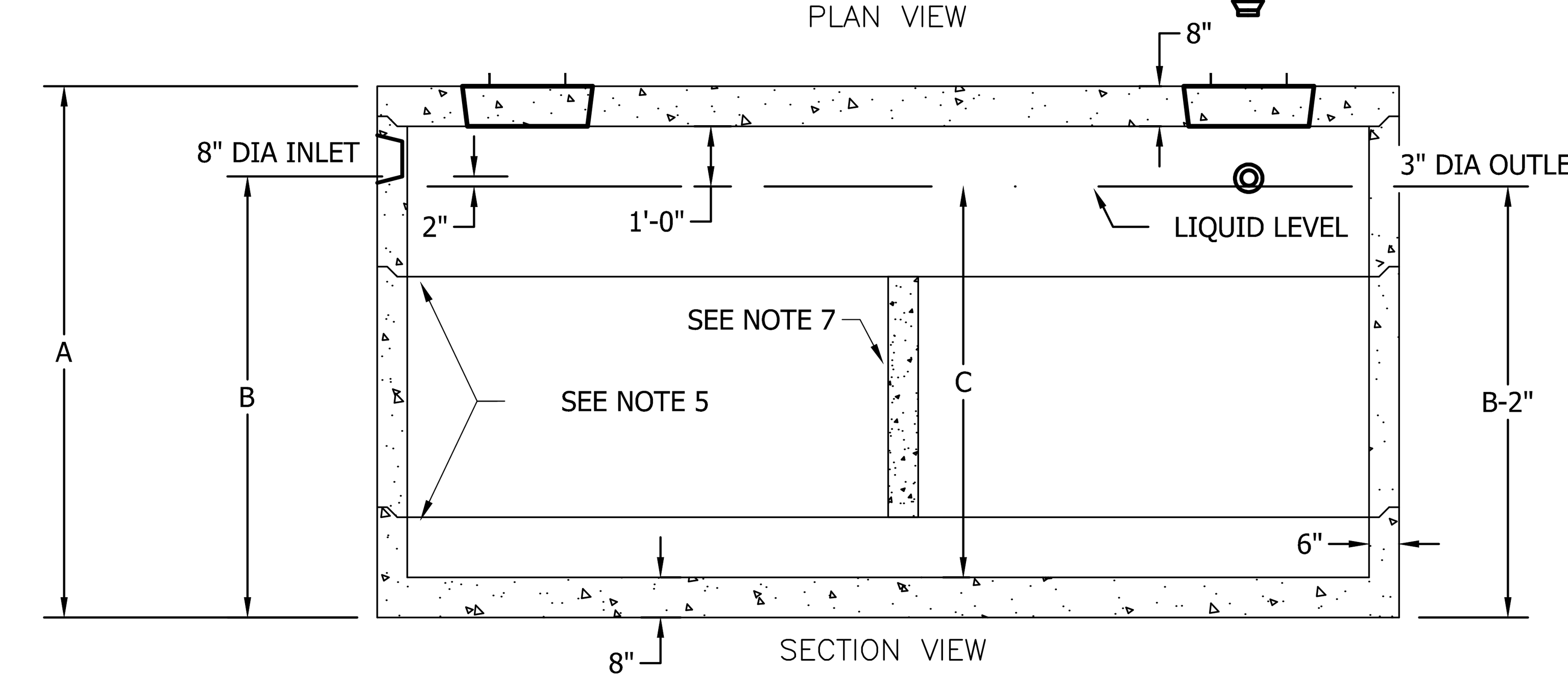
POWER:

3-PHASE POWER IS AVAILABLE

A PROPANE POWERED BACKUP GENERATOR SHALL BE CONSTRUCTED AS PART OF THIS PROJECT.



PLAN VIEW



SECTION VIEW

NOTES:
1. CONCRETE. 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS, FOR SEPTIC TANKS.
3. ALL REINFORCEMENT PER ASTM C1227.
4. DESIGNED FOR AASHTO HS-20 LOADING, COVER 1-5 FEET.
5. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN. INLET HEIGHT MAY INCREASE SLIGHTLY DUE TO THE BUTYL RESIN USED.
6. TEES AND BAFFLES SOLD SEPARATELY.
7. SPANNERS USED IN CENTER SECTIONS FOR TANKS GREATER THAN 7000 GALLONS.

ITEM SIZE	WEIGHT
8" TOP	16,312#
21" BOTTOM	20,517#
30" RISER	9,425#
30" RIS + SPAN	11,116#
34" RISER	10,682#
34" RIS + SPAN	12,600#
38" RISER	11,940#
38" RIS + SPAN	14,080#
42" RISER	13,195#
42" RIS + SPAN	15,562#
48" RISER	15,080#
48" RIS + SPAN	17,786#

GALLONS	A (HEIGHT)	B (INLET)	C (LIQUID)	TOTAL WEIGHT	RISER 1 SIZE	RISER 2 SIZE	RISER 3 SIZE	ITEM NO.
8,000	118"	100"	90"	67,810	42"	48" W/SPAN	0	10X17-80
8,500	124"	106"	96"	69,695	48"	48" W/SPAN	0	10X17-85
9,000	130"	112"	102"	72,932	30"	30" W/SPAN	42" W/SPAN	10X17-90
9,500	136"	118"	108"	75,156	30"	30" W/SPAN	48" W/SPAN	10X17-95
10,000	140"	122"	112"	76,640	30"	34" W/SPAN	48" W/SPAN	10X17-100
10,500	146"	128"	118"	78,635	34"	42" W/SPAN	42" W/SPAN	10X17-105
11,000	152"	134"	124"	80,859	34"	42" W/SPAN	48" W/SPAN	10X17-110
11,500	158"	140"	130"	83,083	34"	48" W/SPAN	48" W/SPAN	10X17-115
12,000	162"	144"	134"	84,341	38"	48" W/SPAN	48" W/SPAN	10X17-120

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12,000 GALLON SEPTIC TANK

NOT TO SCALE

DWG:

NPCA CERTIFIED PLANT

Specifications subject to change without notice

SEWER NOTES

1. GENERAL

CONSTRUCTION OF ALL COMPONENTS OF THE SANITARY SEWER SYSTEM SHALL CONFORM TO THE MOST CURRENT VERSION OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES ENV-WQ 700 AND TECHNICAL SPECIFICATIONS ENTITLED "TOWN OF LISBON CONTRACT #1 WATER SYSTEM IMPROVEMENTS, DATED OCTOBER 2024, LATEST REVISED APRIL 2025.

2. TYPES OF SEWERS

A. THERE SHALL BE NO CONNECTION BETWEEN SANITARY SEWERS AND STORM SEWERS.
B. RUNOFF FROM ROOFS, STREETS, AND OTHER AREAS AND GROUNDWATER FROM FOUNDATION DRAINS, SUMP PUMPS, OR OTHER SUBSURFACE DRAINS SHALL BE EXCLUDED FROM SANITARY SEWERS.

3. SEWER SIZE AND COVER

A. MINIMUM PIPE SIZE FOR GRAVITY SEWER MAINS SHALL BE 8 INCHES.
B. MINIMUM PIPE SIZE FOR GRAVITY SEWER SERVICES SHALL BE 4 INCHES.
C. MINIMUM PIPE SIZE FOR FORCE MAIN SEWER SERVICES SHALL BE 2 INCHES.
D. SANITARY SEWERS SHALL HAVE 6 FEET MINIMUM COVER IN ALL ROADWAY LOCATIONS AND 4 FEET MINIMUM COVER IN ALL CROSS-COUNTRY LOCATIONS.

4. PIPE AND FITTING MATERIALS:

A. DUCTILE IRON PIPE

DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION:
(1) AWWA C151 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL OR SAND LINED MOLDS, FOR WATER OR OTHER LIQUIDS;
(2) AWWA C150 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A 536 IRON CASTINGS; AND
(3) JOINTS SHALL BE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL-AND-SOCKET TYPE;

B. PVC (POLY VINYL CHLORIDE) PIPE

PVC PIPE AND FITTINGS SHALL BE APPROVED FOR SEWAGE SERVICE AND CONFORM TO THE FOLLOWING:
(1) PVC PIPE USED FOR GRAVITY SEWERS SHALL BE TYPE SDR 35 CONFORMING TO ASTM D3034;
(2) PVC PIPE USED FOR FORCE MAINS SHALL BE TYPE SDR 26 CONFORMING TO ASTM D2241 OR ASTM D1785;
(3) JOINTS SHALL BE PUSH-ON, BELL-AND-SPIGOT TYPE HAVING OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D3212.

5. BEDDING

PIPE BEDDING SHALL BE SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67. BEDDING SHALL EXTEND FROM THE SPRING LINE OF THE PIPE TO A MINIMUM DEPTH OF 6" BELOW THE BOTTOM OF THE PIPE OUTSIDE SURFACE.

100% PASSING	1 INCH SCREEN
90-100% PASSING	¾ INCH SCREEN
20-55% PASSING	⅜ INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

6. MANHOLES

A. PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
B. MANHOLES SHALL BE DESIGNED FOR H-20 LOADING.
C. HORIZONTAL JOINTS BETWEEN BARREL SECTIONS SHALL BE OF AN OVERLAPPING TYPE WHICH SHALL DEPEND UPON A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT FOR WATER TIGHTNESS.
D. PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:
(1) ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES;
(2) CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;
(3) ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND
(4) NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.

E. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.

7. PROTECTION OF WATER SUPPLIES

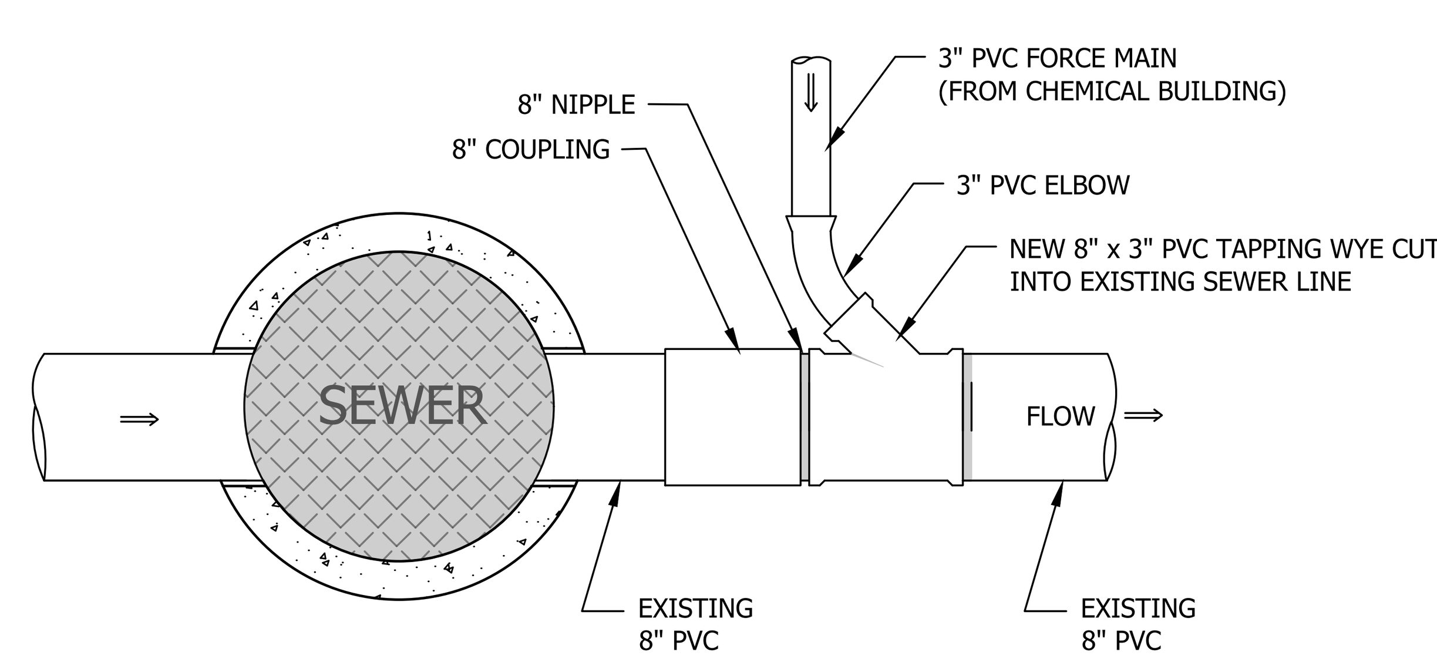
A. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.

B. NO SEWER SHALL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV-WS 300 FOR ANY PUBLIC WATER SUPPLY WELLS OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL.

C. SEWERS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.

D. A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (B) OR (C) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV-WQ 704.06.

E. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
(1) VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
(2) SEWER PIPE JOINTS SHALL BE LOCATED AT LEASE 6 FEET HORIZONTALLY FROM THE WATER MAIN.



SEWER WYE DETAIL

NOT TO SCALE

FOR CONSTRUCTION

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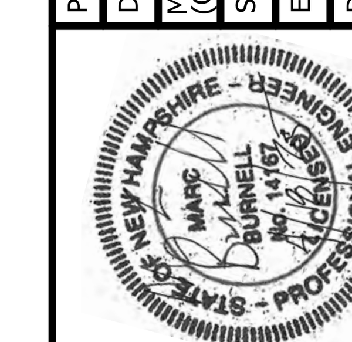

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USDA WEP, ARPA 1361010, DW SRF 1361010, DWGT-82
CONTROL BUILDING, WELLSITE, CHEMICAL BUILDING ADDITION & MANGANESE TREATMENT
BISHOP ROAD & VALLEY VIEW DRIVE, LISBON, NEW HAMPSHIRE

STANDARD SANITARY SEWER DETAILS & NOTES

SHEET D6.2

SEEDING RECOMMENDATIONS

1. GRADING AND SHAPING

A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

2. SEEDBED PREPARATION

A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.

B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE AMENDED WITH ORGANIC MATTER AND TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME THOROUGHLY INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

3. ESTABLISHING VEGETATION

A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:

-AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ. FT.
-NITROGEN (N), 50 LBS., PER ACRE OR 1.1 LBS. PER 1,000 SQ. FT.
-PHOSPHATE (P_2O_5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.
-POTASH (K_2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.

(NOTE: THIS IS THE EQUAL OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10).

B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.

C. SEEDING GUIDE:

USE	SEEDING MIXTURE (SEE 3D)	SOIL TYPE: DROUGHTY	WELL DRAINED	MOD. WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A B C	FAIR POOR FAIR	GOOD GOOD EXCELLENT	GOOD FAIR EXCELLENT	FAIR FAIR POOR
WATERWAYS, EMERGENCY SPILL-WAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES	A B	GOOD GOOD	GOOD GOOD	GOOD FAIR	FAIR POOR

D. SEEDING RATES:

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A TALL FESCUE CREEPING RED FESCUE REDTOP TOTAL:	20 20 2 42	0.45 0.45 0.05 0.95
B TALL FESCUE CREEPING RED FESCUE CROWN VETCH **OR** FLATPEA TOTAL:	15 10 15 **OR** 30 40 **OR** 55	0.35 0.25 0.35 **OR** 0.75 0.95 **OR** 1.35
C TALL FESCUE FLATPEA TOTAL:	20 30 50	0.45 0.75 1.20

E. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO SEPTEMBER 15. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.

F. TEMPORARY SEEDING RATES:

SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.	REMARKS
WINTER RYE	112	2.5	BEST FOR FALL SEEDING. SEED FROM AUGUST TO SEPTEMBER 5TH FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	80	2.0	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15TH FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40	1.0	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE NOT IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. COVER SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYEGRASS	30	0.7	GOOD COVER WHICH IS LONGER LASTING THAN ANNUAL RYEGRASS. SEED BETWEEN APRIL 1ST AND JUNE 1ST AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. MULCHING WILL ALLOW SEEDING THROUGHOUT THE GROWING SEASON. SEED TO A DEPTH OF APPROXIMATELY 0.5 INCH.

4. MULCH

A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.

B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING.

5. MAINTENANCE TO ESTABLISH A STAND

A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.

B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ON SITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.

C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

EROSION CONTROL GENERAL NOTES

A. KEEP SITE MODIFICATION TO A MINIMUM

1. CONSIDER FITTING THE BUILDINGS AND STREETS TO THE NATURAL TOPOGRAPHY. THIS REDUCES THE NEED FOR CUTS AND FILLS. AVOID EXTENSIVE GRADING THAT WOULD ALTER DRAINAGE PATTERNS OR CREATE VERY STEEP SLOPES.
2. EXPOSE AREAS OF BARE SOIL TO EROSIVE ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
3. SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT.
4. LIMIT THE GRADES OF SLOPES SO VEGETATION CAN BE EASILY ESTABLISHED AND MAINTAINED.
5. AVOID SUBSTANTIAL INCREASE IN RUNOFF LEAVING THE SITE.

B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES

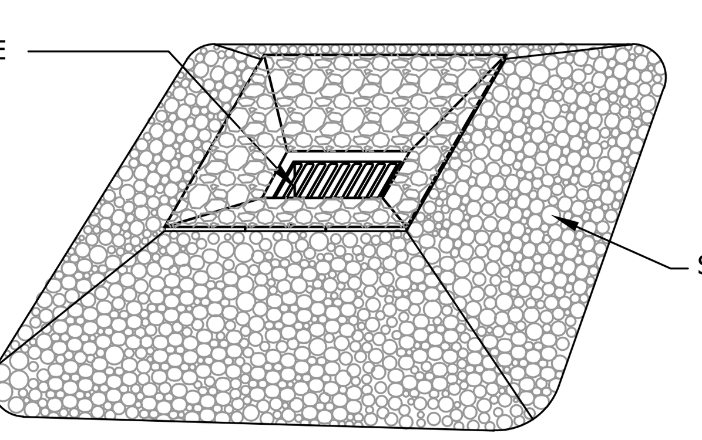
1. STOCKPILE TOPSOIL REMOVED FROM CONSTRUCTION AREA AND SPREAD OVER ANY DISTURBED AREAS PRIOR TO REVEGETATION. TOPSOIL STOCKPILES MUST BE PROTECTED FROM EROSION.
2. PROTECT BARE SOIL AREAS EXPOSED BY GRADING ACTIVITIES WITH TEMPORARY VEGETATION OR MULCHES.
3. USE SEDIMENT BASINS TO TRAP DEBRIS AND SEDIMENT WHICH WILL PREVENT THESE MATERIALS FROM MOVING OFF SITE.
4. USE DIVERSIONS TO DIRECT WATER AROUND THE CONSTRUCTION AREA AND AWAY FROM EROSION PRONE AREAS TO POINTS OF SAFE DISPOSAL.
5. USE TEMPORARY CULVERTS OR BRIDGES WHEN CROSSING STREAMS WITH EQUIPMENT.
6. PLACE CONSTRUCTION FACILITIES, MATERIALS, AND EQUIPMENT STORAGE AND MAINTENANCE AREAS AWAY FROM DRAINAGE WAYS.

C. PROTECT AREA AFTER CONSTRUCTION.

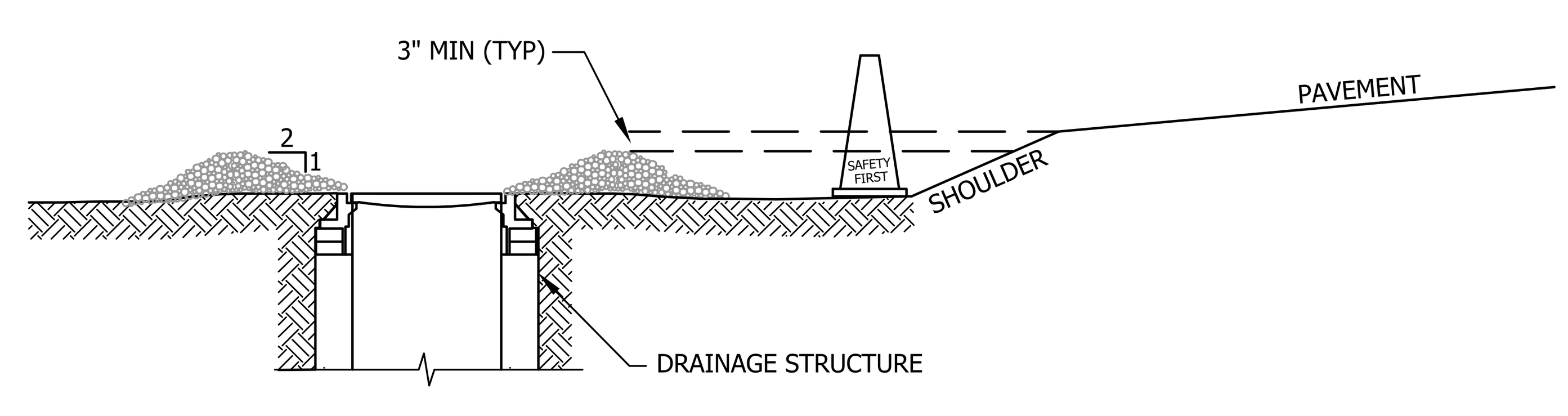
1. ESTABLISH GRASS OR OTHER SUITABLE VEGETATION ON ALL DISTURBED AREAS. SELECT SPECIES ADAPTED TO THE SITE CONDITIONS AND THE FUTURE USE OF THE AREA. FINAL GRADES SHALL BE SEEDED WITHIN 72 HOURS. STABILIZATION SHALL BE DEFINED AS 85% VEGETATIVE COVER.
2. MAINTAIN VEGETATED AREAS USING PROPER VEGETATIVE 'BEST MANAGEMENT PRACTICES' DURING THE CONSTRUCTION PERIOD.
3. MAINTAIN NEEDED STRUCTURAL 'BEST MANAGEMENT PRACTICES' AND REMOVE SEDIMENT FROM DETENTION PONDS AND SEDIMENT BASINS AS NEEDED.
4. DETERMINE RESPONSIBILITY FOR LONG TERM MAINTENANCE OF PERMANENT 'BEST MANAGEMENT PRACTICES'.
5. IF CONSTRUCTION IS ANTICIPATED DURING WINTER MONTHS, REFER TO 'COLD WEATHER SITE STABILIZATION REQUIREMENTS'.

D. INVASIVE SPECIES AND FUGITIVE DUST

1. THE PROJECT SHALL NOT CONTRIBUTE TO THE SPREAD OF INVASIVE SPECIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL TAKE NECESSARY ACTIONS TO PREVENT THE INTRODUCTION OF INVASIVE SPECIES, AND IF FOUND SHALL TAKE NECESSARY MEASURES TO PREVENT THEIR SPREAD IN ACCORDANCE WITH RSA 430:51-57 AND AGR 3800. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT THE INTRODUCTION OF INVASIVE SPECIES BY INSPECTING AND CLEANING ALL EQUIPMENT ARRIVING ON SITE.
2. FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.



PERSPECTIVE VIEW



SECTION

MATERIALS SPECIFICATIONS:
1. SCREENED GRAVEL: UNIFORMLY GRADED 1" TO 4" DIA. STONE.

CONSTRUCTION SPECIFICATIONS:
1. INSTALL GRAVEL INLET PROTECTION WHERE INDICATED OR WARRANTED.
2. FOR ALL INSTALLATIONS WHERE INLET PROTECTION IS WITHIN 8' OF EDGE OF PAVEMENT, A ROADWAY CONE SHALL BE USED BETWEEN CATCH BASIN AND SHOULDER.
3. ENSURE CREST OF GRAVEL PLACED AROUND CATCH BASIN IS AT LEAST 3" BELOW ELEVATION OF EDGE OF PAVEMENT.

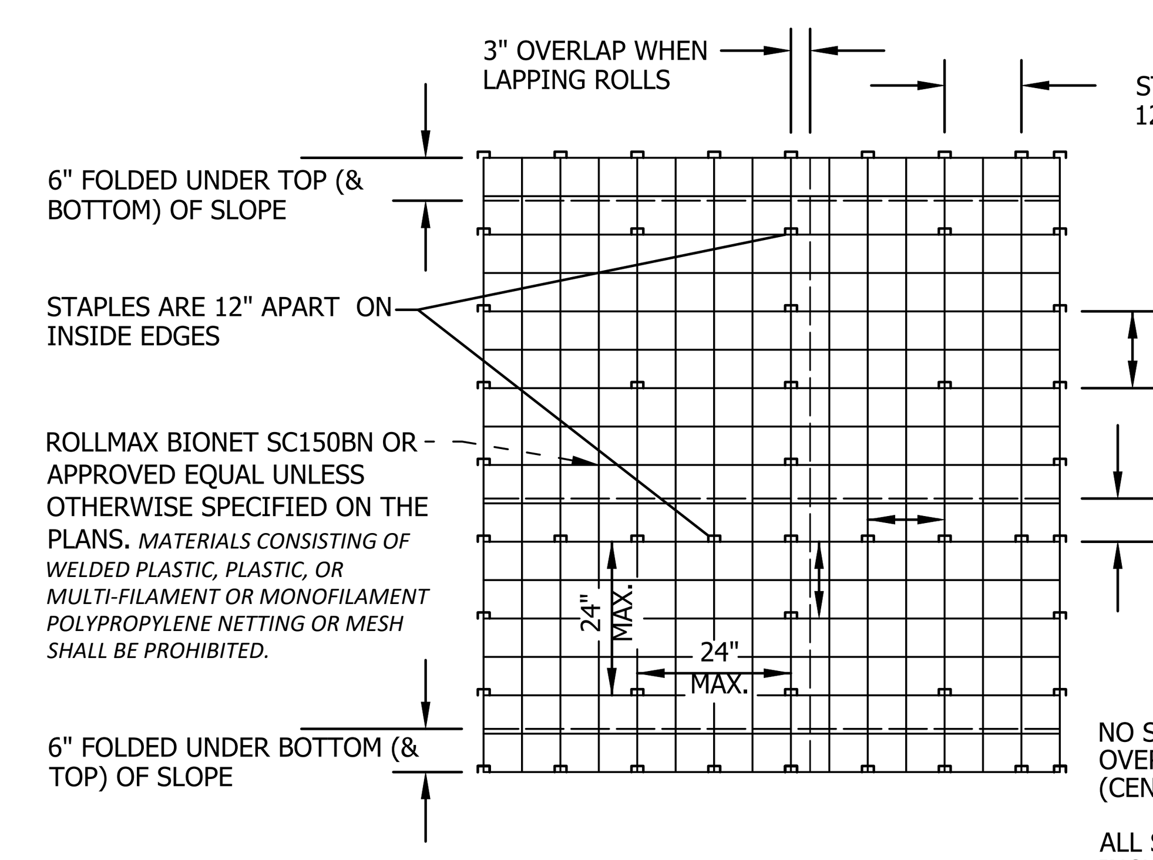
CATCH BASIN INLET PROTECTION DETAIL

NO SCALE

COLD WEATHER SITE STABILIZATION REQUIREMENTS

TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING ADDITIONAL STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1:

1. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1 ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
2. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE, SECURED WITH ANCHORED NETTING OR TACKIFIER, OR 2 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
3. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH PROPERLY INSTALLED AND ANCHORED EROSION CONTROL MATTING OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
4. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX, MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H), SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
5. INSTALLATION OF EROSION CONTROL MATTING SHALL NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
6. ALL PROPOSED STABILIZATION IN ACCORDANCE WITH NOTES 2 OR 3 ABOVE, SHALL BE COMPLETED WITHIN 1 DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
7. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS, AS DETERMINED BY THE OWNER'S ENGINEERING CONSULTANT.
8. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM NO. 304.1 OR 304.2.



MULCH NETTING DETAIL

SOURCE: USDA SOIL CONSERVATION SERVICE
NO SCALE

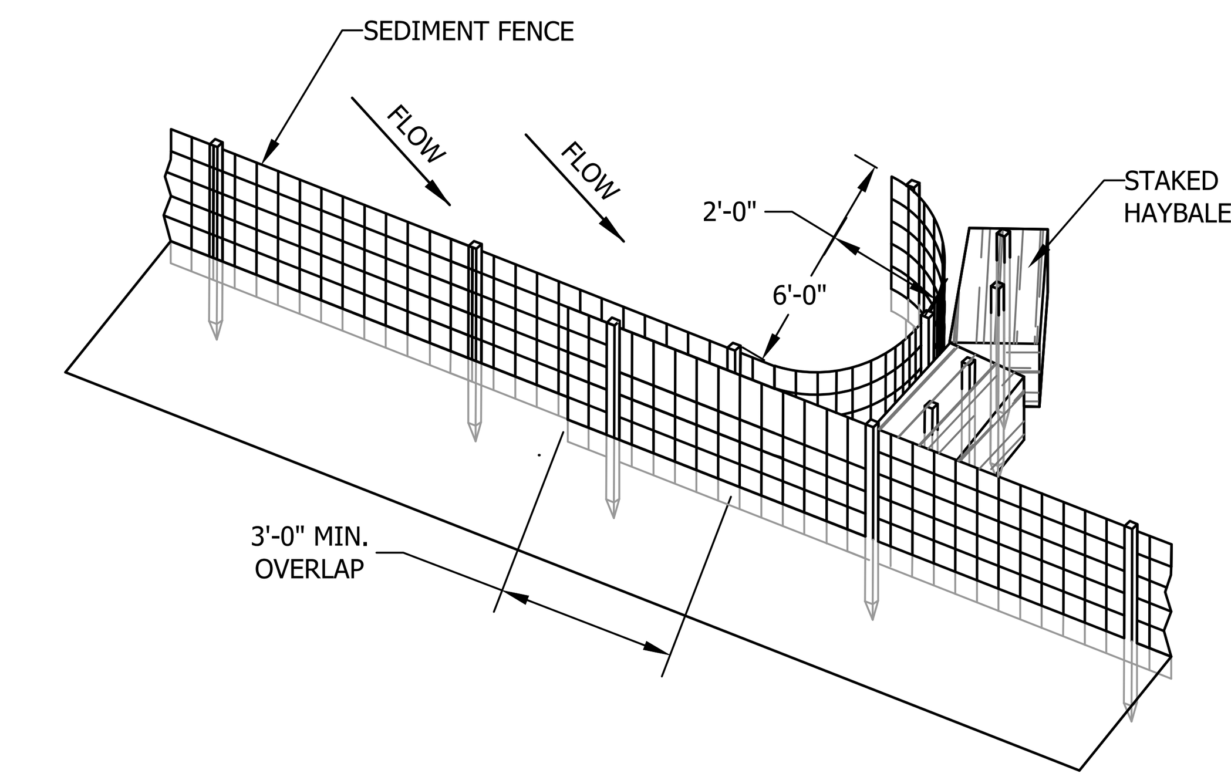
CONSTRUCTION NOTES FOR SEDIMENT FENCE

1. WOVEN WIRE FENCE, IF REQUIRED, TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SEDIMENT FENCE, OR 50% OF CAPACITY IS USED.
5. 12" DIAMETER FILTREXX SILTSOXX SHALL BE CONSIDERED AN ACCEPTABLE EQUAL TO SEDIMENT FENCE IF INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

CONSTRUCTION SEQUENCE

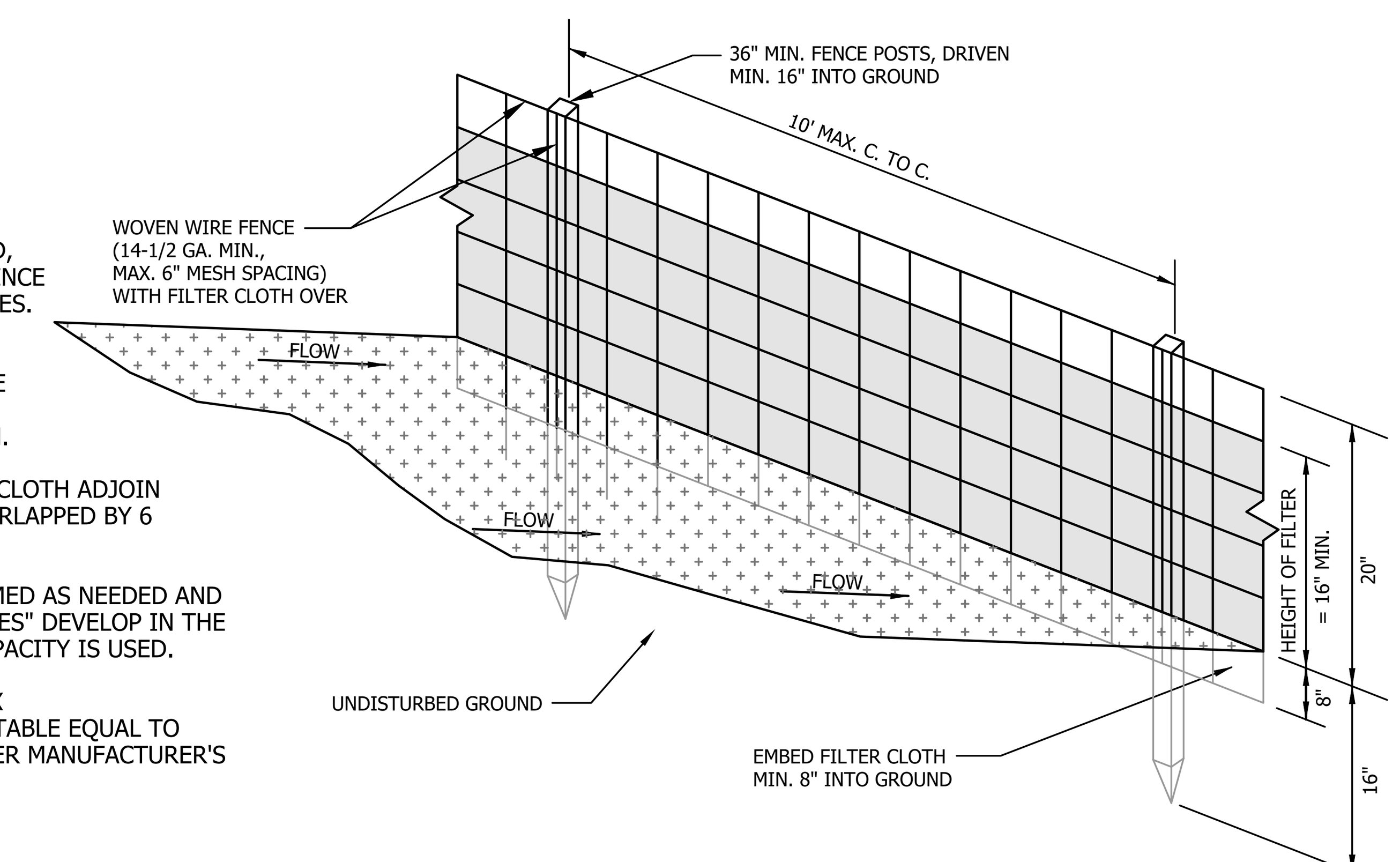
1. PREPARE AN EROSION CONTROL PLAN OR A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
2. INSTALL CONSTRUCTION ENTRANCE, SEE DETAIL.
3. CUT AND CLEAR TREES WITHIN THE CLEARING LIMITS.
4. INSTALL SEDIMENT FENCES, ROCK CHECK DAMS, AND OTHER APPROPRIATE EROSION CONTROL MEASURES AT LOCATIONS SHOWN ON THE PLANS AND AS NEEDED.
5. GRUB SITE WITHIN GRADING LIMITS.
6. STRIP AND STOCKPILE TOPSOIL AND INSTALL EROSION CONTROL MEASURES.
7. INSTALL/ADJUST SEDIMENT FENCE, CHECK DAMS, AND HAYBALES, AS REQUIRED.
8. CONSTRUCT PERMANENT STORMWATER CONTROLS AS SOON AS PRACTICAL. DO NOT DIRECT STORMWATER TOWARD TREATMENT BASINS, PONDS, SWALES, DITCHES AND LEVEL SPREADERS UNTIL THEY HAVE BEEN STABILIZED.
9. PROCEED WITH WORK, LIMITING THE DURATION 0F DISTURBANCE. THE MAXIMUM OF UNCOVERED DISTURBED EARTH AT ANY ONE TIME IS FIVE ACRES. THE MAXIMUM LENGTH OF TIME THAT DISTURBED EARTH MAY BE LEFT UNSTABILIZED IS 45 DAYS.
10. BEGIN SEEDING AND MULCHING IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED WITH APPROVED METHODS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

    AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
    D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
11. INSPECT ALL EROSION CONTROL MEASURES ON A DAILY BASIS AND AFTER EVERY 0.5 INCHES OF PRECIPITATION. MAINTAIN SEDIMENT FENCE, SEDIMENT TRAPS, HAY BALES, ETC., AS NECESSARY.
12. PAVE ROADWAYS AND/OR PARKING AREAS.
13. PLACE TOPSOIL, SEED AND MULCH.
14. COMPLETE ALL REMAINING PERMANENT EROSION CONTROL STRUCTURES.
15. MONITOR THE SITE AND MAINTAIN STRUCTURES AS NEEDED UNTIL FULL VEGETATION IS ESTABLISHED.



SEDIMENT FENCE POCKET

NO SCALE



SEDIMENT FENCE

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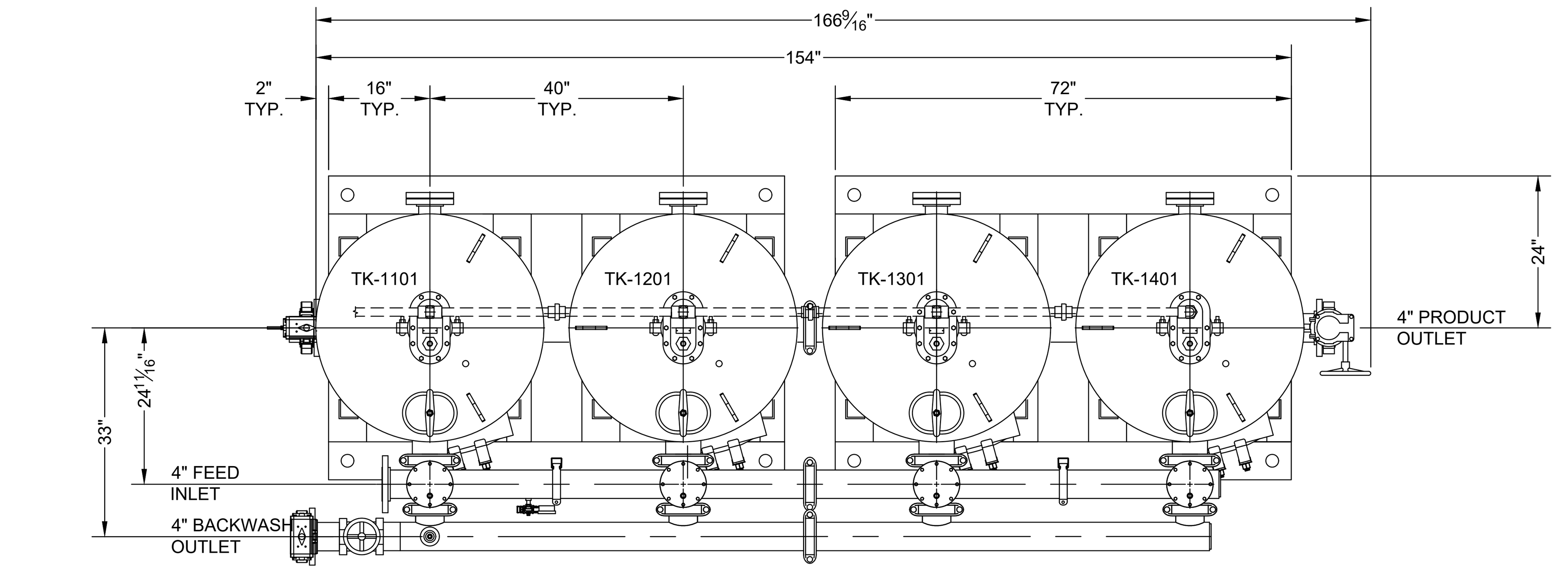
CONSTRUCTION SEQUENCE, EROSION CONTROL DETAILS & NOTES

SHEET D6.3

last revised: 2018-APR-18



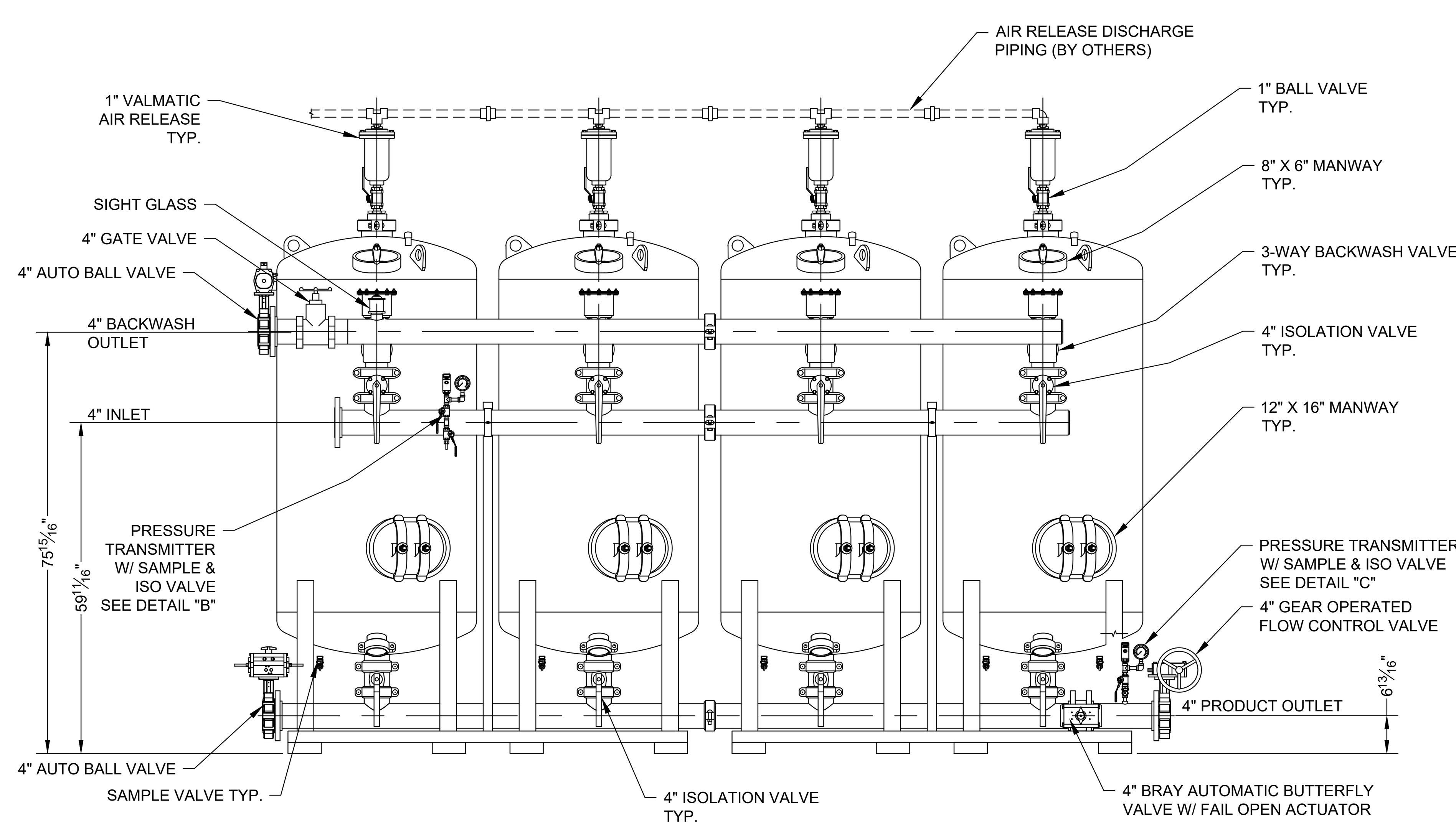
PLAN

FLOW RATE	SANDPLUS GPM	SANDPLUS GPM/FT²	OXIPLUS12 GPM	OXIPLUS12 GPM/FT²	OXIPLUS75 GPM	OXIPLUS75 GPM/FT²	GREENSAND ANTHRACITE GPM	GREENSAND ANTHRACITE GPM/FT²	SAND ANTHRACITE GPM	SAND ANTHRACITE GPM/FT²	GRANULAR ACTIVATED CARBON GPM	GRANULAR ACTIVATED CARBON GPM/FT²	ANION EXCHANGE RESIN WITH ANTHRACITE BED GPM	ANION EXCHANGE RESIN WITH ANTHRACITE BED GPM/FT²
Typical Flow rate	353	12.5	170	6	212	7.5	85	3	85	3	85	3	283	10
Min Flow rate	57	2	57	2	57	2	57	2	57	2	42	1.5	42	1.5
Max Flow rate	424	15	254	9	339	12	254	9	254	9	85	3	339	12
Backwash														
80°F	158	22.3	159	22.5	269	38	110	15.5	159	22.5	46	6.5	8	1.1
70°F	140	19.8	141	20	240	34	99	14	152	21.5	42	6	6	0.9
60°F	122	17.2	120	17	205	29	92	13	142	20.1	39	5.5	6	0.8
50°F	105	14.8	106	15	177	25	81	11.5	127	18	35	5	5	0.7
40°F	88	12.5	92	13	177	25	71	10	122	17.2	32	4.5	4	0.6

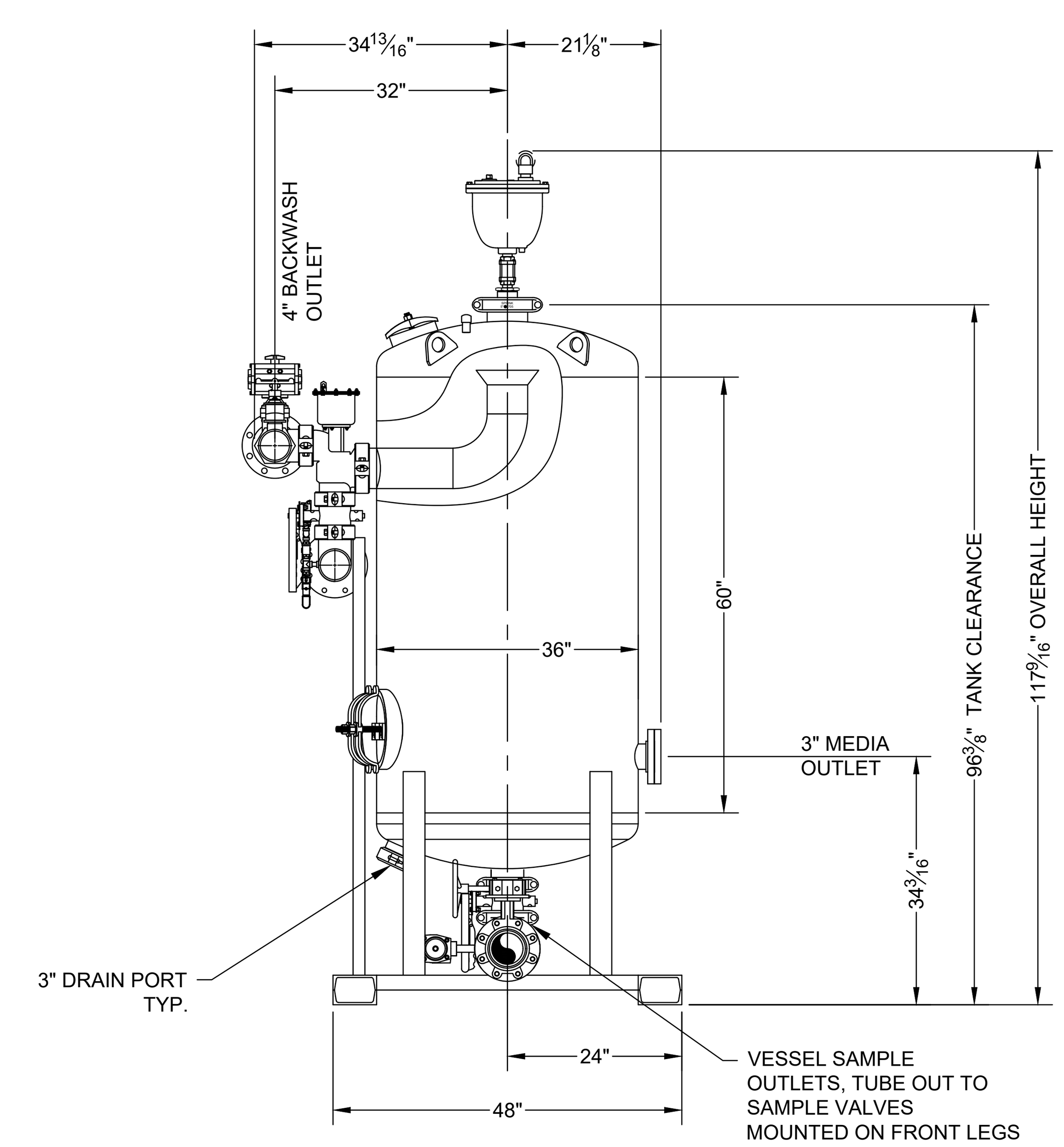
Approx. Weight (lbs)	SANDPLUS	OXIPLUS12	OXIPLUS75	GREENSAND ANTHRACITE	SAND ANTHRACITE	GRANULAR ACTIVATED CARBON	ANION EXCHANGE RESIN WITH ANTHRACITE BED
Equipment	3,227	3,227	3,227	3,227	3,227	3,227	3,227
Media	7,050	9,650	12,250	9,800	10,500	5,100	4,600
Operating	21,900	24,000	26,800	23,800	24,300	20,100	18,900
Media Requirements (SYSTEM TOTAL in ft³)							
1/2" x 1/4" Gravel	8	8	8	8	8	8	N/A
1/4" x 1/8" Gravel	8	8	8	8	8	8	N/A
1/8" x 1/16" Gravel	8	8	8	8	8	8	N/A
0.8-2.0mm Sand	8	8	8	8	8	8	N/A
Media #1	84	86	85	64	64	112	8
Media#2	N/A	N/A	N/A	32	32	N/A	96
Media Requirements (PER TANK in ft³)							
1/2" x 1/4" Gravel	2	2	2	2	2	2	N/A
1/4" x 1/8" Gravel	2	2	2	2	2	2	N/A
1/8" x 1/16" Gravel	2	2	2	2	2	2	N/A
0.8-2.0mm Sand	2	2	2	2	2	2	N/A
Media #1	21	22	21	16	16	28	2
Media#2	N/A	N/A	N/A	8	8	N/A	24
Freeboard (in)	19	19	19	14	14	11	23
Backwash Expansion	~40%	~20%	~23%	~28%	~28%	~20%	~20%

GENERAL NOTES:

1. VESSEL MAT'L: SA36 BUTT WELD VESSEL CIRC SEAMS.
2. EXTERIOR COLOR STANDARD BLUE, RAL 5010.
3. 304SS UNDRERDRAIN LATERALS AND HUB.
4. SAMPLE VALVE ON INLET AND OUTLET PIPE HEADER, & OUTLET OF EACH TANK.
5. 100 PSIG NON CODE, HYDRO TEST 130 PSI, 1 HOUR.
6. 36"X30"X12" CONTROL PANEL (NOT SHOWN) SHIPPED LOOSE FOR ON SITE INSTALLATION.
7. DESIGN DATA:



ELEVATION



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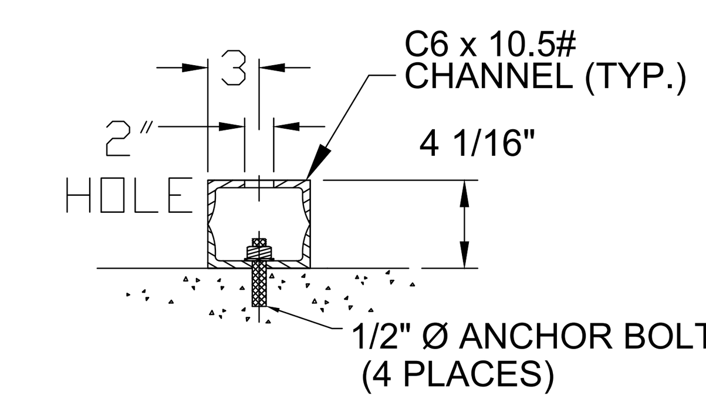
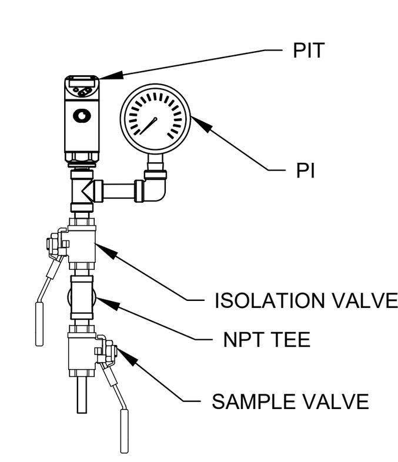
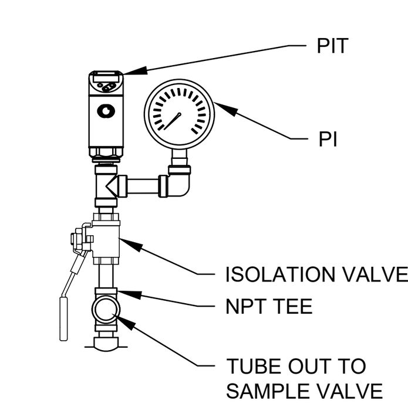


SECTION A-A



DETAIL "B"



DETAIL "C"

WATER SURPLUS POWERED BY HAWKINS
LOVES PARK, IL 61111 • WATERSURPLUS.COM • (800) 919-0888

DATE	TITLE	DRAWING NO:
5/4/26	GENERAL ARRANGMENT QUAD FILTER 30" X 60"	XX036060-4-GA-01
DRAWN BY: WJW	CUSTOMER: WATER SURPLUS LOVES PARK, IL	TOLERANCE: 1" / PROJECTION: THIRD ANGLE / SHEET: 1 OF 1 / REV:
APPROVED BY:		

REV	DESCRIPTION	DATE	BY

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

PROJECT #: 21215
DATE: APRIL 2025
MAP-LOT (OR ARCHIVE): *
SURVEYED BY: HEI- DJG/NWS
ENGINEERED BY: MLB
DRAWN BY: LJM
CHECKED BY: CFC

horizons Engineering
Civil and Structural Engineering
Land Surveying and Environmental Consulting
MAINE • NEW HAMPSHIRE • VERMONT
www.horizonsengineering.com

TOWN OF LISBON
CONTRACT #1 WATER SYSTEM IMPROVEMENTS
USDA WEP, ARPA 1361010, DW SRF 1361010, DWGT-82
CONTROL BUILDING, WELLSITE, CHEMICAL BUILDING ADDITION & MANGANESE TREATMENT
BISHOP ROAD & VALLEY VIEW DRIVE, LISBON, NEW HAMPSHIRE

OXIPLUS QUAD FILTER SYSTEM DETAILS

FOR CONSTRUCTION

DATE OF PRINT
APRIL 17 2025
HORIZONS ENGINEERING

SHEET D6.4

ELECTRICAL ABBREVIATIONS LIST:

(NOT ALL ABBREVIATIONS MAY BE USED)

A	AMPERE(S)
A.C.	ALTERNATING CURRENT
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
ALT	ALTERNATE
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BW	BUSWAY
C	CONDUIT (SEE RACEWAYS AND CONDUCTORS)
CB	CIRCUIT BREAKER
CC	CONTROL CABINET
CATV	CABLE ACCESS TELEVISION
CKT	CIRCUIT
CLG	CEILING
COND	CONDUCTOR
CONN	CONNECT
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
D.C.	DIRECT CURRENT
DM	DIMMER CONTROL
DISC	DISCONNECT
DN	DOWN
DP	DOUBLE POLE
DT	DOUBLE THROW
E.C.	ELECTRICAL CONTRACTOR
E.HTR	ELECTRIC HEATER
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EOL	END LINE RESISTOR
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
F	FUSE
F.P.C.	FIRE PROTECTION CONTRACTOR
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FDR	FEEDER
FL	FLOOR
FLUOR	FLUORESCENT
FS	FUSIBLE SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
G.C.	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GRD	GROUND
H.D.	HOT DIPPED
H.I.D.	HIGH INTENSITY DISCHARGE
H.P.S.	HIGH PRESSURE SODIUM
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HZ	FREQUENCY IN CYCLES PER SECOND
IC	INTERCOM
IMC	INTERMEDIATE METALLIC CONDUIT
INC	INCANDESCENT
ISO	ISOLATED NEUTRAL
JB	JUNCTION BOX
K	KEY OPERATED
KCMIL	THOUSAND CIRCULAR MIL(S)
kVA	KILOVOLT AMPERE(S)
KVAR	KILOVAR(S)
kW	KILOWATT(S)
L.P.S.	LOW PRESSURE SODIUM
LP	LIGHTING PANEL
LV	LOW VOLTAGE
MC.	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MGST	MAGNETIC STARTER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTH	MOUNTING HEIGHT
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
N.I.C.	NOT IN CONTRACT
NC	NORMALLY CLOSED
NF	NONFUSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	OVER COUNTER
OL	OVERLOAD ELEMENT
P	PILOT INDICATOR
PF	POWER FACTOR
PLG.C	PLUMBING CONTRACTOR
PNL	PANEL
PP	POWER PANEL
PRI	PRIMARY
PS	PULL SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
R	RELAY
RC	REMOTE CONTROL
RECP	RECEPTACLE
RGS	RIGID METAL CONDUIT
S.S.	SOLID STATE
SEC	SECONDARY
SMR	SURFACE METAL RACEWAY
SP	SINGLE POLE
SPK	SPEAKER
SST	SOLID STATE TRIP
ST	SINGLE THROW
SW	SWITCH
SWBD	SWITCHBOARD
T EL	TELEPHONE
TB	TERMINAL BOX
TEMP	TEMPORARY
TV	TELEVISION
TYP	TYPICAL
UC	UNDER CABINET
UG	UNDERGROUND
UH	UNIT HEATER
UNG	UNGROUNDED
UPS	UNINTERRUPTED POWER SYSTEM
USB	UNIVERSAL SERIAL BUS
V	VOLT(S)
VA	VOLTAMP(S)
VAR	REACTIVE VOLT AMPERES
VP	VAPORPROOF
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

NOT ALL SYMBOLS MAY BE USED

MOUNTING ABBREVIATIONS LEGEND:

SUBSCRIPT AT OUTLET	DESCRIPTION
OC	OVER COUNTER OUTLET: INSTALL BOTTOM OF OUTLET BOX 1-1/2" ABOVE HIGHEST ELEMENT OF COUNTER (I.E., BACKSPLASH OR COUNTER TOP IF NO BACK SPLASH).
CR	CASEWORK RECESSED OUTLET: MOUNT BOX IN CASEWORK VERTICAL SURFACE.
EQ	EQUIPMENT OUTLET: FINAL TERMINATION METHOD AND EXACT LOCATION SHALL BE DETERMINED FROM EQUIPMENT MANUFACTURER'S APPROVED SHOP DRAWINGS.
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
MTH	MOUNTING HEIGHT

RACEWAYS AND CONDUCTORS LEGEND:

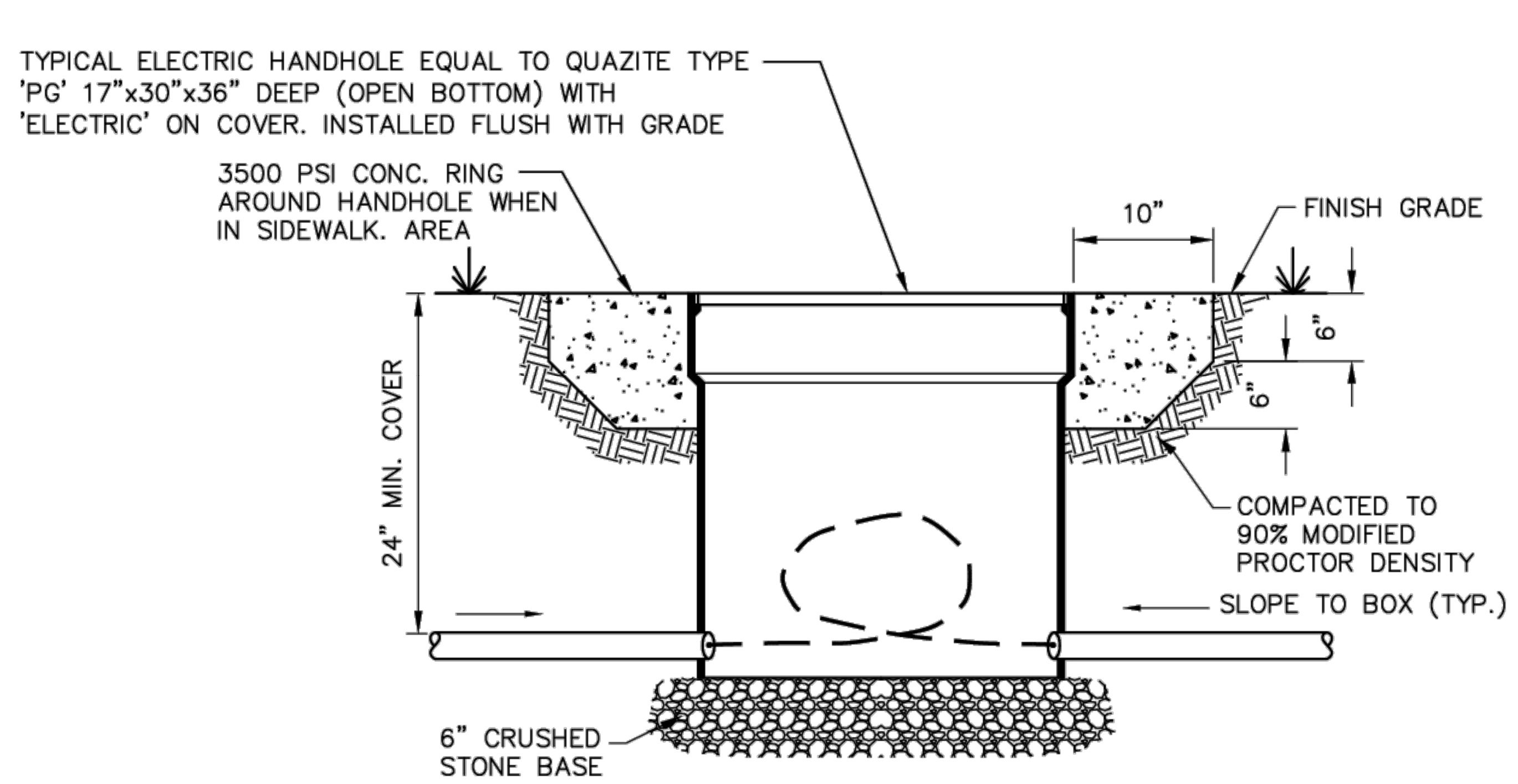
SYMBOL	DESCRIPTION
LV	LOW VOLTAGE WIRING
	CIRCUIT IN CONDUIT RUN IN-SLAB OR UNDERGROUND
	CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING WHERE POSSIBLE.
CKT	HOMERUN TO PANELBOARD OR AS NOTED
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN

RECEPTACLE OUTLETS LEGEND:

SYMBOL	NUMBER BY THE SIDE OF SYMBOL DENOTES CIRCUIT NUMBER. DEVICE MOUNTING HEIGHTS ARE DENOTED BELOW UNLESS OTHERWISE NOTED ON PLANS. COORDINATE EXACT LOCATIONS AND ALL MOUNTING HEIGHTS W/ ARCHITECTURAL PLANS/SECTIONS.
	DUPLEX CONVENIENCE OUTLET. MOUNT AT +18" AFF.
X	DUPLEX CONVENIENCE OUTLET. MOUNT AT +18" AFF. 'X' DENOTES REUSE LOCATION.
	DOUBLE DUPLEX OUTLET (QUADPLEX RECEPTACLE). MOUNT AT +18" AFF.
	DUPLEX OUTLET. INSTALLED ABOVE CEILING AT LOCATION SHOWN.
	SINGLE DEDICATED OUTLET. MOUNT @ 18" AFF.
	SPECIAL OUTLET AS NOTED ON DRAWINGS. MOUNT AT +18" AFF. 'R' DENOTES RANGE. 'D' DENOTES DRYER.
24"	WIREMOLD 3000. DUPLEX RECEPTACLES SPACED 24" ON CENTER.
	WALL MOUNT AT 36" AFF.
OR GFI	GROUND FAULT CIRCUIT INTERRUPTER
OC	OVER-COUNTER
WP	WEATHERPROOF

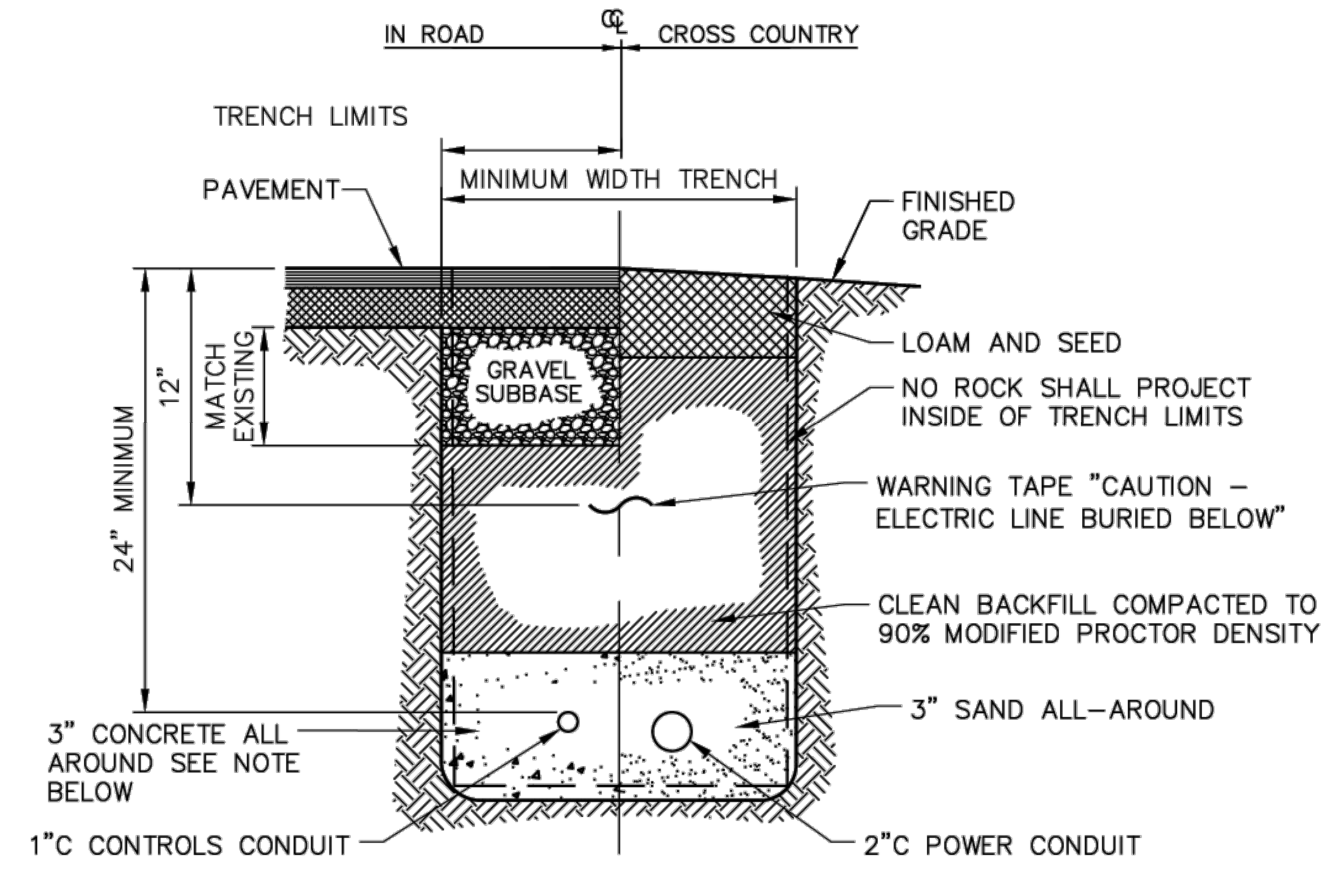
POWER APPURTANCES LEGEND:

SYMBOL	REFER TO PLANS FOR EXACT QUANTITIES AND LOCATIONS.
	FLUSH MOUNTED PANELBOARD AND CABINET. MOUNT AT 6'-6" MAX. AFF TO TOP.
	SURFACE MOUNTED PANELBOARD AND CABINET. MOUNT AT 6'-6" MAX. AFF TO TOP.
PB	ELECTRICAL PULL BOX, SIZED AS REQUIRED OR AS SHOWN ON DRAWINGS.
J	JUNCTION BOX (JB) (IN ACCESSIBLE LOCATION).
J	JUNCTION BOX (JB) (IN ACCESSIBLE LOCATION) W/ FLEXIBLE CONDUIT TO EQUIPMENT AS SHOWN. - JUNCTION BOX SUBSCRIPTS: 'C' CONTROL, 'D' DATA, 'DT' DATA/TELEPHONE, 'F' FIRE ALARM, 'P' POWER, 'T' TELEPHONE.
1	MOTOR. HORSEPOWER AS SHOWN ON DRAWINGS.
S_M	H.P. RATED MANUAL MOTOR STARTER (WEATHERPROOF WHERE OUTSIDE). SINGLE OR 2 POLE AS REQUIRED
	FUSED DISCONNECT SWITCH. SIZE AND FUSES PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF (WP) WHEN LOCATED OUTSIDE. 30A/3P MINIMUM.
	MOTOR CONTROLLER.



TYPICAL SECTION @ HANDHOLE

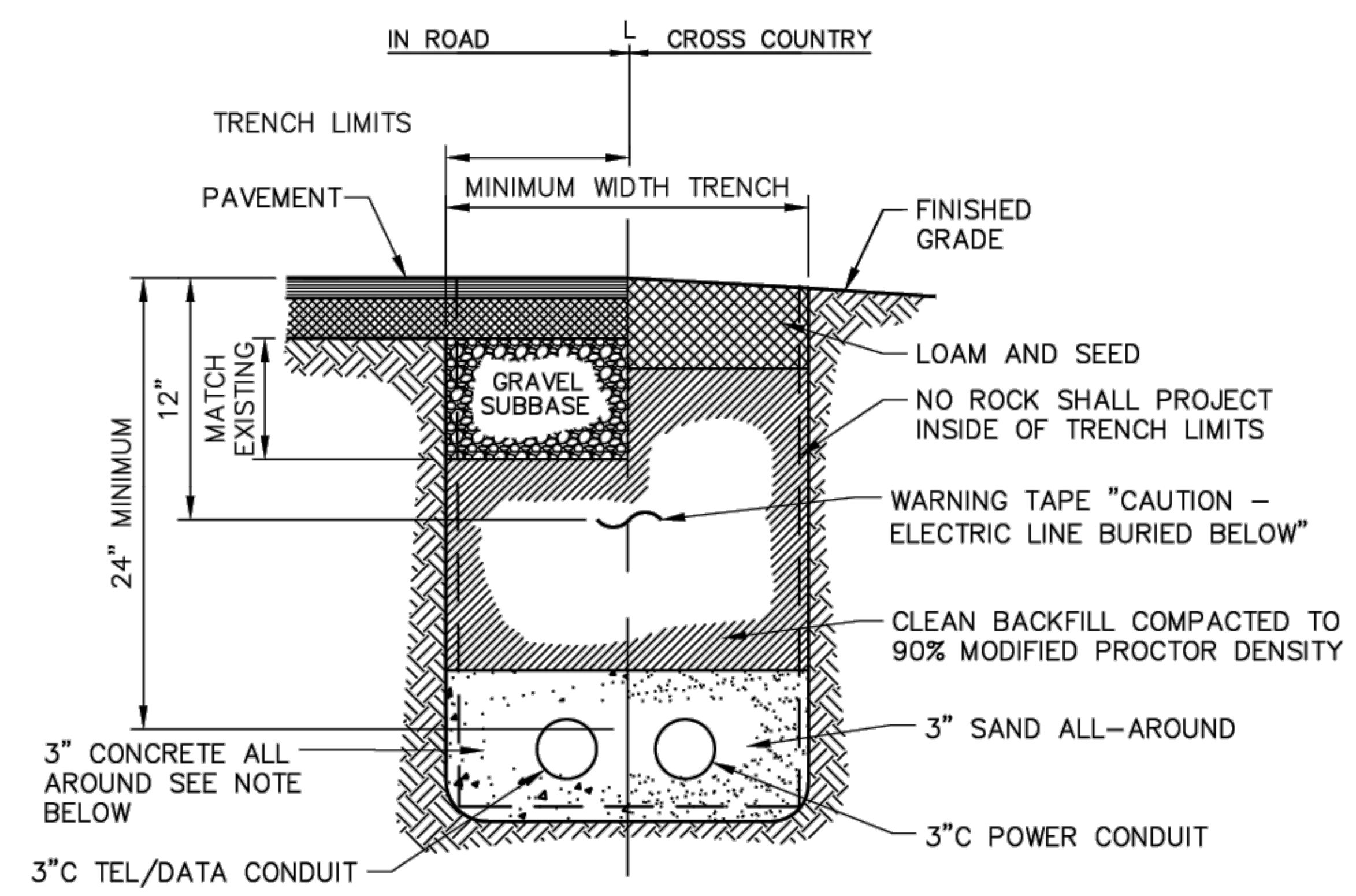
NOT TO SCALE



NOTES:
1. PROVIDE 3" CONCRETE ENCASEMENT AROUND PVC CONDUITS AT ALL ROAD AND DRIVEWAY CROSSINGS TO 5' BEYOND EDGE OF PAVEMENT. TYPICAL.

1 / E401 TYPICAL POWER AND CONTROLS TRENCH SECTION

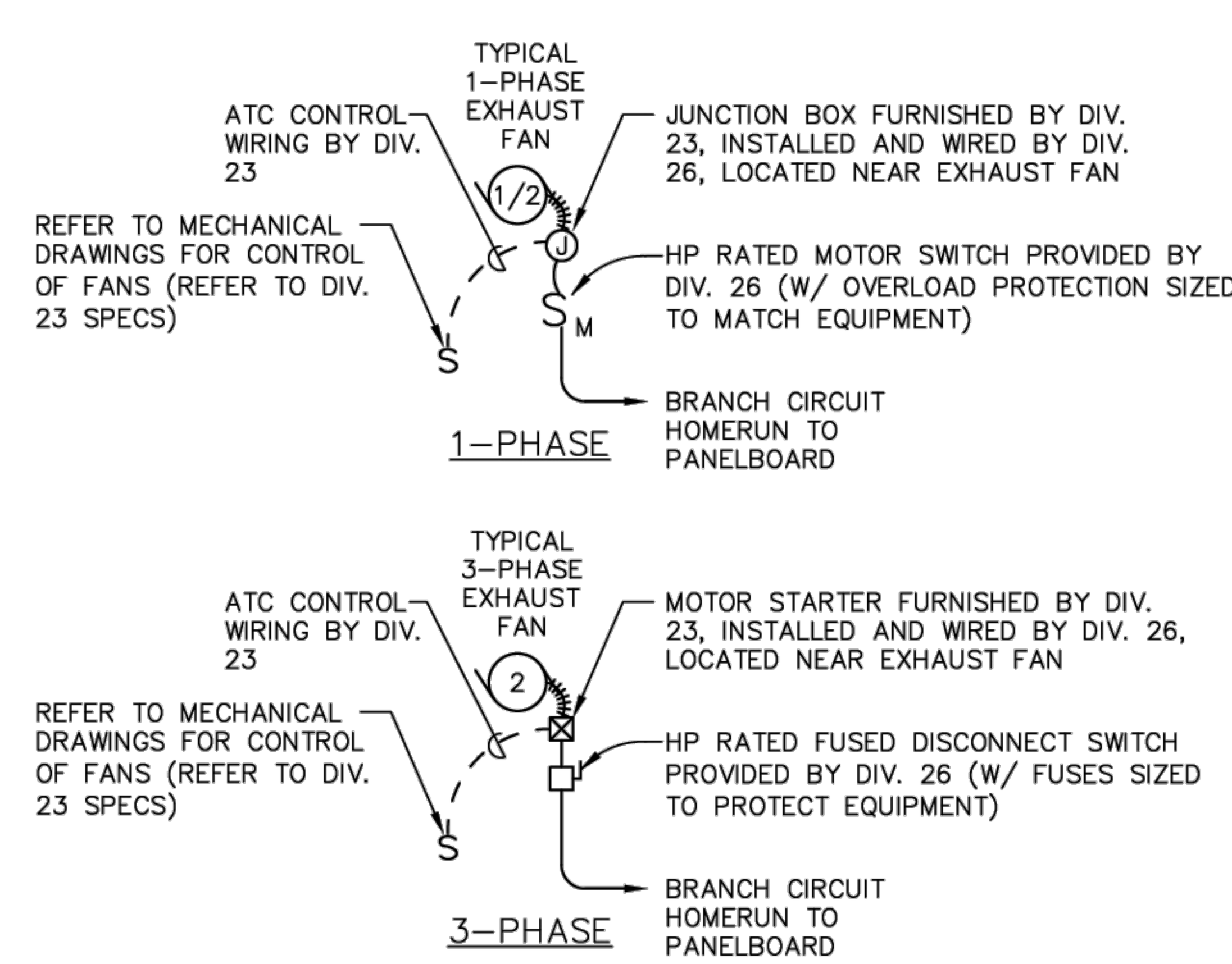
NOT TO SCALE



NOTES:
1. PROVIDE 3" CONCRETE ENCASEMENT AROUND PVC CONDUITS AT ALL ROAD AND DRIVEWAY CROSSINGS TO 5' BEYOND EDGE OF PAVEMENT. TYPICAL.

2 / E401 TYPICAL POWER TRENCH SECTION

NOT TO SCALE

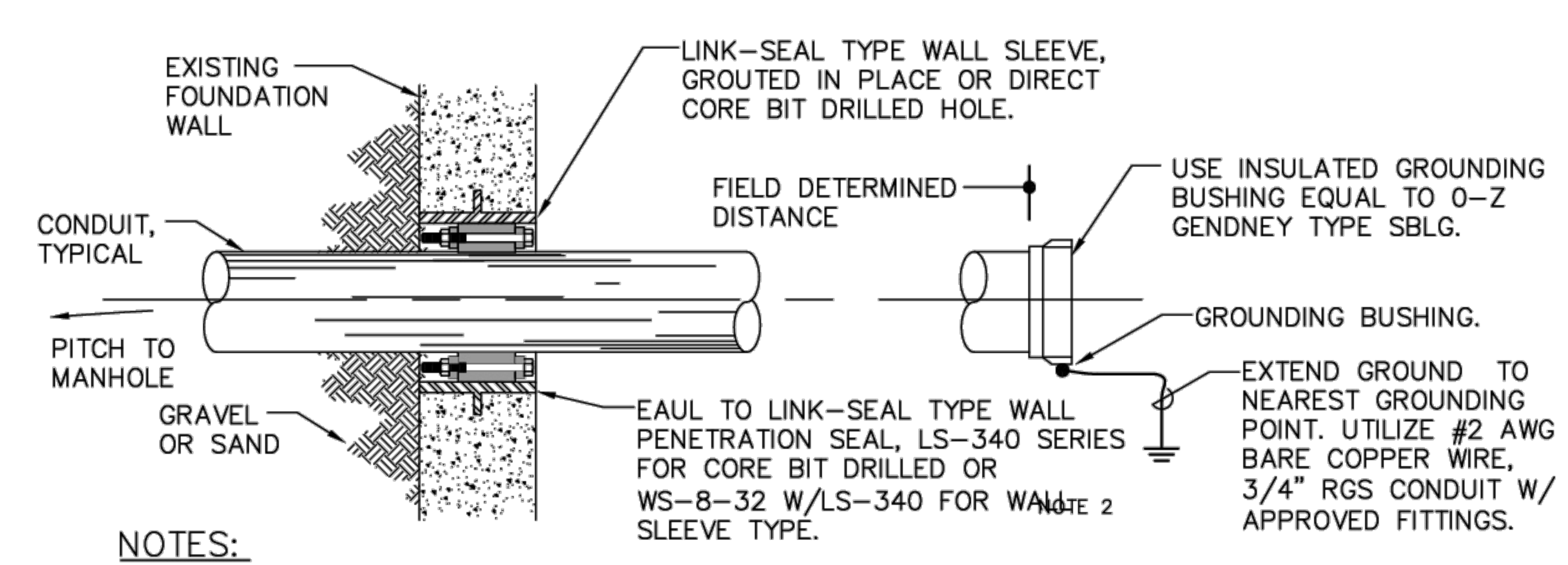


TYPICAL MOTOR WIRING DIAGRAMS

NOT TO SCALE

GENERAL NOTES:

1. ALL ELECTRICAL WORK AND MATERIALS SHALL BE INSTALLED ACCORDING TO THE LATEST STATE ADOPTED NATIONAL ELECTRICAL CODE (NEC) AND IT'S AMENDMENTS, NFPA AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
2. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
3. ALL POWER WIRING SHALL BE IN CONDUIT OR MC CABLE (REFER TO SPECIFICATIONS). ALL RACEWAYS SHALL BE EMT (ELECTRICAL METALLIC TUBING) FOR INTERIOR AND PVC FOR UNDERGROUND. THE USE OF EXISTING CONCEALED CONDUITS FOUND TO BE IN GOOD ELECTRICAL CONDITION MAY BE USED. ALL CONDUCTORS SHALL BE COPPER GROUND (TYPICAL) WITH NUMBER OF CONDUCTORS AS REQUIRED. REFER TO PANEL SCHEDULES, TYPICAL. ALL CONDUCTORS SHALL BE COPPER, WIRE SIZE NO. 8 AWG AND SMALLER BE TYPE THHN/THWN INSULATION. SIZES LARGER THEN NO. 8 SHALL HAVE TYPE "THHN/THWN" INSULATION UNLESS OTHERWISE NOTES.
4. LIMIT 20A, 120V BRANCH CIRCUITS TO A MAXIMUM 1920VA LOAD AND 15A, 120V BRANCH CIRCUIT TO A MAXIMUM 1440VA LOAD.
5. ALL WIRING SHALL BE CONCEALED IN WALLS AND ABOVE CEILING IN FINISHED AREAS AND WHEREVER POSSIBLE. WIRING IN UTILITY AREAS (ELECTRICAL SPACE) MAY BE RUN EXPOSED AS APPROVED BY THE ARCHITECT. EXPOSED WIRING SHALL BE IN CONDUIT, BE PARALLEL TO BUILDING STRUCTURAL ELEMENTS AND PRESENT A NEAT AND COMPLETE INSTALLATION.
6. CONDUITS, RACEWAYS AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS REQUIRED BY NEC ALL FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND THE CONDITIONS ENCOUNTERED.
7. EACH OUTLET OR JUNCTION IN ANY OF THE WIRING SYSTEMS SHALL BE MADE IN AN APPROVED, METALLIC JUNCTION BOX. SUCH BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES TO BE INSTALLED, AS WELL AS THE CONDITION ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED, ELECTRICAL CONNECTORS.
8. VERIFY ALL STRUCTURAL, ARCHITECTURAL AND ELECTRICAL CONDITIONS (DUCT CLEARANCES, COUNTER HEIGHTS, DOOR SWINGS, ETC.) PRIOR TO ROUGH IN FOR ELECTRICAL WIRING EQUIPMENT.
9. PRIOR TO ROUGH-IN OF ANY NEW PANEL BOARDS (IN NEW LOCATION) AND RECEPTACLES, THESE LOCATIONS AND MOUNTING HEIGHTS SHALL BE CLEARLY MARKED AND IDENTIFIED WITH SPRAY PAINT. ONCE COMPLETED, THE ARCHITECT/OWNER SHALL BE NOTIFIED THAT ALL LOCATIONS HAVE BEEN MARKED AND ARE READY FOR THEIR APPROVAL.
10. ALL ELECTRICAL WORK SHALL BE CAREFULLY COORDINATED WITH THE WORK OF OTHER TRADES AND ON-SITE CONDITIONS. WHERE CUTTING, DRILLING OR ALTERATION TO THE WORK OF OTHERS IS NECESSARY, FOR THE PROPER INSTALLATION OF ELECTRICAL EQUIPMENT, SUCH WORK SHALL BE PLANNED IN ADVANCE WITH THE GENERAL CONTRACTOR AND SHALL BE CAREFULLY DONE. ANY DAMAGE TO THE BUILDINGS OR EQUIPMENT SHALL BE REPAIRED BY PROPERLY TRAINED PERSONNEL, TO THE SATISFACTION OF THE ARCHITECT, AT NO ADDITIONAL COST TO THE OWNER.
11. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES.
12. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH IS BEING FURNISHED TO THE GENERAL CONTRACTOR FOR COORDINATION PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS TO THE GENERAL CONTRACTOR SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE FINAL LOCATIONS OF ELECTRICAL, HVAC AND OWNER'S EQUIPMENT AND POWER CONNECTION DETAILS SO THAT THE ASSOCIATED ELECTRICAL WORK WILL BE PROPERLY COORDINATED AND INSTALLED.
14. WHERE WIRING CAN NOT BE ROUTED CONCEALED UTILIZE WIREMOLD SURFACE RACEWAY (SEE SPECIFICATIONS – WITH ALL NECESSARY FITTINGS/HARDWARE AND ATTACHMENT) WITH STRANDED TYPE TYPE THHN/THWN CONDUCTOR. ALL COMPONENTS SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT. COORDINATE MOUNTING WITH ARCHITECT.
15. THE INTERIOR ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY NEC. ALL METALLIC RACEWAYS SHALL BE ELECTRICALLY AND ELECTRICALLY SECURE AT ALL JOINTS AND AT ALL BOXES, CABINETS, FITTINGS, AND EQUIPMENT.
16. COMPLETE ALL PANEL BOARD CIRCUITS DIRECTORY CARDS TO REFLECT AS-BUILT CONDITIONS.
17. ALL RACEWAYS SHALL BE PROVIDED WITH EQUIPMENT GROUND CONDUCTOR. EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL ELECTRICAL RACEWAYS AND SHALL BE SPECIFIED IN ACCORDANCE WITH NEC 250-95 AND SHALL BE CONTINUOUS.
18. FURNISH, INSTALL, TEST, CALIBRATE, AND OTHERWISE MAKE OPERATIONAL ALL DEVICES AND EQUIPMENT SHOWN ON THESE DRAWINGS.
19. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND DEFINE THE CONTRACTOR'S WORK. THESE DRAWINGS ARE DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND THE WORK OF OTHER TRADES WILL PERMIT. THESE DRAWINGS UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE LIMITATION OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY FOR THE COMPLETE INSTALLATION ARE EXCLUDED. THE ARCHITECT SHOULD BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS, OR INTERFERENCE WHICH MAY OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.



NOTES:
1. LINK-SEAL TYPE SEALING FITTING SHALL BE USED FOR ALL WALL PENETRATIONS. IF CORE BIT DRILLED SYSTEM IS USED AND CORE DRILL IS SMOOTH AND SUITABLE THE MODULE SEALING SYSTEM MAY BE USED. USE WALL SLEEVES IF ENTRY IS SIMILAR TO DETAIL 'CE'.
2. SLOPE DUCTS TOWARDS MH.
3. ALL CONDUIT PENETRATIONS SHALL BE PERPENDICULAR THROUGH FOUNDATION FOR PROPER SEAL.

CONDUIT SLEEVE THROUGH WALL DETAIL

NOT TO SCALE

FOR CONSTRUCTION

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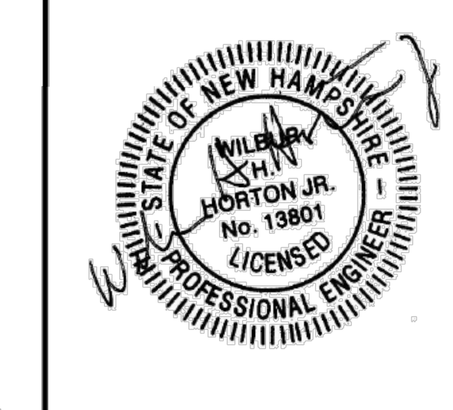


NUMBER	DATE	REVISION DESCRIPTION	BY

REVISIONS

CLIENT NAME
TOWN OF LISBON
46 SCHOOL STREET
LISBON, NH 03585
(603) 838-6376

PROJECT NAME
WATER SYSTEM IMPROVEMENTS PROJECT

PROJECT ADDRESS
BISHOP ROAD & VALLEYVIEW DRIVE
LISBON, NH

SHEET TITLE
ELECTRICAL LEGEND AND GENERAL NOTES

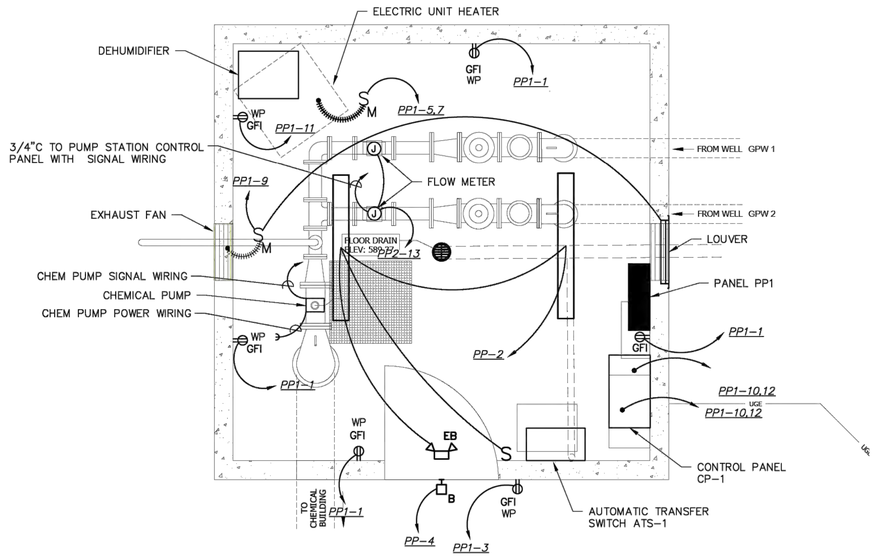
D&K PROJECT #	PROJ. ENG.
530379	CFA
DRAWN BY	CHECKED BY
EJD	WHH

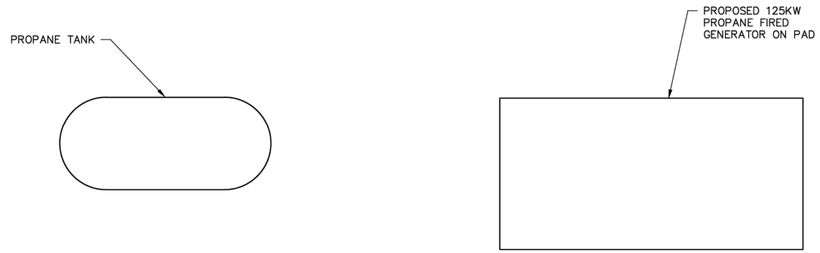
DATE: JANUARY 2025

SHEET NUMBER

E1

SHEET: 25 of XX





COORDINATION NOTE:

1. EC TO COORDINATE FINAL CONDUIT AND FEEDER SIZES BASED ON SELECTED CONTROLLER AND PUMP SELECTION.

1 CONTROL BUILDING POWER PLAN

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

0 1' 2' 4'

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	TYPE	COLOR	MOUNTING	VOLTAGE	LAMPS	REMARKS	TOTAL WATTS
A	LITHONIA LIGHTING	CSVTL485000LMMVOLT40K80CRI	6X48 IND.	WHITE	SURFACE	120	4946 LUMENS, 4000K		42
B	LITHONIA LIGHTING	WDGE2LEDP140K80CRIVFMVOLTDBXLPE	WALL PACK	BLACK	ABOVE DOOR	120	1200 LUMENS, 4000K	PROVIDE WITH PHOTOCELL	12
EB	LITHONIA LIGHTING	EL2LM12	EMERGENCY	WHITE	WALL @8'	120			0.33

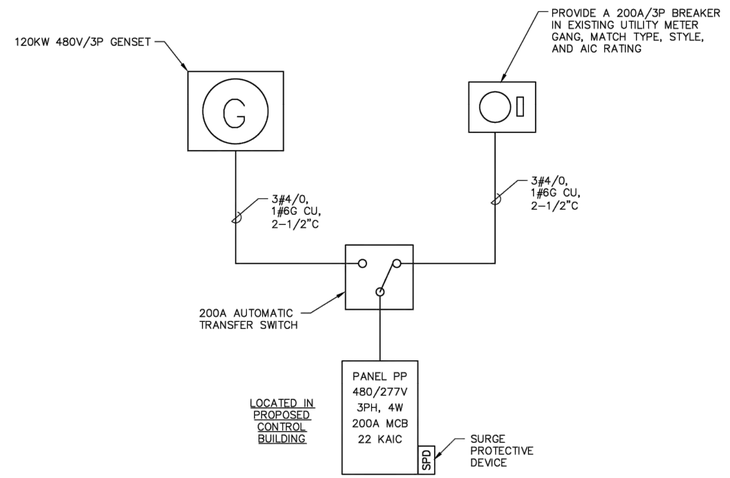
PANEL No. PP1

BUS	200 Ampere	LOCATION	CONTROL BUILDING
PANEL RATING	22 KAIC	MOUNTING	SURFACE
SUPPLY VOLTAGE	480Y/277V, 3Ø	DRAWING No.	E2
SERVICE	4-WIRE WITH GROUND BUS		

WIRING WIRE	WIRING COND	DESCRIPTION	VA OR W ØA	VA OR W ØB	VA OR W ØC	BREAKER POLE	BREAKER A	CKT. NO	BUS CONN	CKT. NO	BREAKER POLE	BREAKER A	VA OR W ØA	VA OR W ØB	VA OR W ØC	DESCRIPTION	WIRING COND	WIRING WIRE
2#12, 1#12G	3/4"	INTERIOR RECEPT	720			1	20	1	●	2	1	20	546			INTERIOR LIGHTS	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EXTERIOR RECEPT		360		1	20	3	●	4	1	20		24		EXTERIOR LIGHTS	3/4"	2#12, 1#12G
2#4, 1#10G	1-1/2"	ELECTRIC UNIT HEATER			5000	2	60	5		6					14266			
			5000					7	●	8	3	100	14266			PUMP CONTROLLER WELL GPW 1	2"	3#2, 1#8G
2#12, 1#12G	3/4"	EXHAUST FAN		500		1	20	9	●	10				14266				
2#12, 1#12G	3/4"	DEMUMIDIFIER			1500	1	20	11	●	12					14266			
2#12, 1#12G	3/4"	INSTRUMENTS (CA, FM-1)	42			1	20	13	●	14	3	100	14266			PUMP CONTROLLER WELL GPW 2	2"	3#2, 1#8G
		SPARE				1	20	15	●	16				14266				
		SPARE				1	20	17		18	1	20				SPARE		
		SPACE						19	●	20						SPACE		
		SPACE						21	●	22						SPACE		
		SPACE						23		24						SPACE		
		TOTAL 1	5762	860	6500					TOTAL 2			29078	28556	28532			
		TOTAL 2	29078	28556	28532													
		TOTAL 1 + 2	34840	29416	35032													
		CONN. LOAD TOTAL	99288															
		AMPERES	119															

MAIN BREAKER	200A/3P	MAIN LUGS	N/A
FEEDER ENTRANCE	BOTTOM	ENCLOSURE TYPE	NEMA 3R
FEEDER SIZE	SEE-ONE-LINE	ACCESSORIES	
SOURCE	UTILITY METER		WITH HINGED COVER AND DOOR IN DOOR CONSTRUCTION
PANEL TYPE	BOLT-ON		

SEE PROCESS DRAWINGS FOR CONTROL WIRING REQUIREMENTS.



CONTROL BUILDING ONE-LINE DIAGRAM

NO SCALE

FOR CONSTRUCTION

DuBois & King inc.

www.dubois-king.com

STATE OF NEW HAMPSHIRE – WILBUR LYNN HORTON JR. No. 13801 LICENSED PROFESSIONAL ENGINEER

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

CLIENT NAME
TOWN OF LISBON
46 SCHOOL STREET
LISBON, NH 03585
(603) 838-6376

PROJECT NAME
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BISHOP ROAD & VALLEYVIEW DRIVE
LISBON, NH

SHEET TITLE
ELECTRICAL ONE-LINE DIAGRAM POWER PLAN AND SCHEDULES

D&K PROJECT #	PROJ. ENG.
530379	CFA
DRAWN BY: EJD	CHECKED BY: WHH

DATE
JANUARY 2025

SHEET NUMBER
E2

SHEET: 26 of XX

N

PANEL No. PP2

BUS	200 Ampere
PANEL RATING	22 KAIC
SUPPLY VOLTAGE	208Y/120V, 3Ø
SERVICE	4-WIRE WITH GROUND BUS

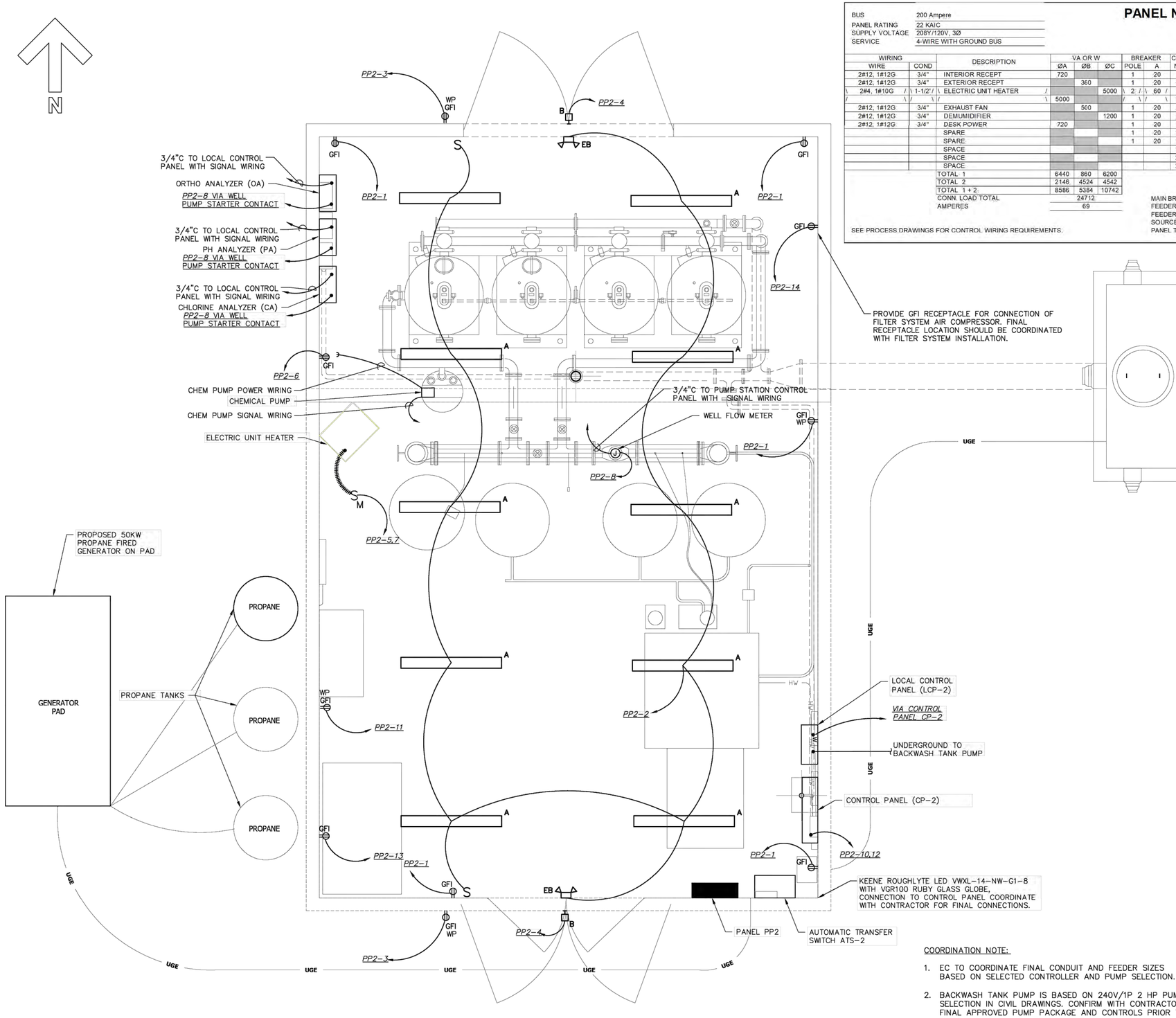
LOCATION	CHEMICAL FEED BUILDING
MOUNTING	SURFACE
DRAWING No.	E3

WIRING WIRE	WIRING COND	DESCRIPTION	VA OR W ØA	VA OR W ØB	VA OR W ØC	BREAKER POLE	BREAKER A	CKT. NO	BUS CONN	CKT. NO	BREAKER POLE	BREAKER A	VA OR W ØA	VA OR W ØB	VA OR W ØC	DESCRIPTION	WIRING COND	WIRING WIRE
2#12, 1#12G	3/4"	INTERIOR RECEPT	720			1	20	1	●	2	1	20	546			INTERIOR LIGHTS	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EXTERIOR RECEPT		360		1	20	3	●	4	1	20		24		EXTERIOR LIGHTS	3/4"	2#12, 1#12G
2#4, 1#10G	1-1/2"	ELECTRIC UNIT HEATER			5000	2	60	5	●	6	1	20			42	CHEM FEED PUMP (PM-1)	3/4"	2#12, 1#12G
			5000					7	●	8	1	20	300			INSTRUMENTS (CA, FM-1)	3/4"	2#12, 1#12G
2#12, 1#12G	3/4"	EXHAUST FAN		500		1	20	9	●	10	2	50		4500		BACKWASH PUMP CONTROLLER	1-1/2"	3#6, 1#10G
2#12, 1#12G	3/4"	DEMUMIDIFIER			1200	1	20	11	●	12					4500			
2#12, 1#12G	3/4"	DESK POWER	720			1	20	13	●	14	1	20	1300			FILTER SYSTEM AIR COMPRESSOR	3/4"	2#12, 1#12G
		SPARE				1	20	15	●	16	1	20				SPARE		
		SPARE				1	20	17	●	18	1	20				SPARE		
		SPACE						19	●	20						SPACE		
		SPACE						21	●	22						SPACE		
		SPACE						23	●	24						SPACE		
		TOTAL 1	6440	860	6200					TOTAL 2			2146	4524	4542			
		TOTAL 2	2146	4524	4542													
		TOTAL 1 + 2	8586	5384	10742													
		CONN. LOAD TOTAL	24712															
		AMPERES	69															

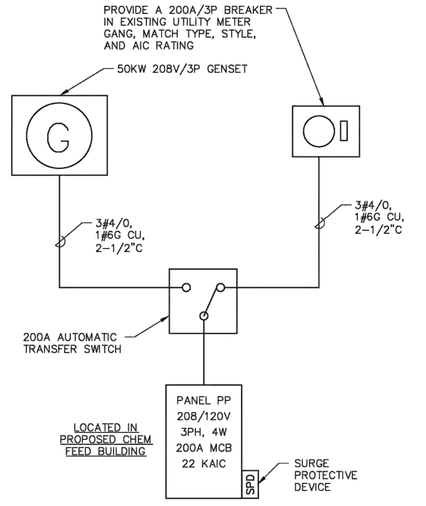
SEE PROCESS DRAWINGS FOR CONTROL WIRING REQUIREMENTS.

MAIN BREAKER	200A/3P
FEEDER ENTRANCE	BOTTOM
FEEDER SIZE	SEE ONE-LINE
SOURCE	UTILITY METER
PANEL TYPE	BOLT-ON

MAIN LUGS	N/A
ENCLOSURE TYPE	NEMA 3R
ACCESSORIES	WITH HINGED COVER AND DOOR IN DOOR CONSTRUCTION



1 CHEMICAL FEED BUILDING POWER AND LIGHTING PLAN
SCALE: 1/2" = 1'-0"



CHEM FEED BLDG ONE-LINE DIAGRAM
NO SCALE

COORDINATION NOTE:

1. EC TO COORDINATE FINAL CONDUIT AND FEEDER SIZES BASED ON SELECTED CONTROLLER AND PUMP SELECTION.
2. BACKWASH TANK PUMP IS BASED ON 240V/1P 2 HP PUMP SELECTION IN CIVIL DRAWINGS. CONFIRM WITH CONTRACTOR FINAL APPROVED PUMP PACKAGE AND CONTROLS PRIOR TO ROUGH IN. FINAL CONTROL AND PUMP POWER REQUIREMENTS MAY DIFFER FROM DESIGN.
3. EC TO COORDINATE WITH MECHANICAL CONTRACTOR TO AVOID ANY WATER LINES WITHIN THE ELECTRICAL EQUIPMENT WORKING SPACES PER ARTICLE 110.26.

FOR CONSTRUCTION

DuBois & King inc.
www.dubois-king.com

STATE OF NEW HAMPSHIRE — WILLIAM H HORTON JR. No. 13801 LICENSED PROFESSIONAL ENGINEER

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

CLIENT NAME
TOWN OF LISBON
46 SCHOOL STREET
LISBON, NH 03585
(603) 838-6376

PROJECT NAME
WATER SYSTEM IMPROVEMENTS PROJECT

PROJECT ADDRESS
BISHOP ROAD & VALLEYVIEW DRIVE
LISBON, NH

SHEET TITLE
ELECTRICAL SITE POWER PLAN AND DETAILS

D&K PROJECT #	PROJ. ENG.
530379	CFA
DRAWN BY	CHECKED BY
EJD	WHH

DATE
JANUARY 2025

SHEET NUMBER
E3

SHEET: 27 of XX

GENERAL NOTES:

1. THE CONTRACTOR SHALL DESIGN FABRICATE AND INSTALL THE PLC/VFD PANEL PER PANEL SPECIFICATIONS. CONTRACTOR SHALL SIZE , FURNISHED AND INSTALLED CABLE / CONDUIT FOR ALL INSTRUMENTATION AND FIELD DEVICES AND ROUTE TO THE PLC/VFD PANEL. REFER TO I/O LIST AND NOTES #2 THROUGH #6 FOR ADDITION REQUIREMENTS.

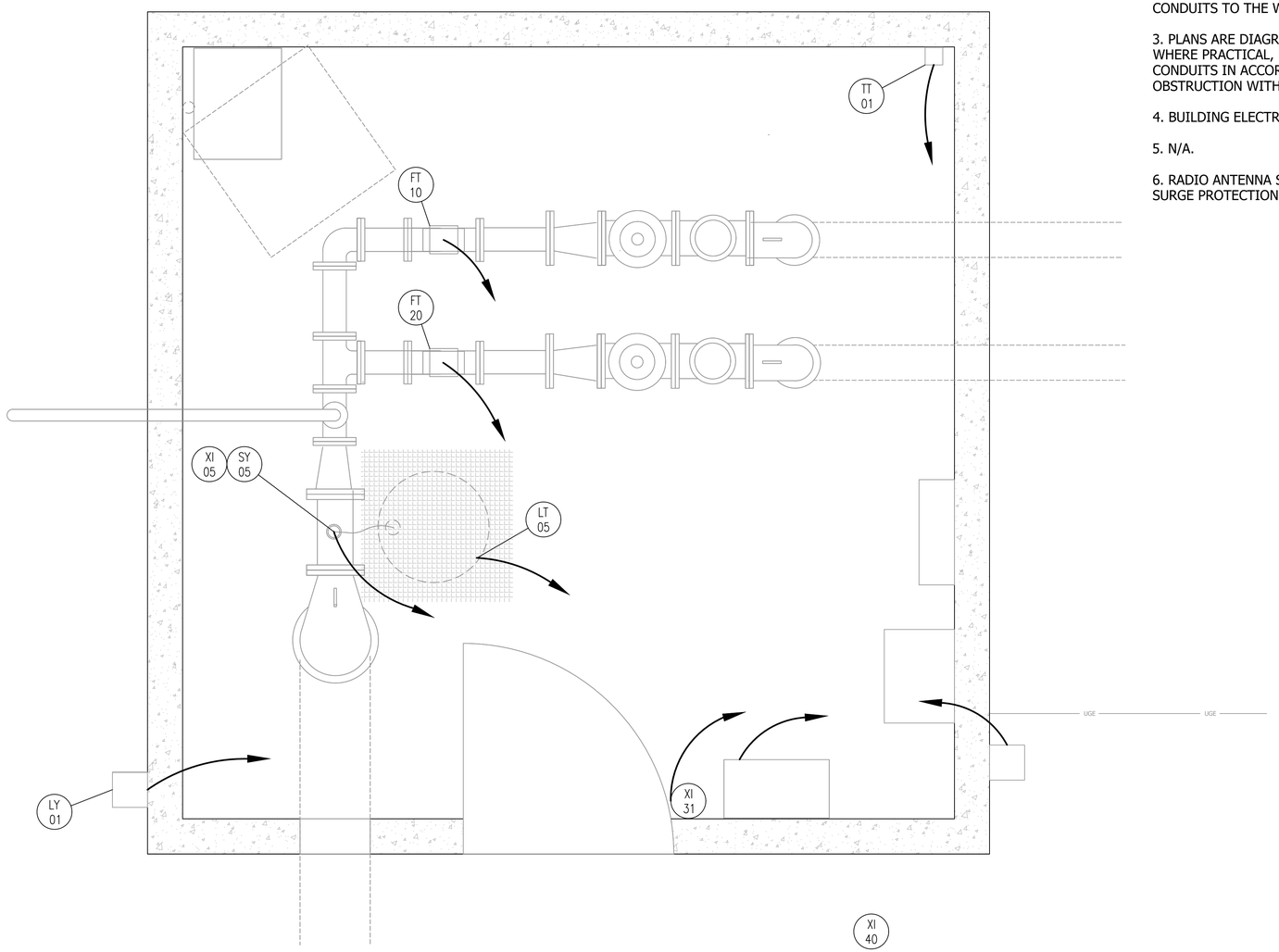
2. CONTRACTOR TO PROVIDE EQUIPMENT MAIN CONDUIT AND INSTRUMENT BRANCH CONDUITS. ALL CABLE, CONDUITS, ELECTRICAL EQUIPMENT, AND RACEWAYS SHALL BE PROPERLY INSTALLED IN ACCORDANCE TO THE NATIONAL ELECTRICAL CODE AND MFR'S DOCUMENTATION. PROVIDE ALL MATERIAL, SUPPORTS, GUA BOXES TO FACILITATE INSTRUMENTATION WIRING. PROPER WIRING METHODS AND TECHNIQUES ARE REQUIRED. FURNISH AND INSTALL CONDUIT SEAL ON ALL CONDUITS TO THE WET WELLS AND WHERE REQUIRED BY NEC.

3. PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL FIELD DETERMINE OPTIMUM ROUTING OF CONDUITS TO FIELD DEVICES. WHERE PRACTICAL, HOME RUNS OF SAME CONTROL TYPE WITH SAME DESTINATION SHALL BE COMBINED INTO COMMON CONDUITS IN ACCORDANCE WITH NEC. CONDUIT AND INSTRUMENT TUBING SHALL NOT CREATE A TRIP HAZARD OR OBSTRUCTION WITH OPERATION OR MAINTENANCE.

4. BUILDING ELECTRICAL EQUIPMENT MUST BE COORDINATED WITH PLUMBING TO AVOID CODE VIOLATIONS.

5. N/A.

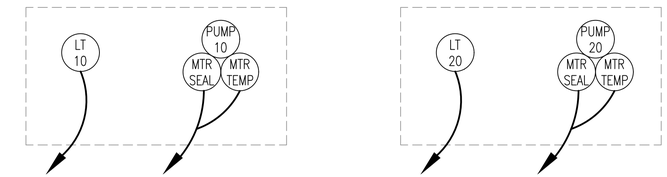
6. RADIO ANTENNA SHALL BE ON INSTALLED ON THE BUILDING EXTERIOR AND EXTEND PASS ROOF LINE. PROVIDE LIGHTING / SURGE PROTECTION.



PROPOSED CONTROL BUILDING LAYOUT

SCALE: 1" = 1'-0"

WET WELL #1 AND #2 ARE LOCATED APPROXIMATELY 900 FEET FROM THE PUMP CONTROL BUILDING. REFER TO CIVIL PLANS FOR ACTUAL LOCATION. CONTRACTOR SHALL SIZE ALL CABLE AND CONDUIT FOR DISTANCE AND VOLTAGE DROP. FURNISH AND INSTALL JUNCTION BOX AT WELL FOR TIE-IN CONNECTIONS FOR LEVEL TRANSMITTER (LT) AND PUMP MOTOR SEAL AND TEMP ALARM WIRING.



WET WELL #1 AND #2 (REF ONLY)

NTS

verdantas
613 BALTIMORE DRIVE, STE. 300
WILKES-BARRE, PA 18702-7903

FOR CONSTRUCTION

DATE OF PRINT
APRIL 17 2025
HORIZONS ENGINEERING

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

PROJECT #: 21215
DATE: APRIL 2025
MAP LOT (OR ARCHIVE) *
SURVEYED BY: HEI- DJG/NWS
ENGINEERED BY: MLB
DRAWN BY: LJM
CHECKED BY: CFC

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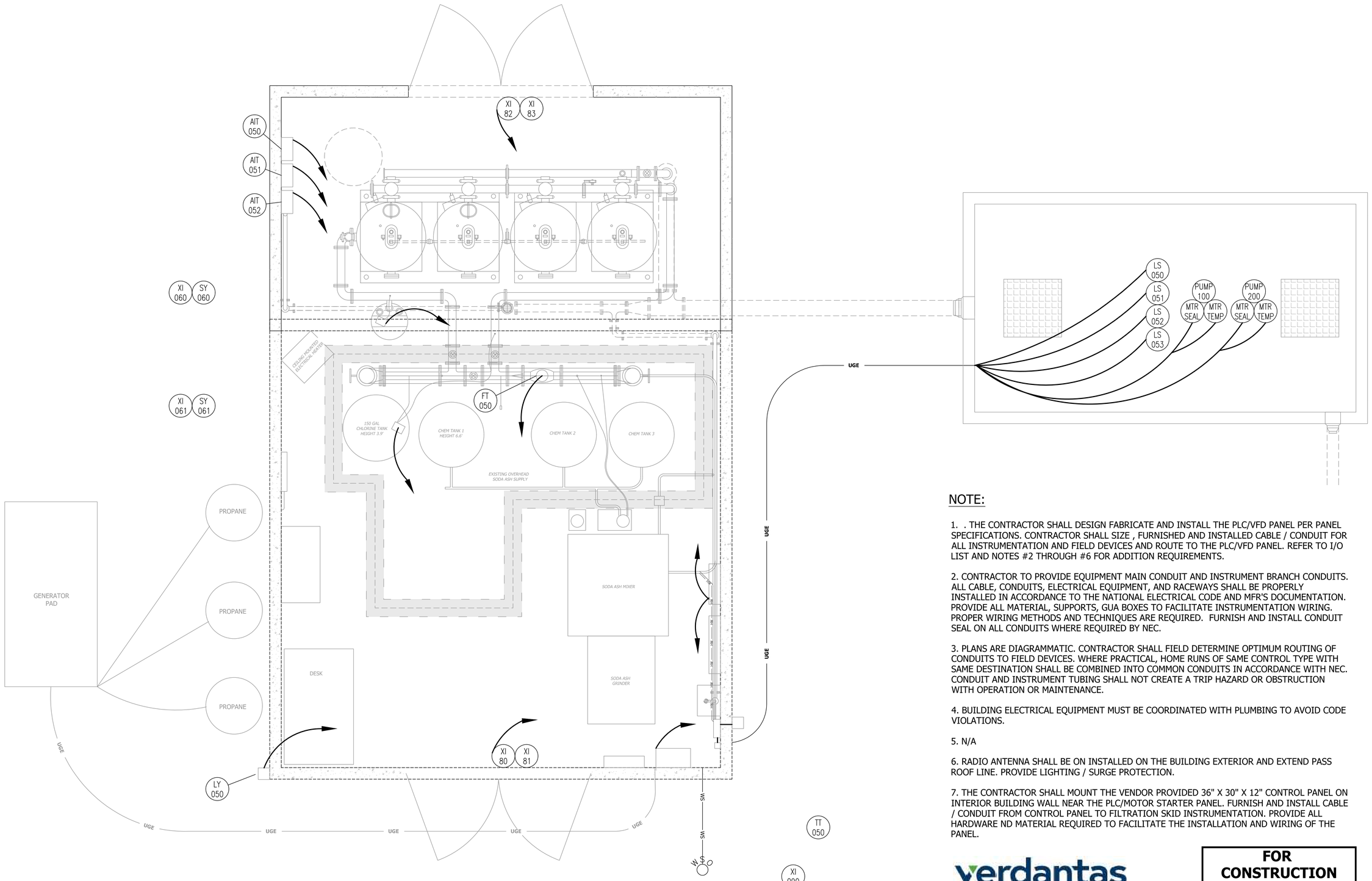
CONTRACT #1 WATER SYSTEM IMPROVEMENTS
USDA WEP, ARPA 1361010, DW SRF 1361010, DWGT-82
CONTROL BUILDING, WELLSITE,
CHEMICAL BUILDING ADDITION & MANGANESE TREATMENT
BISHOP ROAD & VALLEYVIEW DRIVE, LISBON, NEW HAMPSHIRE

CONTROL BUILDING INSTRUMENT PROCESS PLAN

SHEET E4



PROPOSED CHEMICAL FEED BUILDING LAYOUT

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

NOTE:

1. . THE CONTRACTOR SHALL DESIGN FABRICATE AND INSTALL THE PLC/VFD PANEL PER PANEL SPECIFICATIONS. CONTRACTOR SHALL SIZE , FURNISHED AND INSTALLED CABLE / CONDUIT FOR ALL INSTRUMENTATION AND FIELD DEVICES AND ROUTE TO THE PLC/VFD PANEL. REFER TO I/O LIST AND NOTES #2 THROUGH #6 FOR ADDITION REQUIREMENTS.

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4. BUILDING ELECTRICAL EQUIPMENT MUST BE COORDINATED WITH PLUMBING TO AVOID CODE VIOLATIONS.

5. N/A

6. RADIO ANTENNA SHALL BE ON INSTALLED ON THE BUILDING EXTERIOR AND EXTEND PASS ROOF LINE. PROVIDE LIGHTING / SURGE PROTECTION.

7. THE CONTRACTOR SHALL MOUNT THE VENDOR PROVIDED 36" X 30" X 12" CONTROL PANEL ON INTERIOR BUILDING WALL NEAR THE PLC/MOTOR STARTER PANEL. FURNISH AND INSTALL CABLE / CONDUIT FROM CONTROL PANEL TO FILTRATION SKID INSTRUMENTATION. PROVIDE ALL HARDWARE ND MATERIAL REQUIRED TO FACILITATE THE INSTALLATION AND WIRING OF THE PANEL.

verdantas
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CHEMICAL FEED BUILDING INSTRUMENT PROCESS PLAN

SHEET E5