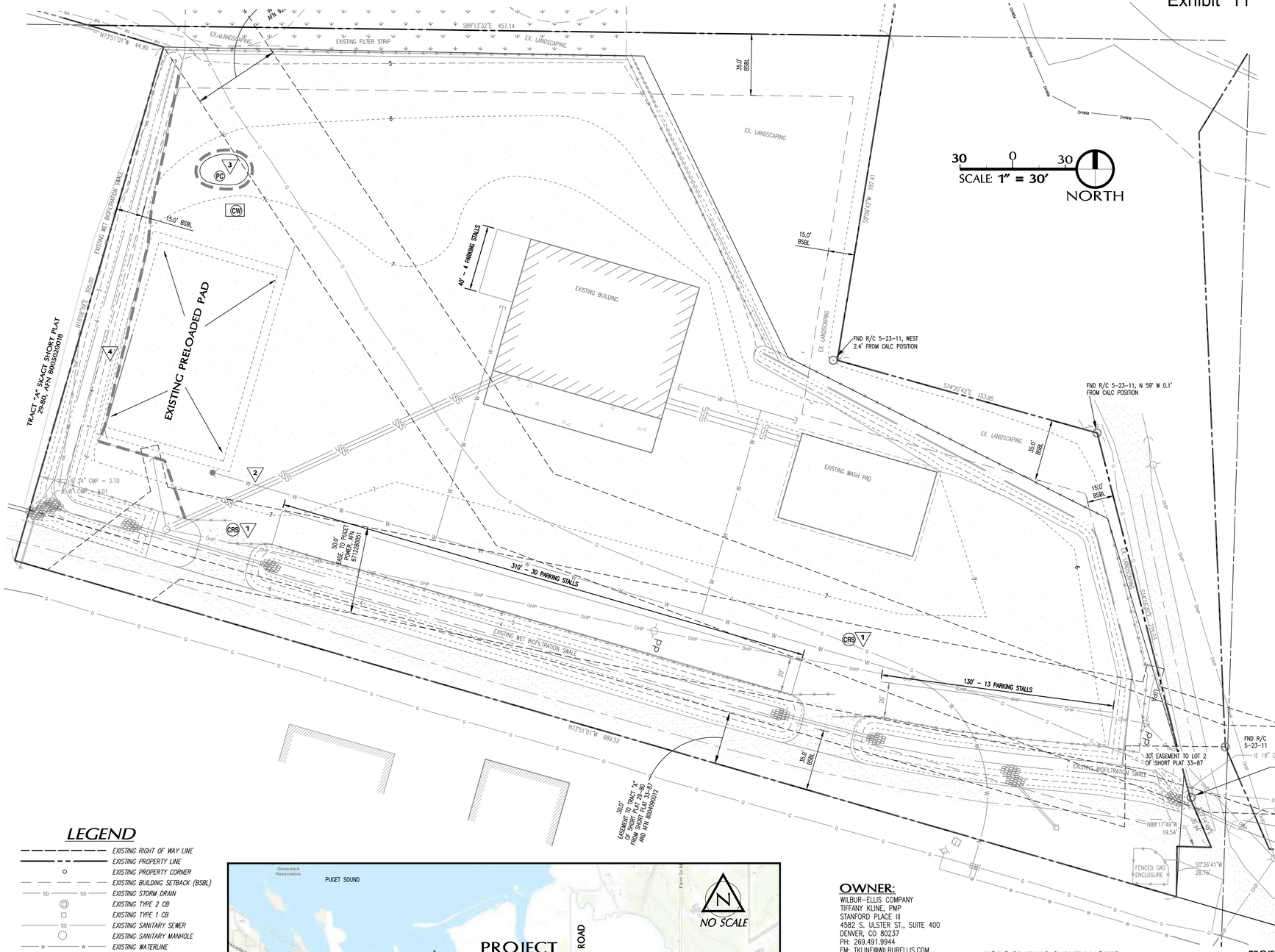
PORTION OF SE/4 SECTION 7, TWN 34 N, RGE 3 E, W.M, SKAGIT COUNTY, WASHINGTON

Exhibit "11"



SHEET INDEX

SHEET NUMBER	SHEET TITLE
CIVIL SITE AND GRADING PLAN	
C1.1	EXISTING CONDITIONS & TESC PLAN
C1.2	SITE PLAN
C1.3	SPECIFICATIONS & DETAILS
LANDSCAPE PLANS	
L-1	LANDSCAPE PLAN AND DETAILS
STRUCTURAL, PLUMBING & ELECTRICAL PLANS	
CVR	COVER SHEET
C001	SITE UTILITY PLAN
S101	DIKE AND LOADOUT PLAN
S102	CONTAINMENT PLANS AND CALCULATIONS
S201	STRUCTURAL DETAILS
S202	STRUCTURAL DETAILS
S203	EQUIPMENT SHED PLAN AND DETAILS
S204	EQUIPMENT SHED ELEVATIONS
S301	SPECIFICATIONS
S302	SPECIFICATIONS
P101	PLUMBING PLANS
P102	PROCESS PLUMBING PLANS
P201	PROCESS PLUMBING DETAILS
P202	PROCESS PLUMBING DETAILS
P203	12 PRODUCT LOADOUT SKID REFERENCE DRAWING
P204	MICRO LOADOUT SKID REFERENCE DRAWING
P205	TOTE RACK DETAILS
P301	PROCESS PLUMBING 3D VIEW
E101	ELECTRICAL PLANS
E201	ELECTRICAL SCHEDULES
E301	SPECIFICATIONS

CONSTRUCTION NOTES (TN #)

1. CONTRACTOR TO UTILIZE EXISTING ACCESS POINTS FOR CONSTRUCTION ACCESS. CONSTRUCTION ENTRANCE SHOULD NOT BE REQUIRED DUE TO EXISTING GRAVELLED ACCESS AND EXISTING GRAVEL PAD ON SITE.

2. CONTRACTOR TO PROTECT AND RETAIN ALL UTILITIES TO REMAIN IN SERVICE. DAMAGE TO EXISTING UTILITY SERVICES OR LINES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

3. STRAW WATTLES TO BE INSTALLED AT BASE OF STOCKPILES WHEN PLASTIC COVERING IS UTILIZED, TO PROMOTE A DISPERSED FLOW AND PREVENT EROSION.

4. IF DAMAGE IS DONE TO EXISTING BIOFILTRATION SWALE SIDE SLOPE, CONTRACTOR SHALL REAPPLY TOPSOIL AND HYDROSEED.

TESC PLAN LEGEND

SYMBOL	DESCRIPTION
CRS	CONSTRUCTION ROAD STABILIZATION BMP C105 – WSDOT STD. PLAN I-80.10.-02
	SILT FENCE, STRAW WATTLES, OR OTHER SILTATION CONTROL BMP C233 OR C235, WSDOT STD. PLANS I-30.17-00, I30.30-01
CW	CONCRETE WASHOUT, BMP C151
PC	PLASTIC COVERING, BMP C123
DC	DUST CONTROL, BMP C140
EG	EARLY GRAVEL BASE, BMP C107

LEGEND

- EXISTING RIGHT OF WAY LINE
- EXISTING PROPERTY LINE
- EXISTING PROPERTY CORNER
- EXISTING BUILDING SETBACK (BSBL)
- SD — SD — EXISTING STORM DRAIN
- EXISTING TYPE 2 CB
- EXISTING TYPE 1 CB
- SS — EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- W — W — EXISTING WATERLINE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- G — EXISTING GAS LINE
- P — EXISTING POWERLINE
- EXISTING FENCELINE
- EXISTING EDGE OF ASPHALT
- EXISTING CURB & GUTTER
- EXISTING CONCRETE
- EXISTING ASPHALT
- EXISTING GRAVEL
- 29 — EXISTING CONTOUR
- 186.81 — EXISTING GRADE ELEVATION
- PROPOSED INTEGRAL CURB
- PROPOSED CONCRETE
- REGRADED GRAVEL
- PROPOSED DISPERSION PAD
- 186.81 — FINISHED GRADE ELEVATION
- 29 — PROPOSED CONTOUR
- SD — PROPOSED STORM LINE
- PERF — PROPOSED PERFORATED STORM



VICINITY MAP

OWNER:

WILBUR-ELLIS COMPANY
TIFFANY KLINE, PMP
STANFORD PLACE III
4582 S. ULSTER ST., SUITE 400
DENVER, CO 80237
PH: 269.491.9944
EM: TKLINE@WILBURELLIS.COM

ENGINEER/SURVEYOR:

SOUND DEVELOPMENT GROUP, LLC
PAT SEVERIN/JAY STANDISH
1111 CLEVELAND AVENUE, SUITE 202
MOUNT VERNON, WA 98273
PH: 360.404.2010
EM: pat@sdg-llc.com/jay@sdg-llc.com

ENGINEER:

DESIGN ASSOCIATES
APRIL HOCK, P.E.
214 E. 1ST STREET
MCCOOK, NE 69001
PHONE: 308.345.2370 X206
EMAIL: APRIL@DESIGNEA.COM

LANDSCAPE ARCHITECT:

ECCOSDESIGN
ATTN: PATRIK DYLAN
MOUNT VERNON, WA 99273
PHONE: 360.419.7400
EMAIL: ECCOSDESIGN@GMAIL.COM

TOPOGRAPHIC SURVEY NOTES

1. THE VERTICAL DATUM FOR THIS PROJECT IS NAVD 88
2. UTILITY INFORMATION SHOWN HEREON IS APPROXIMATE. CALL 1-800-424-5555 TO HAVE UTILITIES MARKED BEFORE GROUND DISTURBING ACTIVITIES.

SITE INFORMATION

PARCEL NUMBER: P21188
ZONING: AG-NRL
SITE ADDRESS: 13586 BAYVIEW EDISON ROAD
SITE AREA: 4.21 ACRES
PROJECT AREA: 0.27 ACRES
FLOOD ZONE: A-7 PER COMMUNITY PANEL 530151 0250 C, 01/03/195

ASSESSOR LEGAL DESCRIPTION

PORTION OF TRACT 2 S/P #33-87 REC AF#8710300035 BEING PTN GOVERNMENT LOT 11, SECTION 7, TOWNSHIP 34 NORTH, RANGE 3 EAST, W.M.

SURFACE AREAS:

REPLACED IMPERVIOUS AREA: 11,820 SF – 0.27 ACRES

PROJECT AREAS:

PROJECT DISTURBANCE AREAS: NO NATIVE SOILS TO BE DISTURBED*
TOTAL REPLACED HARD SURFACE AREA: 11,820 SF – 0.271 AC
*(THE PROJECT AREA WAS ORIGINALLY EXCAVATED TO APPROXIMATE ELEVATION 4. EXISTING ELEVATION IS APPROXIMATELY 7. ONLY THE EXISTING GRAVEL BASE WILL BE DISTURBED.)

QUANTITIES:

QUANTITIES DERIVED FROM AUTOCAD CIVIL 3D 2026, AND REFLECT IN PLACE QUANTITIES. CONTRACTOR SHALL VERIFY QUANTITIES FOR CONSTRUCTION.

CUT: 1,000 CY
FILL: 1,125 CY

VERTICAL DATUM AND BENCHMARK

VERTICAL DATUM NAVD 88'
PROJECT BENCHMARK IS THE TOP OF REBAR NEAR THE MOST SOUTHEASTERLY POLE GUY AS SHOWN HEREON, ELEVATION = 5.91 NAVD '88.

Sound Development Group
ENGINEERING, SURVEYING & LAND DEVELOPMENT SERVICES
P.O. Box 1705 • 1111 Cleveland Avenue, Suite 202
Mount Vernon, WA 98273 Tel: 360-404-2010

SHEET REVISIONS:

NO	DATE	DESCRIPTION	APPROVED
1	11.10.25	TANK FARM CIVILS	T.ZEMPEL/P.SEVERIN
2	03.26.26	COUNTY REVISIONS	T.ZEMPEL/P.SEVERIN

CALL 48 HOURS BEFORE YOU DIG 1.800.424.5555

PROJECT:
TANK FARM SITE PLAN
FOR
WILBUR-ELLIS COMPANY

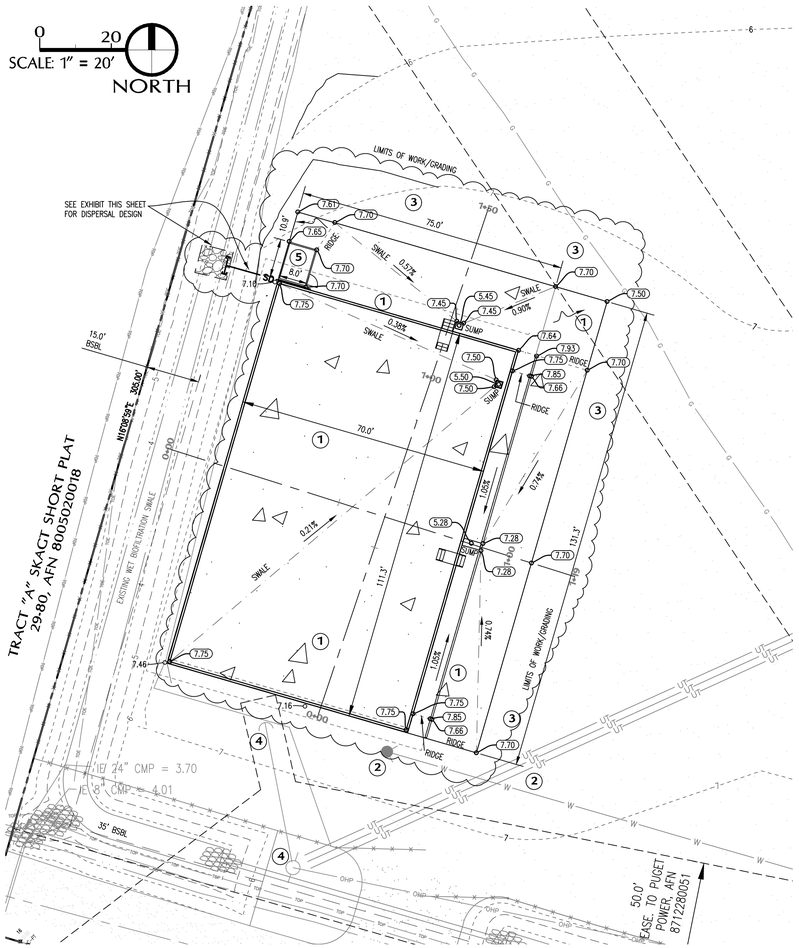
SHEET DESCRIPTION:
EXISTING CONDITIONS, EXISTING PARKING AND TESC PLAN

PATRICK L. SEVERIN
STATE OF WASHINGTON
32226
REGISTERED
PROFESSIONAL ENGINEER

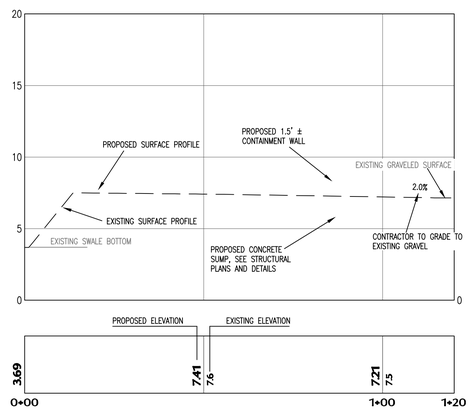
4/18/2026

SCALE:	AS NOTED
DRAWN BY:	T.ZEMPEL
DESIGNED BY:	T.ZEMPEL
DATE:	03.26.2026
JOB NUMBER:	25046
DWG NAME:	25046 PLN.DWG
SHEET NUMBER:	C1.1

PORTION OF SE/4 SECTION 7, TWN 34 N, RGE 3 E, W.M, SKAGIT COUNTY, WASHINGTON

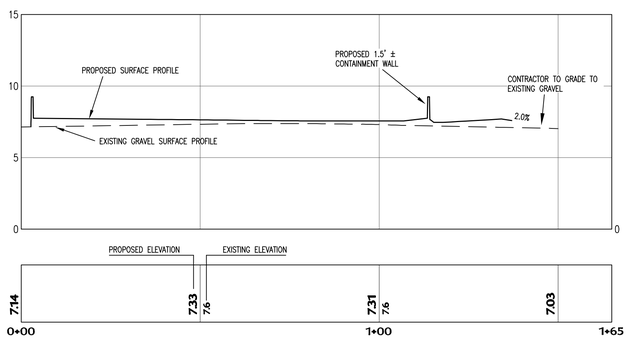


LIQUID FERTILIZER TANK FARM PLAN



WEST-EAST CROSS SECTION

SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 5'



SOUTH-NORTH CROSS SECTION

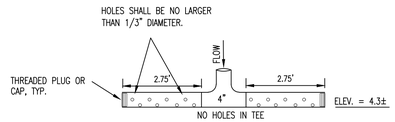
SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 5'

UTILITY NOTES

1. ALL NECESSARY POWER LINES, TELEPHONE WIRES, TELEVISION CABLES, FIRE ALARM SYSTEMS AND OTHER COMMUNICATION WIRES, CABLES OR LINES SHALL BE PLACED UNDERGROUND EITHER BY DIRECT BURIAL OR BY MEANS OF CONDUIT OR DUCTS OUTSIDE OF TANK AREA FOOTPRINT.

SITE NOTES:

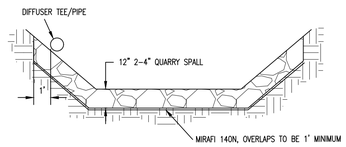
1. ALL CONCRETE WORK AND SECTIONS SHALL BE PER THE DETAILS PROVIDED BY THE STRUCTURAL ENGINEER, SHEET S201 AND S202.
2. CONTRACTOR TO POTHOLE UTILITY LOCATIONS TO VERIFY LOCATION AND ELEVATION. NOTIFY CIVIL ENGINEER IMMEDIATELY IF THEY DIFFER THAN SHOWN ON THIS PLANS.
3. CONTRACTOR TO UTILIZE EXCAVATED GRAVEL TOP COURSE TO GRADE FROM NEW CONCRETE TO EXISTING GRAVEL PAD.
4. CONTRACTOR TO COORDINATE WITH PSE PRIOR TO DISTURBANCE IN THE VICINITY OF THE POWER POLE OR GUY.
5. PROPOSED EQUIPMENT SHED.



1. HDPE PIPE AND WELDED TEE TO BE FIRMLY RETAINED WITH STAKES & STAINLESS STEEL STRAPPING OR OTHER RETENTION, APPROVED BY ENGINEER
2. ALL PIPE AND JOINTS SHALL BE WELDED HDPE
3. SEE DETAIL BELOW FOR HOLE SPACING.

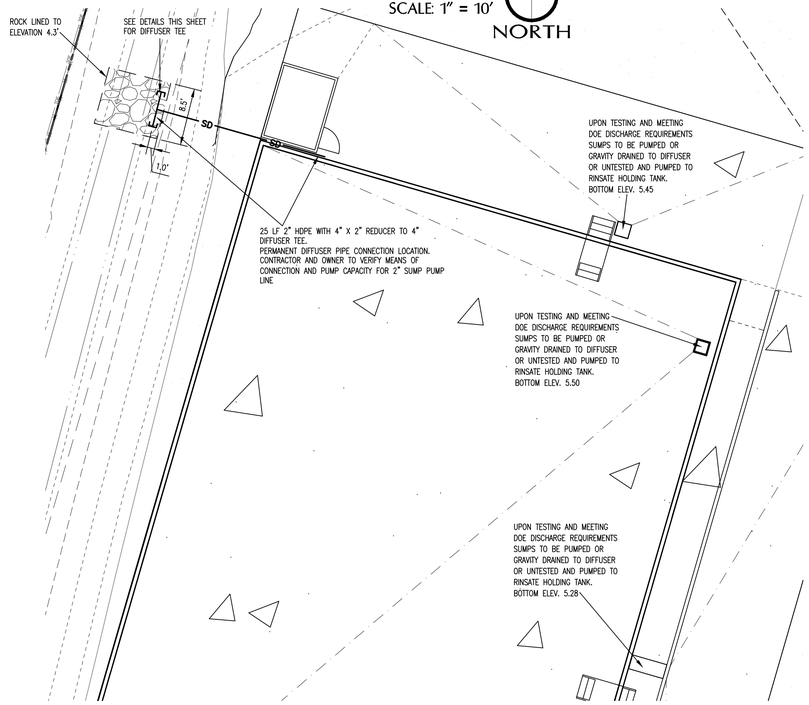
ENERGY DIFFUSER DETAIL (A/5)

N.T.S.



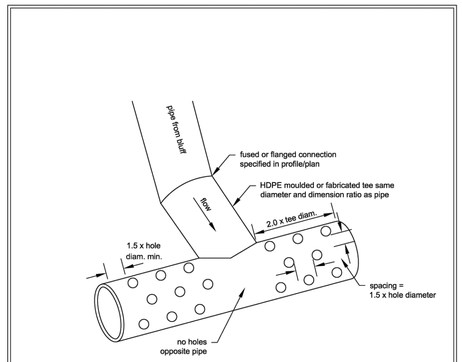
SWALE ARMORING DETAIL (A/5)

N.T.S.



STORMWATER DISCHARGE/DISPERSION DETAIL

Figure V-1.11: Diffuser TEE (an example of energy dissipating end feature)



Drill holes in front half of tee only.
Hole diameter (inches) = tee diameter (inches) divided by 6
(ex. 6 inch tee = 1 inch holes
18 inch tee = 3 inch holes)

NOT TO SCALE

DEPARTMENT OF ECOLOGY
State of Washington

Diffuser TEE
(an example of energy dissipating end feature)

Revised June 2016

Diffuser Tee

Job 25046

Discharge will be controlled by pump -89.76 gpm MAX required				
Assumption: pump operation range:			7 psi	10 psi
Max flow to utilize diffuser tee:		0.2 cfs max		89.76 gal max
Size of discharge pipe:		4 in		
Minimum Length of Perf Pipe		22 in		
Length w/ Safety Factor	3	66 in		5.50 ft
DOE required Hole size:		0.67 in		
Hole Area:		0.002 sf		
Hole Spacing:		1.00		
Flow rate Check:		$Q = C_d * A \times (sqrt)2gh$		
Assume 80 gpm				
C_d =	0.62			
Perforated length:	5.50 ft			
Rows of holes:	2			
Number of holes:	14			
Max Flow thru holes:	0.7 cfs		314.4 gpm	

Dissipating Pad (WSDOT Hydraulics Manual M23-03.11)

V = Q/A	
Width at diffuser tee:	8.50 ft
Depth of rock:	12 inches
Length of rock pad:	5 ft
Velocity max for diffuser:	**5.7** fps
Design Velocity :	**5.7** fps

Sound Development Group
ENGINEERING, SURVEYING & LAND DEVELOPMENT SERVICES
P.O. Box 1705 • 1111 Cleveland Avenue, Suite 202
Mount Vernon, WA 98273 Tel: 360-404-2010

SHEET REVISIONS:

NO	DATE	DESCRIPTION	APPROVED
1	11.10.25	TANK FARM CIVILS	T.ZEMPEL/P.SEVERIN
2	03.26.26	COUNTY REVISIONS	T.ZEMPEL/P.SEVERIN

CALL 48 HOURS BEFORE YOU DIG 1.800.424.5555

PROJECT:

TANK FARM SITE PLAN FOR WILBUR-ELLIS COMPANY

SHEET DESCRIPTION:

SITE PLAN AND CROSS SECTIONS

PATRICK L. SEVERIN
STATE OF WASHINGTON
32226
REGISTERED
PROFESSIONAL ENGINEER

4/18/2026

SCALE:	AS NOTED
DRAWN BY:	T.ZEMPEL
DESIGNED BY:	T.ZEMPEL
DATE:	04.18.2026
JOB NUMBER:	25046
DWG NAME:	25046 PLN.DWG
SHEET NUMBER:	C1.2

PORTION OF SE/4 SECTION 7, TWN 34 N, RGE 3 E, W.M., SKAGIT COUNTY, WASHINGTON

ESC-1 STANDARD ESC NOTES

APPROVAL OF THIS EROSION AND SEDIMENT CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).

1. AS DIRECTED BY PUBLIC WORKS DIRECTOR PRIOR TO COMMENCING CONSTRUCTION, ALL CRITICAL AREAS, INCLUDING WETLAND BUFFERS, STREAM CORRIDOR, LANDFILL AREAS, AND STEEP SLOPES SHALL BE CONTINUOUSLY DEMARCATED IN THE FIELD USING FLAGGING TAPE OR FENCING.
2. EROSION CONTROL METHODS AND MATERIALS SHALL MEET REQUIREMENTS OF SECTION 8-01 OF THE APWA/WASHINGTON STATE DEPARTMENT OF TRANSPORTATION 2025 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, AND REQUIREMENTS SET FORTH IN VOLUME II OF THE "STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN (THE TECHNICAL MANUAL)", BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, CURRENT EDITION. THE CONTRACTOR SHALL FOLLOW RECOMMENDATIONS MADE BY SUPPLIERS AND MANUFACTURERS OF MATERIALS AND EQUIPMENT USED.
3. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS, AND MUST BE INSTALLED AND IN OPERATION PRIOR TO ANY GRADING OR LAND CLEARING. WHEREVER POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL.
4. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED (E.G., ADDITIONAL SUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.) AS NEEDED FOR UNEXPECTED STORM EVENTS. ADDITIONALLY, MORE ESC FACILITIES MAY BE REQUIRED TO ENSURE COMPLETE SILTATION CONTROL. THEREFORE, DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES OVER AND ABOVE THE MINIMUM REQUIREMENTS AS MAY BE NEEDED.
5. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE PERMANENT FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION OR DISPERSION SYSTEM, THE FACILITY SHALL NOT BE USED AS A TEMPORARY SETTLING BASIN. NO UNDERGROUND DETENTION TANK, DETENTION VAULT, OR SYSTEM, WHICH BACKS UNDER OR INTO A POND, SHALL BE USED AS A TEMPORARY SETTLING BASIN.
6. WHERE SEEDING FOR TEMPORARY EROSION CONTROL IS REQUIRED, FAST GERMINATING GRASSES SHALL BE APPLIED AT AN APPROPRIATE RATE (EXAMPLE: ANNUAL OR PERENNIAL RYE APPLIED AT APPROXIMATELY 80 POUNDS PER ACRE).
7. WHERE STRAW MULCH IS REQUIRED FOR TEMPORARY EROSION CONTROL, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF TWO (2) INCHES.
8. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH SKAGIT COUNTY STANDARDS AND SPECIFICATIONS.
9. THE ESC FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS ON THE APPROVED PLANS. LOCATIONS MAY BE MOVED TO SUIT FIELD CONDITIONS, SUBJECT TO APPROVAL BY THE SKAGIT COUNTY PUBLIC WORKS DIRECTOR AND SKAGIT COUNTY INSPECTOR.
10. A COPY OF THE APPROVED EROSION CONTROL PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
11. ALL LOTS ADJOINING OR HAVING ANY NATIVE GROWTH PROTECTION EASEMENTS (NGPE) SHALL HAVE A FOUR (4) FOOT HIGH TEMPORARY CONSTRUCTION FENCE (CYCLONE OR PLASTIC MESH) SEPARATING THE LOT (OR BUILDABLE PORTIONS OF THE LOT) FROM THE AREA RESTRICTED BY THE NGPE AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR CLEARING AND REMAIN IN PLACE UNTIL A DWELLING IS CONSTRUCTED AND OWNERSHIP TRANSFERRED TO THE FIRST OWNER/OCCUPANT.
12. A CLEARING CONTROL FENCE SHALL BE INSTALLED AT THE DRIP LINE OF TREES TO BE SAVED WHEREVER THE TREE CANOPIES EXTEND INTO THE AREA TO BE CLEARED. ON-SITE SUPERVISION SHALL BE PROVIDED WHENEVER EQUIPMENT MUST OPERATE UNDER TREE CANOPIES, AND FENCING SHALL BE REPLACED WHEN NECCESARY. THE CLEARING CONTROL FENCE SHALL CONSIST OF A SINGLE STRAND OF WIRE ATTACHED ABOUT THREE (3) FEET HIGH TO WOOD LATH AT A TWELVE (12) FOOT MAXIMUM SPACING AND FLAGGED WITH SURVEY RIBBON AT FOUR (4) FOOT INTERVALS.
13. OFF-SITE STREETS MUST BE KEPT CLEAN AT ALL TIMES. IF DIRT IS DEPOSITED ON THE PUBLIC STREET SYSTEM, THE STREET SHALL BE IMMEDIATELY CLEANED WITH POWER SWEEPER OR OTHER EQUIPMENT. ALL VEHICLES SHALL LEAVE THE SITE BY WAY OF THE CONSTRUCTION ENTRANCE AND SHALL BE CLEANED OF ALL DIRT THAT WOULD BE DEPOSITED ON THE PUBLIC STREETS.
14. ANY CATCH BASINS COLLECTING RUNOFF FROM THE SITE, WHETHER THEY ARE ON OR OFF THE SITE, SHALL BE FITTED WITH A SILT SOCK DURING CONSTRUCTION.
15. THE WASHED GRAVEL BACKFILL ADJACENT TO THE FILTER FABRIC FENCE SHALL BE REPLACED AND THE FILTER FABRIC CLEANED IF IT IS NONFUNCTIONAL BY EXCESSIVE SILT ACCUMULATION AS DETERMINED BY SKAGIT COUNTY. ALSO, ALL INTERCEPTOR SWALES SHALL BE CLEANED IF SILT ACCUMULATION EXCEEDS ONE-QUARTER DEPTH.
16. ROCK FOR EROSION PROTECTION OF ROADWAY DITCHES, WHERE REQUIRED, MUST BE OF SOUND QUARRY ROCK, PLACED TO DEPTH OF ONE (1) FOOT AND MUST MEET THE FOLLOWING SPECIFICATIONS: 4" - 8" ROCK/40%-70% PASSING; 2"-4" ROCK/30%-40% PASSING; AND 1"-2" ROCK/10%-20% PASSING.
17. IF ANY PART (S) OF THE CLEARING LIMIT BOUNDARY OR TEMPORARY EROSION/SEDIMENTATION CONTROL PLAN IS/ARE DAMAGED, IT SHALL BE REPAIRED IMMEDIATELY.
18. ALL PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION AND RUNOFF.DO NOT FLUSH CONCRETE BY-PRODUCTS OR TRUCKS NEAR OR INTO THE STORM DRAINAGE SYSTEM. IF EXPOSED AGGREGATE IS FLUSHED INTO THE STORM SYSTEM, IT COULD MEAN RECLEANING THE ENTIRE DOWNSTREAM STORM SYSTEM, OR POSSIBLY RELAYING THE STORM LINE.
19. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
20. THE SITE CESCL'S NAME IS: ______________________,
24 HR. CONTACT NUMBER IS: ______________________.
21. THE APPLICANT'S NAME IS: ______________________,
24 HR. CONTACT NUMBER IS: ______________________.
22. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY A CONTINUOUS LENGTH OF SURVEY TAPE (OR FENCING, IF REQUIRED) PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.
23. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES DURING THE WET SEASON (OCT. 1 TO APRIL 30) AND OF THE MONTHLY REVIEWS DURING THE DRY SEASON (MAY 1 TO SEPT. 30).
24. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
25. ANY AREA NEEDING ESC MEASURES NOT REQUIRING IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN FIFTEEN (15) DAYS.
26. THE ESC FACILITIES ON ACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN FORTY-EIGHT (48) HOURS FOLLOWING A STORM EVENT.
27. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT -LADEN WATER INTO THE DOWNSTREAM SYSTEM.
28. OFFSITE STORMWATER AND/OR GROUNDWATER TO BE DIVERTED AWAY FROM SLOPES & DISTURBED AREAS WITH INTERCEPTOR DIKES, PIPES, OR SWALES. OFFSITE STORMWATER SHALL BE MANAGED DIFFERENTLY FROM STORMWATER GENERATED ONSITE.
29. EXCAVATED MATERIAL TO BE PLACED ON UPHILL SIDE OF TRENCH.
30. STABILIZED CONSTRUCTION ENTRANCES AND ROADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
31. ANY PERMANENT FLOW CONTROL FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION AS ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY.
32. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE COUNTY INSPECTOR. THE COUNTY INSPECTOR CAN REQUIRE SEEDING OF ADDITIONAL AREAS IN ORDER TO PROTECT SURFACE WATERS, ADJACENT PROPERTIES, OR DRAINAGE FACILITIES.

ESC-2 WET SEASON SPECIAL PROVISIONS
(OCTOBER 1 - APRIL 30)

1. THE ALLOWED TIME THAT A DISTURBED AREA CAN REMAIN UNWORKED WITHOUT COVER MEASURES IS REDUCED TO TWO DAYS, RATHER THEN SEVEN.
2. STOCKPILES AND STEEP CUT AND FILL SLOPES ARE TO BE PROTECTED IF UNWORKED FOR MORE THAN 12 HOURS.
3. COVER MATERIALS SUFFICIENT TO COVER ALL DISTURBED AREAS SHALL BE STOCKPILED ON SITE.
4. ALL AREAS THAT ARE TO BE UNWORKED DURING THE WET SEASON SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON.
5. MULCH IS REQUIRED TO PROTECT ALL SEEDED AREAS.
6. FIFTY LINEAR FEET OF SILT FENCE (AND THE NECESSARY STAKES) PER ACRE OF DISTURBANCE MUST BE STOCKPILED ON SITE.
7. CONSTRUCTION ROAD AND PARKING LOT STABILIZATION ARE REQUIRED FOR ALL SITES UNLESS THE SITE IS UNDERLAIN BY COARSE-GRAINED SOIL.
8. SEDIMENT RETENTION IS REQUIRED UNLESS NO OFFSITE DISCHARGE IS ANTICIPATED FOR THE SPECIFIC DESIGN FLOW.
9. SURFACE WATER CONTROLS ARE REQUIRED UNLESS NO OFFSITE DISCHARGE IS ANTICIPATED FOR THE SPECIFIED DESIGN FLOW.
10. PHASING AND MORE CONSERVATIVE BMP'S MUST BE EVALUATED FOR CONSTRUCTION ACTIVITY NEAR SURFACE WATERS.
11. ANY RUNOFF GENERATED BY DEWATERING SHALL BE TREATED THROUGH CONSTRUCTION OF A SEDIMENT TRAP WHEN THERE IS SUFFICIENT SPACE OR BY RELEASING THE WATER TO A WELL-VEGETATED, GENTLY SLOPING AREA. SINCE PUMPS ARE USED FOR DEWATERING, IT MAY BE POSSIBLE TO PUMP THE SEDIMENT-LADEN WATER WELL AWAY FROM THE SURFACE WATER SO THAT VEGETATION CAN BE MORE EFFECTIVELY UTILIZED FOR TREATMENT. A STRAW BALE FILTER SHALL BE PLACED AROUND THE DISCHARGE FROM THE DEWATERING PUMP. IF THERE IS NOT SPACE FOR A SEDIMENT TRAP OR 25 FEET OF SUITABLE VEGETATION, OTHER FILTRATION METHODS SHALL BE REQUIRED.
12. THE FREQUENCY OF MAINTENANCE REVIEW INCREASES FROM MONTHLY TO WEEKLY.
13. SOILS SHALL BE STABILIZED AT THE END OF THE SHIFT, BEFORE A HOLIDAY OR WEEKEND IF NEEDED, BASED ON THE WEATHER FORECAST.

MULCHING

MULCH MATERIAL	QUALITY STANDARDS	APPLICATION RATES
STRAW	AIR-DRIED: FREE FROM UNDESIRABLE SEED AND COARSE MATERIAL	2"-3" THICK; 2-3 BALES 2-3 BALES PER 1000 SQ. FT. OR 2-3 TONS PER ACRE.
WOOD FIBER CELLULOSE	NO GROWTH INHIBITING FACTORS	APPROX. 25-30 LBS. PER 1000 SQ. FT. OR 1000-1500 LBS PER ACRE
COMPOST	NO VISIBLE WATER OR DUST DURING HANDLING. MUST BE PURCHASED FROM SUPPLIER WITH A SOLID WASTE HANDLING PERMIT.	2" THICK MIN.; APPROX. 100 TONS PER ACRE (APPROX. 800 LBS PER YARD)
CHIPPED SITE VEGETATION	AVERAGE SIZE SHALL BE SEVERAL INCHES.	2" MINIMUM THICKNESS

NOTE: MULCHING TO BE UTILIZED AS REQUIRED TO PREVENT EROSION AS DIRECTED BY THE ENGINEER.

MULCHNG MAINTENANCE STANDARDS

1. THE THICKNESS OF THE COVER MUST BE MAINTAINED.
2. ANY AREAS THAT EXPERIENCE EROSION SHALL BE REMULCHED AND/OR PROTECTED WITH A NET OR BLANKET. IF THE EROSION PROBLEM IS DRAINAGE RELATED, THEN THE PROBLEM SHALL BE FIXED AND THE ERODED AREA REMULCHED.

SEEDING

SEED MIXES: THE SEED MIXES LISTED BELOW INCLUDE RECOMMENDED MIXES FOR TEMPORARY SEEDING. THESE MIXES, WITH THE EXCEPTION OF THE WETLAND MIX, SHALL BE APPLIED AT A RATE OF 110 LBS/ACRE. THIS RATE CAN BE REDUCED IF SOIL AMENDMENTS OR SLOW-RELEASE FERTILIZERS ARE USED.

TEMPORARY EROSION CONTROL SEED MIX	% WEIGHT	% PURITY	% GERMINATION
CHESINGS OR RED FESQUE FESTUCA RUBRA VAR. COMMUTATA OR FESTUCA RUBRA	40	98	90
ANNUAL OR PERENNIAL RYE LOLIUM MULTIFLORUM OR LOLIUM PERENN	40	98	90
REDTOP OR COLONIAL BENTGRASS AGROSTIS ALBA OR AGROSTIS TENUIS	10	92	85
WHITE DUTCH CLOVER TRIFOLIUM REPENS	10	98	90

BIOSWALE SEED MIX (MODIFIED BRIARGREEN, INC., HYDROSEEDING GUIDE WETLANDS SEED MIX)	% WEIGHT	% PURITY	% GERMINATION
TALL OR MEADOW FESCUE FESTUCA ARUNDINACEA OR FESTUCA ELATIOR	68	98	90
SEASIDE/CREEPING BENTGRASS AGROSTIS PALUSTRIS	10	98	85
MEADOW FOXTAIL ALEPOCURUS PRATENSIS	10	90	80
ALSIKE CLOVER TRIFOLIUM HYBRIDUM	6	98	90
REDTOP AGROSTIS ALBA	6	92	85

WETLANDS SEED MIX	% WEIGHT	% PURITY	% GERMINATION
RED FESCUE FESTUCA RUBRA	35	90	90
REDTOP AGROSTIS ALBA	35	92	85
MEADOW FOXTAIL ALEPOCURUS PRATENSIS	30	90	80

SEEDING MAINTENANCE STANDARDS

1. ANY SEEDED AREAS THAT FAIL TO ESTABLISH AT LEAST 80 PERCENT COVER WITHIN ONE MONTH SHALL BE RESEEDED. IF RESEEDING IS INEFFECTIVE, AN ALTERNATE METHOD, SUCH AS SODDING OR NETS/BLANKETS, SHALL BE USED. IF WINTER WEATHER PREVENTS ADEQUATE GRASS GROWTH, THIS TIME LIMIT MAY BE RELAXED.
2. AFTER ADEQUATE COVER IS ACHIEVED, ANY AREAS THAT EXPERIENCE EROSION SHALL BE RESEEDED AND PROTECTED BY MULCH.
3. SEEDED AREAS SHALL BE SUPPLIED WITH ADEQUATE MOISTURE, BUT NOT WATERED TO THE EXTENT THAT IT CAUSES RUNOFF.

ESC-4 FINAL SITE STABILIZATION NOTES

TO OBTAIN FINAL CONSTRUCTION APPROVAL, THE FOLLOWING CONDITIONS MUST BE MET:

1. ALL DISTURBED AREAS OF THE SITE SHALL BE VEGETATED OR OTHERWISE PERMANENTLY STABILIZED. AT A MINIMUM, DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITH A HIGH LIKELY HOOD THAT SUFFICIENT COVER WILL DEVELOP SHORTLY AFTER FINAL APPROVAL. MULCH WITHOUT SEEDING IS NOT ADEQUATE TO ALLOW FINAL APPROVAL OF THE PERMIT, EXCEPT FOR SMALL AREAS OF MULCH USED FOR LANDSCAPING. THE ONLY EXCEPTIONS TO THESE REQUIREMENTS ARE LOTS WITHIN A PLAT THAT ARE TO BE DEVELOPED UNDER AN APPROVED RESIDENTIAL PERMIT IMMEDIATELY FOLLOWING PLAT APPROVAL. IN THESE CASES, MULCH AND/OR TEMPORARY SEEDING ARE ADEQUATE FOR COVER.
2. STRUCTURAL MEASURES SUCH AS, BUT NOT LIMITED TO, SILT FENCES, PIPE SLOPES DRAINS, CONSTRUCTION ENTRANCES, STORM DRAIN INLET PROTECTION, AND SEDIMENT TRAPS AND PONDS SHALL BE REMOVED FROM THE SITE. MEASURES THAT WILL QUICKLY DECOMPOSE, SUCH AS BRUSH BARRIERS AND ORGANIC MULCHES, MAY BE LEFT IN PLACE. IN THE CASE OF SILT FENCES, IT MAY BE BEST TO REMOVE FENCES IN CONJUNCTION WITH THE SEEDING, SINCE IT MAY BE NECESSARY TO BRING MACHINERY BACK IN TO REMOVE THEM. THIS WILL RESULT IN DISTURBED SOILS THAT WILL AGAIN REQUIRE PROTECTION. THE DDES INSPECTOR MUST APPROVE AN APPLICANT'S PROPOSAL TO REMOVE FENCING PRIOR TO THE ESTABLISHMENT OF VEGETATION. IN SOME CASES, SUCH AS RESIDENTIAL BUILDING FOLLOWING PLAT DEVELOPMENT, IT MAY BE APPROPRIATE TO LEAVE SOME OR ALL ESC MEASURES FOR USE DURING SUBSEQUENT DEVELOPMENT. THIS SHALL BE DETERMINED ON A SITE-SPECIFIC BASIS.
3. ALL PERMANENT SURFACE WATER FACILITIES, INCLUDING CATCH BASINS, MANHOLES, PIPES, DITCHES, CHANNELS, R/D FACILITIES, AND WATER QUALITY FACILITIES, SHALL BE CLEANED. ANY OFFSITE CATCH BASIN THAT REQUIRED PROTECTION DURING CONSTRUCTION SHALL ALSO BE CLEANED.
4. IF ONLY THE INFRASTRUCTURE OF THE SITE HAS BEEN DEVELOPED (E.G. SUBDIVISIONS AND SHORT PLATS) WITH BUILDING CONSTRUCTION TO OCCUR UNDER A DIFFERENT PERMIT, THEN THE SENSITIVE AREA BUFFERS, SENSITIVE AREA TRACTS, OR SENSITIVE AREA SETBACK AREA SHALL BE CLEARLY MARKED AS DESCRIBED IN SECTION D.4.1 IN ORDER TO ALERT FUTURE BUYERS AND BUILDERS.

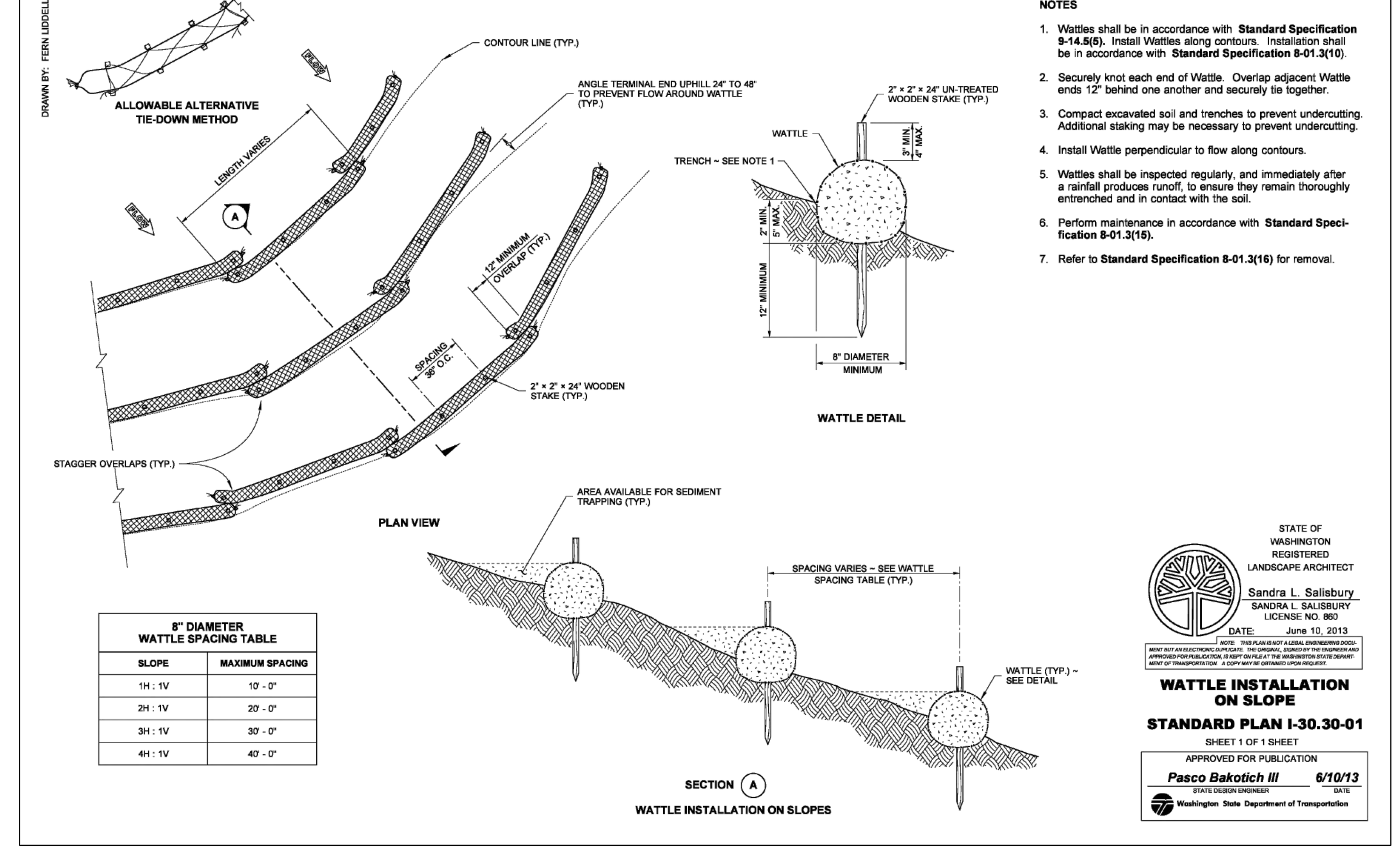
ESC-5 ROAD AND UTILITIES E.S.C. NOTES

PHASING THE PROJECT SO THAT THE SITE IS WORKED PROGRESSIVELY FROM END TO END, RATHER THAN CLEARING AND GRUBBING THE ENTIRE LENGTH OF THE PROJECT. THIS RESULTS IN SMALLER EXPOSED AREAS FOR SHORTER DURATION'S, THUS REDUCING THE EROSION RISK.

1. MULCHING AND VEGETATING CUT AND FILL SLOPES AS SOON AS THEY ARE GRADED. FREQUENTLY, THIS IS DONE AT THE END OF CONSTRUCTION WHEN PAVING OR UTILITY INSTALLATION IS COMPLETE. VEGETATING THESE AREAS AT THE START OF THE PROJECT STABILIZES THOSE AREAS MOST SUSCEPTIBLE TO EROSION.
2. PROTECTING ALL CATCH BASIN INLETS WITH CATCH BASIN INSERTS WHEN THESE DO NOT DRAIN TO PONDS OR TRAPS. THIS WILL NOT PROVIDE THE SAME LEVEL OF PROTECTION AS A SEDIMENT POND OR TRAP, BUT CAN REMOVE MOST OF THE SAND- SIZED MATERIAL ENTRAINED IN THE RUNOFF.
3. PHASING THE PROJECT SO THAT ALL CLEARING AND GRADING IN SENSITIVE AREA BUFFERS OCCURS IN THE DRY SEASON. THIS SUBSTANTIALLY REDUCES THE CHANCE OF EROSION AND ALLOWS FOR RAPID REVEGETATION IN THE LATE SUMMER AND EARLY FALL.
4. USING FLOCCULENT TO REDUCE THE TURBIDITY OF WATER RELEASED FROM SEDIMENT PONDS, WHEN APPROVED BY THE DEPARTMENT OF ECOLOGY.
5. HIRING A PRIVATE CONSULTANT WITH EXPERTISE IN ESC TO REVIEW AND MONITOR THE SITE.

6. GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE 2025 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION AS PREPARED BY WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND THE AMERICAN PUBLIC WORKS ASSOCIATION (WSDOT/APWA), HEREIN REFERRED TO AS THE "STANDARD SPECIFICATIONS". REFERENCES WILL BE MADE TO THE STANDARD SPECIFICATIONS MANUAL AND THE STANDARD PLANS BOOK.
2. EXISTING UTILITIES HAVE BEEN TAKEN FROM AVAILABLE FIELD AND OFFICE RECORDS. THE CONTRACTOR IS RESPONSIBLE FOR UTILIZING THE ONE-CALL UTILITY LOCATE SERVICE, 1-800-424-5555, A MINIMUM OF TWO WORKING DAYS PRIOR TO ANY CONSTRUCTION. DAMAGES TO THE EXISTING UTILITIES RESULTING FROM THIS CONSTRUCTION SHALL BE REPAIRED BY AND AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL VERIFY ANY POTENTIAL UTILITY CONFLICTS PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL MAKE DAILY EFFORTS TO KEEP THE SITE IN A NEAT AND ORDERLY CONDITION TO THE SATISFACTION OF THE OWNER, ENGINEER, AND SKAGIT COUNTY ENGINEERING DEPARTMENT. IF CONSTRUCTION OCCURS DURING RAINY WEATHER CONDITIONS, THEREBY CAUSING DEBRIS TO BE TRACKED ONTO THE EXISTING ASPHALT, THE CONTRACTOR SHALL CONSTRUCT A QUARRY SPALL ROADWAY 20-FEET WIDE BY 100-FEET LONG MINIMUM. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGES TO EXISTING IMPROVEMENTS RESULTING FROM THIS CONSTRUCTION.
4. DURING ALL PHASES OF CONSTRUCTION, THE CONTRACTOR SHALL SWEEP AND REMOVE ALL DEBRIS TRACKED ONTO THE EXISTING ROADS. FAILURE TO KEEP ROAD FREE FROM DEBRIS OFF EXISTING ROADWAY MAY CAUSE WORK STOPPAGE. THE CONTRACTOR SHALL ALSO WATER THE SITE (IF REQUIRED) TO REDUCE CONSTRUCTION DUST.
5. AT ALL TIMES, TRAFFIC LANES SHALL BE MAINTAINED ON EXISTING ROADS. TEMPORARY AND PARTIAL ROAD CLOSURE SHALL BE APPROVED BY SKAGIT COUNTY ENGINEERING, FIRE, AND POLICE DEPARTMENTS PRIOR TO CONSTRUCTION. DURING CONSTRUCTION WITHIN THE RIGHT-OF-WAYS, THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT FOR TRAFFIC CONTROL AND CONSTRUCTION WARNING/CONTROL SIGNS.
6. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS CONCERNING DISPOSAL OF MATERIALS. ALL ASPHALT, CONCRETE, BRICK, AND STRUCTURES REMOVED FROM THIS SITE SHALL BE DISPOSED OF IN AN APPROVED SITE OBTAINED BY THE CONTRACTOR.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND APPLYING FOR ALL PERMITS ASSOCIATED WITH THIS CONSTRUCTION, NOT OBTAINED BY THE OWNER AND/OR ENGINEER.
8. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED PRIOR TO CONSTRUCTION IF ANY DISCREPANCY IN PLANS AND EXISTING CONDITIONS IS DISCOVERED.
9. THE CONTRACTOR SHALL STOCKPILE CLEAN, NATIVE TOPSOIL MATERIALS, FREE OF SOD AND DEBRIS LARGER THAN TWO INCHES, TO BE USED AS FILL IN THE PROPOSED LANDSCAPE AREAS. THE CONTRACTOR SHALL STOCKPILE EXCESS NATIVE MATERIAL ON THE SITE AS DIRECTED BY THE OWNER. EXCESS AND UNSUITABLE NATIVE MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED DUMPSITE RETAINED BY THE CONTRACTOR. DEBRIS AND STRUCTURES SHALL BE REMOVED FROM SITE AND DISPOSED AT AN APPROVED DISPOSAL SITE RETAINED BY THE CONTRACTOR.
10. ALL PORTIONS OF THE SITE UNDER THE PROPOSED ASPHALT SHALL BE EXCAVATED TO EXPOSE A NON-ORGANIC MATERIAL SUITABLE FOR CONSTRUCTION. THE SUBGRADE SHALL BE PREPARED CONFORMING TO SECTION 2-06.3(1), AND COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY WITH A MINIMUM TEN-TON SELF-PROPELLED VIBRATORY ROLLER. ANY AREAS THAT INDICATE PUMPING, UNSTABLE, OR YIELDING SOIL CONDITIONS SHALL BE OVER EXCAVATED AND REPLACED WITH TWO INCH TO FOUR- INCH QUARRY SPALLS. STOCKPILED MATERIAL SHALL BE PROTECTED FROM OVER- SATURATION BY RAINFALL OR PONDED WATER. FINAL GRADED CONDITIONS SHALL BE RAKED TO REMOVE ALL DEBRIS LARGER THAN ONE-INCH FROM THE SURFACE.
11. ORGANIC MATERIAL AND NON SUITABLE NATIVE MATERIAL DISCOVERED DURING SUBGRADE EXCAVATION AND SITE PREPARATION SHALL BE ENTIRELY REMOVED AND DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
12. DURING PERIODS OF RAINFALL, THE CONTRACTOR SHALL PREVENT WATER FROM STANDING ON THE SUBGRADE OR ON THE PREPARED GRAVEL SUBGRADE. THE CONTRACTOR IS RESPONSIBLE FOR SUBGRADE PROTECTION, REPAIR AND REPLACEMENT OF SUBGRADE MATERIALS SHALL BE PAID FOR BY AND AT THE CONTRACTOR'S EXPENSE. STORM RUNOFF SHALL BE DISCHARGED TO THE STORM SYSTEM OR ON SITE LOCATION THAT WILL NOT IMPACT THE NEIGHBORING PROPERTIES, THIS PROJECT, DOWNSTREAM CONVEYANCE SYSTEM. THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY DITCHING AND PUMPS TO REMOVE ALL STANDING WATER FROM THE WORK AREA.
13. AGGREGATE FOR GRAVEL BASE SHALL COMPLY WITH SECTION 9-03.14 OF THE 2025 STANDARD SPECIFICATIONS. GRAVEL BASE SHALL CONSIST OF WELL GRADED SAND AND GRAVEL CONFORMING TO THE REQUIRED SPECIFICATIONS. THE PERCENT PASSING THE US NO. 200 SIEVE SHALL NOT EXCEED 5%. ALL GRAVEL BASE IMPORTED TO THE SITE SHALL HAVE A CONSISTENT GRADATION. PRIOR TO IMPORTING ANY GRAVEL BASE MATERIAL. THE CONTRACTOR SHALL PROVIDE GRADATION AND TEST RESULTS TO THE ENGINEER FOR APPROVAL. GRADATION AND PROCTOR TEST RESULTS SHALL BE SUPPLIED BY THE CONTRACTOR PER 2000 TONS OF IMPORTED MATERIAL. THE CONTRACTOR SHALL RETAIN LICENSED PERSONNEL TO PERFORM COMPACTION TESTS FOR THE FOLLOWING:
   A. TOP OF PREPARED GRAVEL BASE WITHIN THE PARKING LOT AND ROAD SECTION ON A 50-FOOT GRID/INTERVAL FOR GRAVEL FILLS GREATER THAN TWO FEET.
   B. ONE TEST ADJACENT TO ALL STRUCTURES WITHIN THE ASPHALT.
   C. TRENCHES WITH THREE FEET OR LESS OF GRAVEL TRENCH BACKFILL: TOP CENTER OF UTILITY TRENCH AT 50-FEET INTERVALS.
   D. TRENCHES WITH MORE THAN THREE FEET OF GRAVEL TRENCH BACKFILL: TOP CENTER OF UTILITY TRENCH AND MID-DEPTH OF TRENCH, BOTH AT 50- FEET INTERVALS. ALL TEST RESULTS SHALL MEET OR EXCEED THE SPECIFICATIONS. ALL AREAS THAT DO NOT MEET THE REQUIRED SPECIFICATIONS SHALL BE RE-COMPACTED AND RETESTED AT NO ADDITIONAL COST TO THE OWNER.
14. CRUSHED SURFACING TOP COURSE SHALL CONFORM TO SECTION 9-03.9(3) OF THE 2025 STANDARD SPECIFICATIONS. EACH LIFT SHALL BE MECHANICALLY COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY AS DETERMINED BY ASTM D- 1557 TESTING PROCEDURE. PLACEMENT AND GRADING OF COMPACTED CRUSHED TOP COURSE MATERIAL WITHIN THE ASPHALT AREAS SHALL HAVE A TOLERANCE OF PLUS OR MINUS ONE-HALF INCH FROM THE DESIGNATED TOP OF CRUSHED SURFACING TOP COURSE, THE CONTRACTOR SHALL PROVIDE GRADATION AND DEGRADATION TEST RESULTS TO THE ENGINEER FOR APPROVAL OF SITE MATERIAL.
15. THE FINAL GRADING OF CRUSHED SURFACING TOP COURSE WILL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO CONCRETE INSTALLATION.



UTILITY TRENCHES

1. ALL TRENCHES SHALL BE EXCAVATED TO PROVIDE A MINIMUM WIDTH OF EIGHT INCHES ON EITHER SIDE OF THE PROPOSED UTILITY AS INDICATED ON THE UTILITY TRENCH DETAIL WITHIN THE CIVIL DRAWINGS. ALL SEWER PIPES SHALL BE BEDDED WITH PEA GRAVEL. STORM SEWER TRENCHES SHALL BE BEDDED WITH SAND, BUCKSHOT OR GRAVEL WITH 100% PASSING THE 1/4-INCH SCREEN. BEDDING MATERIAL SHALL ALSO BE USED TO COVER THE PIPE TO A MINIMUM OF SIX INCHES ABOVE THE TOP OF THE PIPE. THE CONTRACTOR SHALL CAREFULLY TAMP AND HAND COMPACT BEDDING AND COVER MATERIAL TO ASSURE ADEQUATE SUPPORT UNDER THE BARREL OF THE PIPE.
2. TRENCH BACKFILL MATERIAL SHALL CONSIST OF COMPACTED GRAVEL BASE PLACED IN LOOSE LIFTS NOT EXCEEDING EIGHT INCHES AND COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY AS DETERMINED BY ASTM D 1557 TESTING PROCEDURE. THE INITIAL LIFT OF GRAVEL TRENCH BACKFILL OVER THE PIPE SHALL NOT EXCEED 18 INCHES IN ORDER TO PROTECT THE PIPE. GRAVEL BASE SHALL BE USED AS TRENCH BACKFILL IN ALL TRENCHES UNDER PROPOSED ASPHALT, CONCRETE, CONSTRUCTION TRAFFIC AREAS, AND WITHIN FIVE FEET BEYOND IMPERVIOUS SURFACES. NATIVE SOIL MATERIALS MAY BE USED AS TRENCH BACKFILL ONLY AT LOCATIONS BEYOND THOSE REQUIRING GRAVEL STRUCTURAL FILL. THE USE OF NATIVE SOIL MATERIALS AS TRENCH BACKFILL, WITHIN THOSE AREAS REQUIRING GRAVEL, MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER AND OWNER PRIOR TO THE WORK BEING PERFORMED. THE USE OF NATIVE SOILS WITHIN TRENCHES REQUIRING GRAVEL WILL ONLY BE ACCEPTED WITH THE APPROVAL OF THE GEOTECHNICAL ENGINEER, AND THE NATIVE SOILS MUST BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM DRY DENSITY. THE USE OF NATIVE SOILS AS TRENCH BACKFILL SHALL NOT PRECLUDE THE MINIMUM ASPHALT SECTION REQUIREMENTS AS IDENTIFIED ON THE CIVIL PLANS. NO NATIVE MATERIAL MAY BE USED AS TRENCH BACKFILL IN THE PUBLIC RIGHT OF WAY.
3. THE BOTTOM OF UTILITY TRENCHES SHALL HAVE A STABLE NON-YIELDING SOIL CONDITION SUITABLE FOR SUPPORTING THE DESIGN LOADS. WHERE THE BOTTOM OF TRENCH CONDITIONS EXHIBIT PUMPY YIELDING CONDITIONS, THE BOTTOM OF TRENCH SHALL BE OVER EXCAVATED TO EXPOSE FIRM STABLE MATERIAL, AND BACKFILLED WITH TWO INCH TO FOUR INCH SHOT ROCK MATERIAL. WHERE OVER EXCAVATING EXPOSES SIMILAR UNSTABLE CONDITIONS, TRENCH OVER EXCAVATION SHALL BE DONE TO TWO FEET BELOW THE PIPE BEDDING MATERIAL AND BACKFILLED WITH TWO INCH TO FOUR INCH SHOT ROCK MATERIAL.

GENERAL NOTES:

NOTE-1 RESTORATION SHALL CONSIST OF REMOVING ALL ROCKS GREATER THAN 1" IN DIAMETER, BLENDING THE TOP OF THE TRENCH WITH THE SURROUNDING GRADE AND REMOVING ALL SPOILS FROM THE SITE.

IF THE EXISTING GRAVEL SHOULDER IS DISTURBED, REPAIR ACCORDING TO THE FOLLOWING REQUIREMENTS:

A. 6" OF 5/8" MINUS CRUSHED SURFACING TOP COURSE PER SECTION 9-03.9(3), TO BE COMPACTED TO 95% OF MAXIMUM DENSITY.

B. GRAVEL BORROW AS NECESSARY TO PREPARE ROAD PER SECTION 4-02 COMPACTED TO 95% OF MAXIMUM DENSITY. PLACE IN LOOSE LIFTS NOT EXCEEDING EIGHT INCHES.

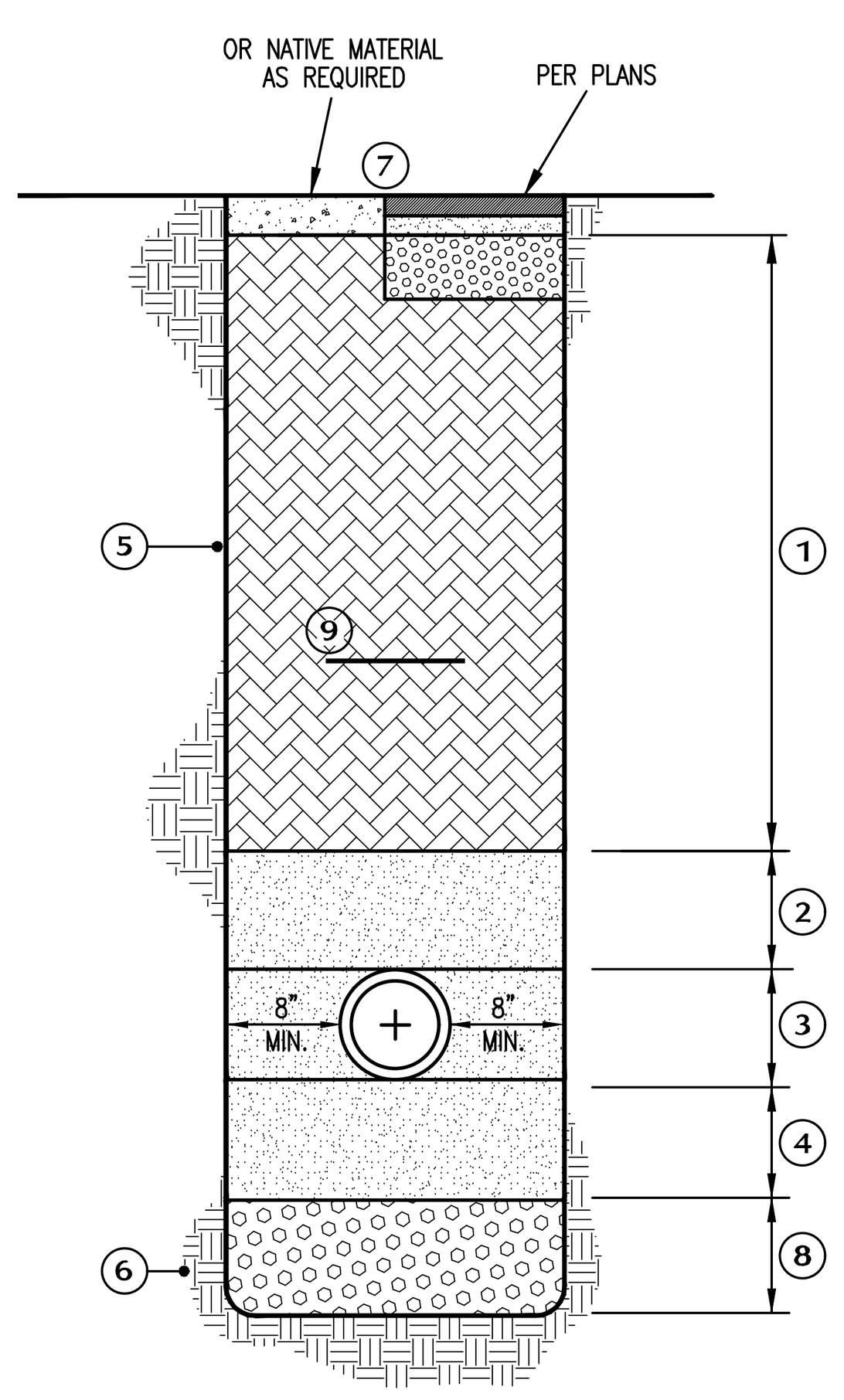
NOTE-2 PIPE BEDDING AND COVER MATERIAL SHALL BE USED IN ALL TRENCHES REGARDLESS OF LOCATION. GRAVEL BORROW TRENCH BACKFILL SHALL BE USED IN ALL TRENCHES UNDER CRUSHED ROCK, CONSTRUCTION TRAFFIC AREAS, AND WITHIN FOUR FEET OF THE ABOVE-MENTIONED CONDITIONS.

NOTE-3 ANY SPECIAL CONDITIONS MUST FIRST BE APPROVED BY THE ENGINEER.

NOTE-4 SAWCUT EXISTING ASPHALT 1' BEYOND EDGE OF TRENCH. TACK COAT FACE OF SAWCUT AND SEAL JOINT WITH CSS-1 AND SAND, APPLIED WITH HEAT.

NOTE-5 ALL DENSITIES FOR GRAVEL SHALL BE PROCTORED USING ASTM D-1557. ASPHALT SHALL BE PROCTORED USING STATE APPROVED METHODS. DENSITIES SHALL BE DETERMINED USING A NUCLEAR DENSOMETER CONFORMING TO ASTM D-2950.

NOTE-6 AT LOCATIONS WITHIN THE EXISTING ASPHALT ROADWAY OR WHERE THE EDGE OF THE UTILITY TRENCH IS LESS THAN 4' FROM THE EDGE OF ASPHALT, THE TRENCH SHALL BE BACKFILLED WITH COMPACTED GRAVEL BORROW AS SPECIFIED IN THE GEOTECHNICAL REPORT.



UTILITY TRENCH DETAIL
NOT TO SCALE
A / 1.3

TRENCH NOTES:

1. GRAVEL BORROW PLACED IN LOOSE LIFTS NOT EXCEEDING 8" IN DEPTH AND COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY AT LOCATIONS WHERE REQUIRED AND/OR SPECIFIED. THE PERCENTAGE PASSING THE #200 SIEVE SHALL NOT EXCEED 5%. NATIVE MATERIAL, WHERE ACCEPTABLE, MAY BE USED OUTSIDE OF PUBLIC RIGH-OF-WAY. PLACE NATIVE MATERIAL IN LIFTS NOT EXCEEDING 12 INCHES AND COMPACT TO A MINIMUM OF 90% (THE TOP 4' SHALL BE COMPACTED TO A MINIMUM OF 95%).
2. 6" OF SAND, BUCKSHOT OR GRAVEL 100% PASSING THE 1/4" SCREEN TO BE HAND-COMPACTED ABOVE CROWN OF PIPE.
3. HAND-COMPACTED SAND, BUCKSHOT OR GRAVEL 100% PASSING THE 1/4" SCREEN TO BE TAMPED AROUND AND UNDER THE PIPE. THICKNESS EQUALS OUTSIDE DIAMETER OF PIPE.
4. ** 6" OF SAND, BUCKSHOT OR GRAVEL 100% PASSING 1/4" SCREEN, HAND-COMPACTED.
5. TRENCH LINE.
6. UNDISTURBED EARTH.
7. SURFACE RESTORATION SHALL BE IN ACCORDANCE WITH GENERAL NOTE-1.
8. IN TRENCHES WITH SOFT, YIELDING MATERIAL, AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL OVER-EXCAVATE TO 2' BELOW PIPE INVERT AND BACKFILL WITH 2 1/2" MINUS BALLAST AGGREGATE THE BOTTOM OF PIPE BEDDING.
9. PLACE DETECTABLE TRACER TAPE (MIN. 1' ABOVE PIPE) PER SECTION 9-15.18 OF THE 2023 STANDARD SPECIFICATIONS.

** SEWER BEDDING SHALL BE BUCKSHOT OR PEA GRAVEL ONLY.

Sound Development Group
ENGINEERING, SURVEYING & LAND DEVELOPMENT SERVICES
P.O. Box 1705 • 1111 Cleveland Avenue, Suite 202
Mount Vernon, WA 98273 Tel: 360-404-2010

SHEET REVISIONS:

NO.	DATE	DESCRIPTION	APPROVED
1	11.10.25	TANK FARM CIVILS	T.ZEMPEL/P.SEVERIN
2	03.26.26	COUNTY REVISIONS	T.ZEMPEL/P.SEVERIN

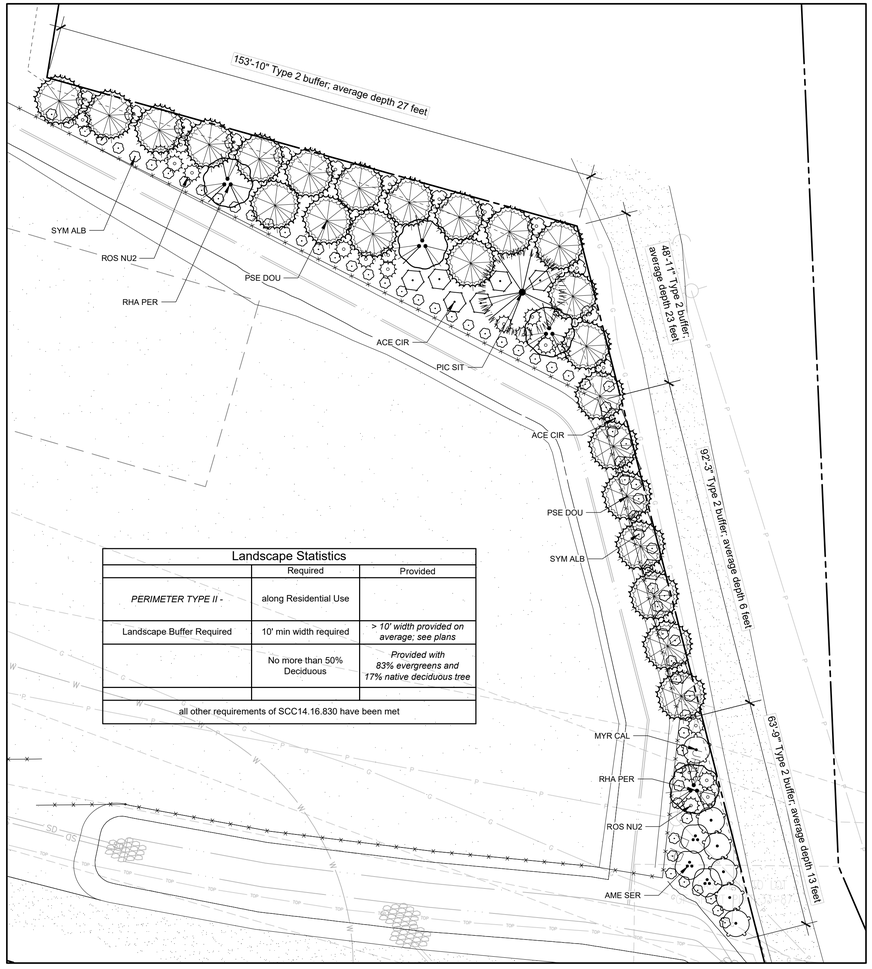
CALL 48 HOURS
BEFORE YOU DIG
1.800.424.5555

PROJECT:
TANK FARM SITE PLAN
FOR
WILBUR-ELLIS COMPANY

SHEET DESCRIPTION:
SPECIFICATIONS & DETAILS

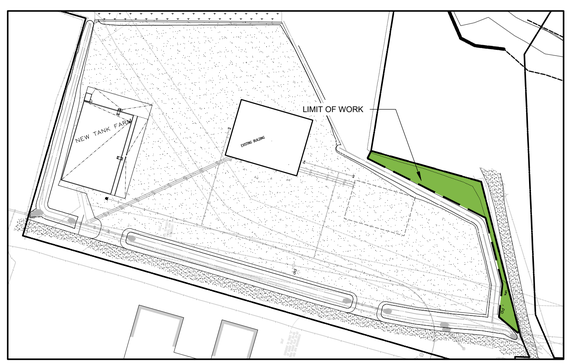
PATRICK L. SEVERIN
STATE OF WASHINGTON
32226
REGISTERED
PROFESSIONAL ENGINEER
4/18/2026

SCALE:	AS NOTED
DRAWN BY:	T.ZEMPEL
DESIGNED BY:	T.ZEMPEL
DATE:	03.26.2026
JOB NUMBER:	25046
DWG NAME:	25046 PLN.DWG
SHEET NUMBER:	C1.3



Landscape Statistics		
	Required	Provided
PERIMETER TYPE II -	along Residential Use	
Landscape Buffer Required	10' min width required	*> 10' width provided on average; see plans*
	No more than 50% Deciduous	*Provided with 83% evergreens and 17% native deciduous tree*
all other requirements of SCC14.16.830 have been met		

PLANTING PLAN
1" = 20'-0" (CHECK SCALE BAR FOR ACCURACY)

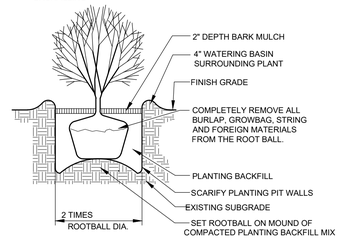


LIMIT OF WORK
no scale

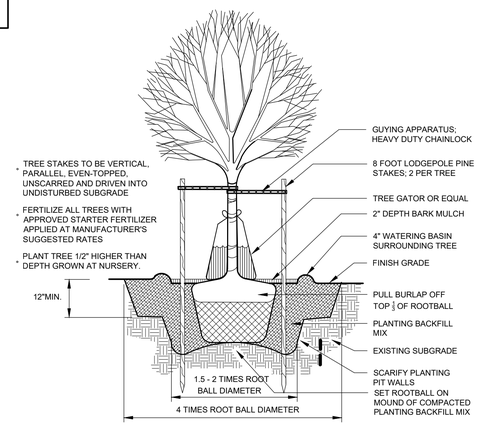
PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE
TREES					
	PIC SIT	1	Picea sitchensis	Sitka Spruce	7` Ht.
	PSE DOU	24	Pseudotsuga menziesii	Douglas Fir	7` Ht.
	RHA PER	4	Rhamnus purshiana	Cascara	2.5" Cal.
SHRUBS					
	ACE CIR	12	Acer circinatum	Vine Maple	5 gal.
	AME SER	3	Amelanchier alnifolia	Serviceberry	5 gal.
	MYR CAL	6	Myrica californica	Pacific Wax Myrtle	2 gal.
	RIB SAN	13	Ribes sanguineum	Red Flowering Currant	5 gal.
	ROS NU2	19	Rosa nutkana	Nootka Rose	2 gal.
	SYM ALB	68	Symphoricarpos albus	Common White Snowberry	2 gal.

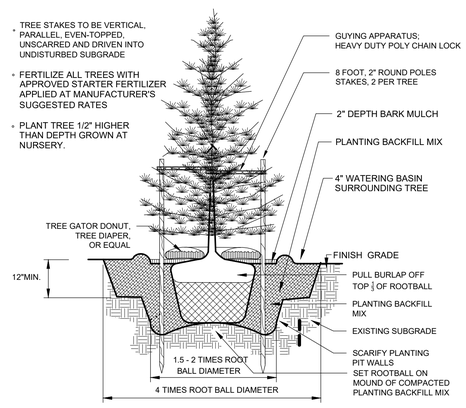
- PLANT SHRUB 1/2" HIGHER THAN DEPTH GROWN AT NURSERY.
- FERTILIZE ALL PLANTS WITH APPROVED STARTER FERTILIZER APPLIED AT MANUFACTURER'S SUGGESTED RATES
- LIBERALLY ADD WETTING AGENT TO ALL PLANTING PITS
- SCARIFY ROOTBALL OF CONTAINER-GROWN PLANTS. PRIOR TO BACKFILLING



1 | SHRUB PLANTING DETAILS
L-1 | NO SCALE



2 | TREE WITH WATER BAG
L-1 | NO SCALE



3 | CONIFER WITH WATER BAG
L-1 | NO SCALE

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED BY PERSONS FAMILIAR WITH THIS KIND OF WORK AND UNDER THE SUPERVISION OF A QUALIFIED FOREMAN.
2. ALL PLANT MATERIAL SIZES AND QUALITY TO CONFORM TO AMERICAN ASSOC. OF NURSERYMEN, AMERICAN STANDARD FOR NURSERY STOCK, MOST RECENT PUBLISHED.
3. PLANT LOCATIONS ON THE PLANS ARE DIAGRAMMATIC AND MAY BE SUBJECT TO ADJUSTMENT IN THE FIELD BY THE LANDSCAPE CONTRACTOR.
4. ALL PLANT MATERIAL SHALL BE OF NURSERY STOCK AND SHALL BE OF THE TYPE, SIZE AND CONDITION SPECIFIED. THE PLANT MATERIAL SHALL EXHIBIT NORMAL HABITS OF GROWTH FOR THE SPECIES, SHALL HAVE BUDS INTACT AND SHALL BE FREE OF DISEASE, INSECTS, SCARS, BRUISES, BREAKS, SEED AND WEED ROOTS.
5. SEE NOTES THIS SET FOR TOPSOIL DEPTH AND SPECIFICATION.
6. ARBORIST WOOD CHIP MULCH IS TO BE INSTALLED AT ALL NEW PLANTING AREAS WITH A MINIMUM OF 6 INCHES. BARK MULCH ACCEPTABLE ALTERNATIVE
7. *ALL LANDSCAPE AREAS SHALL HAVE PLANTING BACKFILL AMENDED WITH A TRANSPLANT AMENDMENT (SUPERTHRIVE OR EQUAL) AND WETTING AGENT (TERAWET OR EQUAL) APPLIED AT MANUFACTURES RECOMMENDED RATE.*
8. LANDSCAPE CONTRACTOR SHALL VERIFY LOCATION OF ALL SITE UTILITIES PRIOR TO LANDSCAPE IMPLEMENTATION. PLANT LOCATIONS MAY BE ADJUSTED TO AVOID CONFLICT.
9. LANDSCAPE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT EXISTING SITE IMPROVEMENTS, PAVING, WALLS, AND UNDERGROUND UTILITIES. DAMAGE SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AND AT NO ADDITIONAL COST.
10. PLANT COUNT IS FOR THE CONTRACTOR'S CONVENIENCE; IF THERE IS A DISCREPANCY, THE PLAN SHALL GOVERN. ACTUAL PLANT QUANTITIES TO BE DETERMINED BY REQUIRED PLANT SPACING.
11. ALL AREAS TO BE PLANTED WITH GROUNDCOVER ARE INDICATED ON THE PLAN WITH A HATCH PATTERN. SEE PLANT LIST FOR PLANT TYPE, SIZE, AND SPACING.
12. SUBSTITUTION OF PLANT VARIETIES DUE TO LACK OF AVAILABILITY SUBJECT TO APPROVAL BY THE OWNERS REPRESENTATIVE AND CITY.
13. ALL DIMENSIONS ARE ASSUMED TO BE PARALLEL OR PERPENDICULAR UNLESS OTHERWISE NOTED.
14. ALL SOIL GRADES TO BE A MINIMUM SIX INCHES BELOW ADJACENT FINISH FLOOR ELEVATIONS UNLESS NOTED OTHERWISE ALL GRADES ADJACENT TO A BUILDING SHALL HAVE A MAXIMUM SLOPE OF 5% 3' FROM FOUNDATION.
15. ALL GRADES, DIMENSIONS AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.
16. BASEMAP PROVIDED BY SOUND DEVELOPMENT GROUP, MOUNT VERNON, WA

SOIL NOTES

1. CONTRACTOR MAY STOCKPILE SITE TOPSOIL FOR POSSIBLE RE-USE IN LANDSCAPE BEDS. STOCKPILED TOPSOIL TO BE APPROVED BY OWNERS REPRESENTATIVE. ROAD BASE, GLACIAL TILL, GRAVEL OR CONTAMINATED SOILS ARE NOT ACCEPTABLE AND WILL BE REJECTED.
2. SITE TOPSOIL SHALL HAVE ALL ROCKS, GRASS CLODS AND DEBRIS LARGER THAN 1" REMOVE AND DISPOSED OF OFF SITE WHENEVER VISIBLE ON THE SURFACE
3. SITE TOPSOIL MUST BE WEED-FREE.
4. EXISTING SITE TOPSOIL TO BE AMENDED WITH COMPOST AT A RATIO OF 3:1. 3 UNITS OF EXISTING SOIL TO ONE UNIT OF COMPOST. COMPOST TO BE WSDOT CERTIFIED.
5. IN LIEU OF AMENDING SITE TOPSOIL CONTRACTORS MAY CHOOSE TO USE IMPORTED 2-WAY TOPSOIL.
6. TOPSOIL DEPTHS
   - 6.1. TOPSOIL TO BE PLACED AT A MINIMUM OF 4" IN ALL LANDSCAPE BED AREAS AND INCORPORATED INTO EXISTING SUBGRADE.
   - 6.2. TOPSOIL TO BE PLACE AT AT MINIMUM OF 12" IN ALL TREE-PIT AREAS. SEE DETAIL THIS PAGE.
7. TOPSOIL SHALL NOT BE MOVED, MIXED OR PLACE WHILE SATURATED.
8. IN ALL BEDS, PLACED TOPSOIL TO BE INCOPRPORTED INTO EXISTING GRADE.

MAINTENANCE NOTES -

1. UNDER NO CIRCUMSTANCE ARE STREET TREES TO BE TOPPED OR PRUNED WITHOUT PERMISSION OF THE COUNTY ARBORIST.
2. UNDER NO CIRCUMSTANCE ARE SHRUBS TO BE SHEARED OR SHAPED WITHOUT EXPLICIT PERMISSION FROM THE OWNER. SHRUBS ARE DESIGNED TO FILL AND GROW IN TO A PERMANENT MATURE SIZE.
3. GROUNDCOVER THAT GROWS 'OUT' OF BEDS AND INTO ADJACENT WALKS OR ROADS ARE TO BE CUT-BACK AS NEEDED.
4. WEEDS TO BE REMOVED IN A TIMELY MANNER BY MECHANICAL OR CHEMICAL MEANS, IN COMPLIANCE WITH ALL LOCAL AND STATE GUIDELINES AND REQUIREMENTS.
5. BARK MULCH IN PLANTER BEDS TO BE TOPPED OFF WITH 1" LIFT MIN, ONCE PER YEAR IN THE SPRING.

SUPPLEMENTAL WATERING

AS A NON AUTOMATIC IRRIGATED LANDSCAPE, THIS DROUGHT TOLERANT PLANTING PLAN STILL REQUIRES SUPPLEMENTAL WATERING DURING THE PLANTS ESTABLISHMENT PERIOD. IT IS RECOMMENDED THAT THE OWNER HAVE A MAINTENANCE CONTRACT OR MAINTENANCE POLICY IN PLACE TO PERFORM THE FOLLOWING:

1. FILL TREE WATER BAG AND IRRIGATE SHRUBS AS FOLLOWS:
   - 1.1. FOR THE MONTHS OF OCT, NOV, DEC, JAN, FEB, MAR, APR
     - 1.1.1. NO IRRIGATION REQUIRED
   - 1.2. FOR THE MONTHS OF MAY, JUNE,
     - 1.2.1. AFTER 10 DAYS OF NO RAINFALL, ALL PLANTS TO BE WATERED
   - 1.3. FOR THE MONTHS OF JULY, AUG, SEPT
     - 1.3.1. AFTER 6 DAYS OF NO RAINFALL, ALL PLANTS ARE TO BE WATERED
2. THESE RECOMMENDATIONS ARE TO BE FOLLOWED AS A MINIMUM REQUIREMENT. ESPECIALLY WARM OR DRY PERIODS WILL REQUIRE ADDITIONAL ESTABLISHMENT WATER.
3. WATER VOLUME TO BE APPROXIMATELY 1" OF WATER FOR THE ENTIRE 'DRIP-ZONE' OF THE PLANTS.
4. THIS SCHEDULE TO BE FOLLOWED FOR TWO GROWING SEASONS.

NO.	DATE	REVISION	BY	REV.

prepared for:
Sound Development Group
Contact: Tammy Zempel

prepared by:
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Landscape Architecture and Planning
Mount Vernon, WA 98273
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STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
PATRIK DYLAN
CERTIFICATE NO. 793

Wilber Ellis
Building Expansion
Skagit County, WA

SCALES:
HORIZONTAL : 1" = 20' / varies
VERTICAL : N/A
DESIGNED: PD
DRAWN: PD
CHECKED: PD

LANDSCAPE PLAN AND DETAILS

one inch
0 20 40 60 80
NORTH

ISSUE DATE: 11.20.25
DRAWING: 2519 site
JOB NO.: 2519
SHEET: L-1

WILBUR-ELLIS COMPANY

NEW DIKE / LOADOUT PAD AND PROCESS PLUMBING

MOUNT VERNON, WASHINGTON

DRAWING INDEX			
SHEET	DESCRIPTION	REVISION	REVISION DATE
GENERAL DRAWINGS			
CVR	COVER		
SITE DRAWINGS			
C001	SITE UTILITY PLAN		
STRUCTURAL DRAWINGS			
S101	DIKE AND LOADOUT PLAN		
S102	CONTAINMENT PLANS & CALCULATIONS	1	2026-03-25
S201	STRUCTURAL DETAILS		
S202	STRUCTURAL DETAILS		
S203	EQUIPMENT SHED PLAN AND DETAILS		
S204	EQUIPMENT SHED ELEVATIONS		
S301	SPECIFICATIONS		
S302	SPECIFICATIONS		
PLUMBING DRAWINGS			
P101	PLUMBING PLANS		
P102	PROCESS PLUMBING PLANS	1	2026-03-25
P201	PROCESS PLUMBING DETAILS		
P202	PROCESS PLUMBING DETAILS		
P203	12 PRODUCT LOAOUT SKID REFERENCE DRAWING		
P204	MICRO LOADOUT SKID REFERENCE DRAWING		
P205	TOTE RACK DETAILS		
P301	PROCESS PLUMBING 3D VIEW		
ELECTRICAL DRAWINGS			
E101	ELECTRICAL PLANS	1	2026-03-25
E201	ELECTRICAL SCHEDULES		
E301	SPECIFICATIONS		



LOCATION MAP

E:\Revit Work Files\887MT-25 Dike Central Mode\V2_apr8\V2MT.rvt

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
214 E. 1ST ST. | MASON, NE 68861 | 308.345.3373
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APRIL B. HOCK
STATE OF WASHINGTON
26006932
REGISTERED
PROFESSIONAL ENGINEER
4/21/2026

EXPIRES 10/03/2027

DWG: 887MT-25
DRAWN: T.A.S.
CHECKED:
REVISIONS

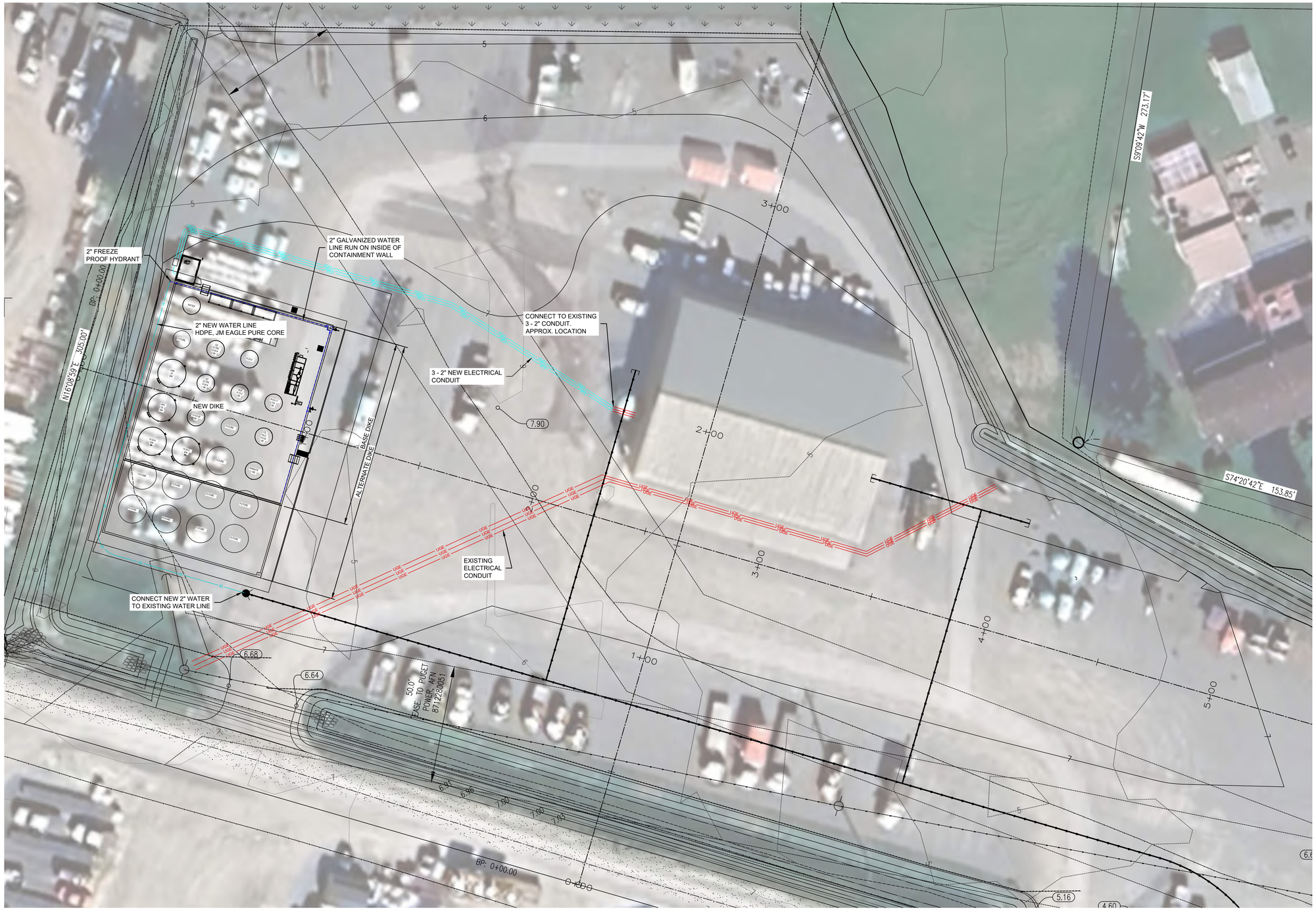
CVR

DATE: DEC. 2025

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If not one inch on this sheet, adjust scales accordingly



SITE UTILITY PLAN

SCALE: 1" = 20'-0"

NORTH

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NEW DIKE AND LOAD PAD

WILBUR-ELLIS COMPANY

13586 BAYVIEW EDISON RD
MOUNT VERNON, WASHINGTON

DESIGN ASSOCIATES
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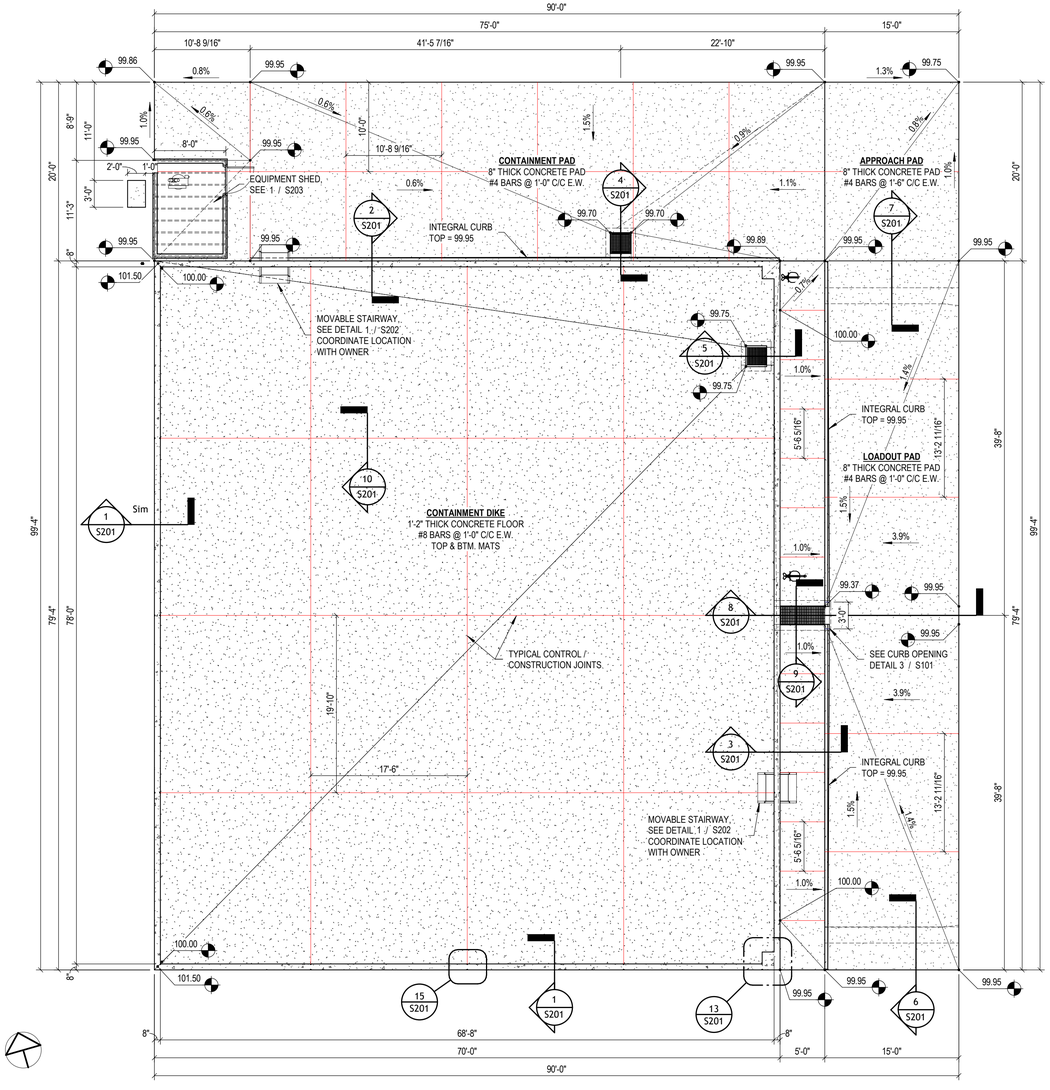
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26080932
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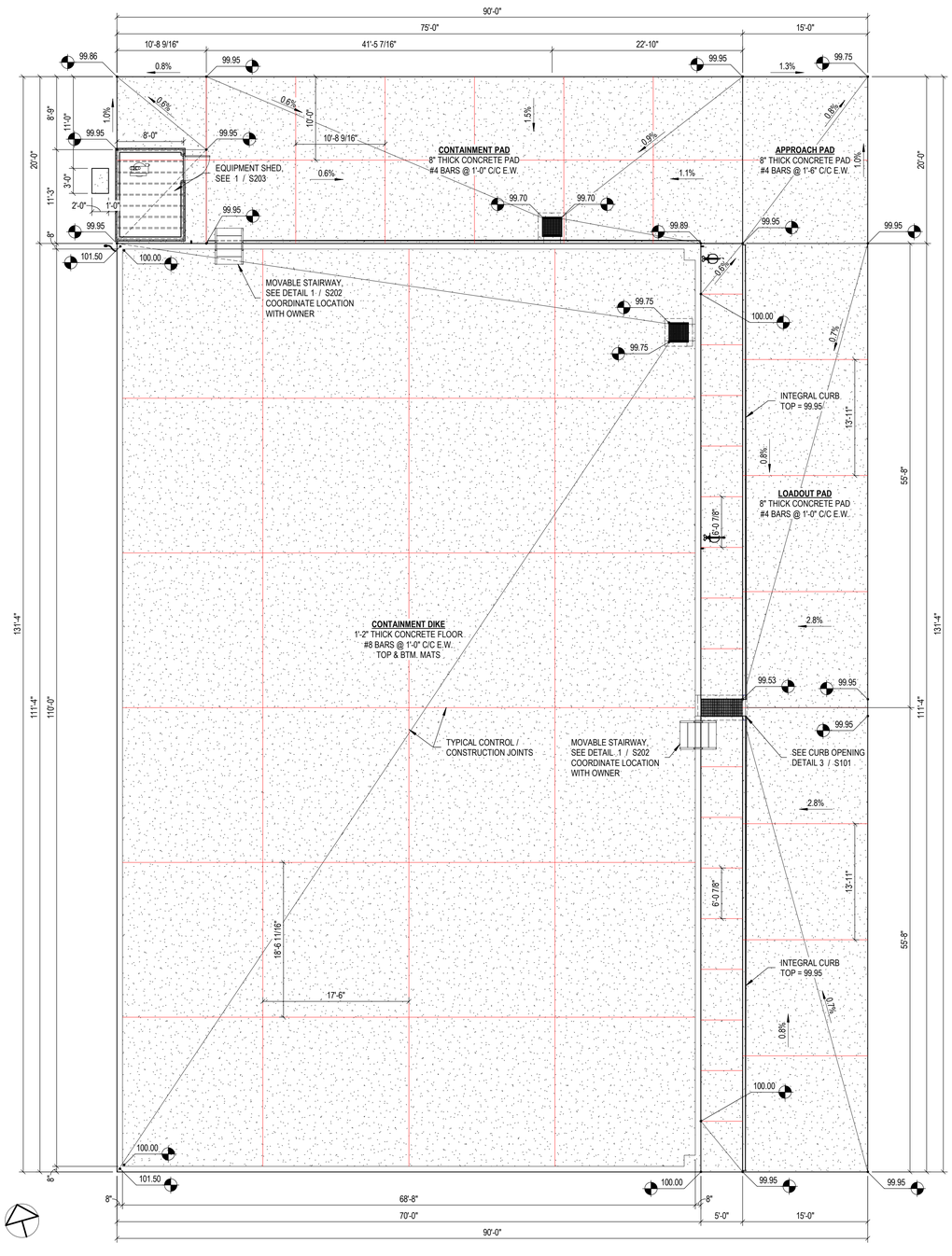
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FINISH FLOOR - BASE

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

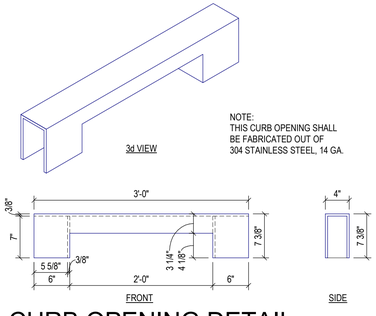


FINISH FLOOR - ALTERNATE

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

CONCRETE NOTES

1. ALL CONCRETE SHALL BE STRUCTURAL CONCRETE, 4,000 PSI COMPRESSIVE STRENGTH WITH 6% AIR ENTRAINMENT AND REINFORCED AS SHOWN.
2. USE LIGHT BROOM FINISH.
3. ALL SUBGRADE UNDER CONCRETE SHALL BE COMPACTED, SEE CIVIL DRAWINGS FOR COMPACTION REQUIREMENTS.
4. JOINT SEALER SHALL BE A TWO PART POLYSULFIDE SEALANT AS SUPPLIED BY DOW OR W.R. MEADOWS. (ALL JOINTS)
5. THE WATER STOP SHALL BE A GREENSTREAK 701 OR APPROVED EQUAL.
6. MINIMUM COVER OVER REINFORCEMENT SHALL BE 3" AGAINST EARTH AND 2" WHERE EXPOSED TO AIR.
7. MINIMUM LAP SPLICE SHALL BE AS FOLLOWS:
   - #4 BARS = 18"
   - #5 BARS = 24"
   - #6 BARS = 30"
   - #8 BARS = 36"
8. REBAR SHALL BE SET ON CONCRETE BLOCKS OR CHAIRS. **DO NOT SET ANY REBAR IN THE GROUND.**
9. APPLY ON ALL CONCRETE SURFACES PROTECTCRETE DENSIFIER PLUS OR APPROVED EQUAL.



CURB OPENING DETAIL

3 SCALE: 1" = 1'-0"

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

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26006932
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4/21/2026

EXPIRES 10/03/2027

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S101

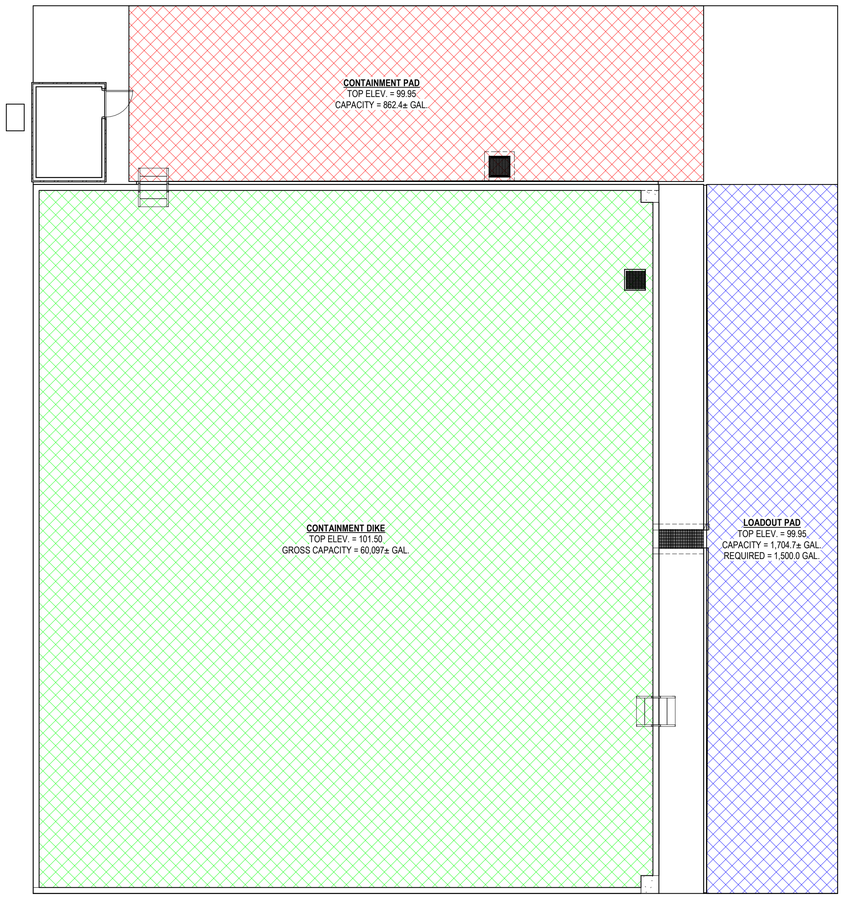
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FINISH FLOOR - BASE CONTAINMENT

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

BASE CONTAINMENT DIKE VOLUME CALCULATIONS

GROSS DIKE VOLUME	60,097 GALLONS
LARGEST TANK	30,000 GALLONS
25% OF LARGEST STORAGE	7,500 GALLONS
VOLUME DISPLACED BY TANKS (INCLUDES FUTURE TANKS PER SHEET P102)	17,765 GALLONS
NET DIKE VOLUME	42,332 GALLONS

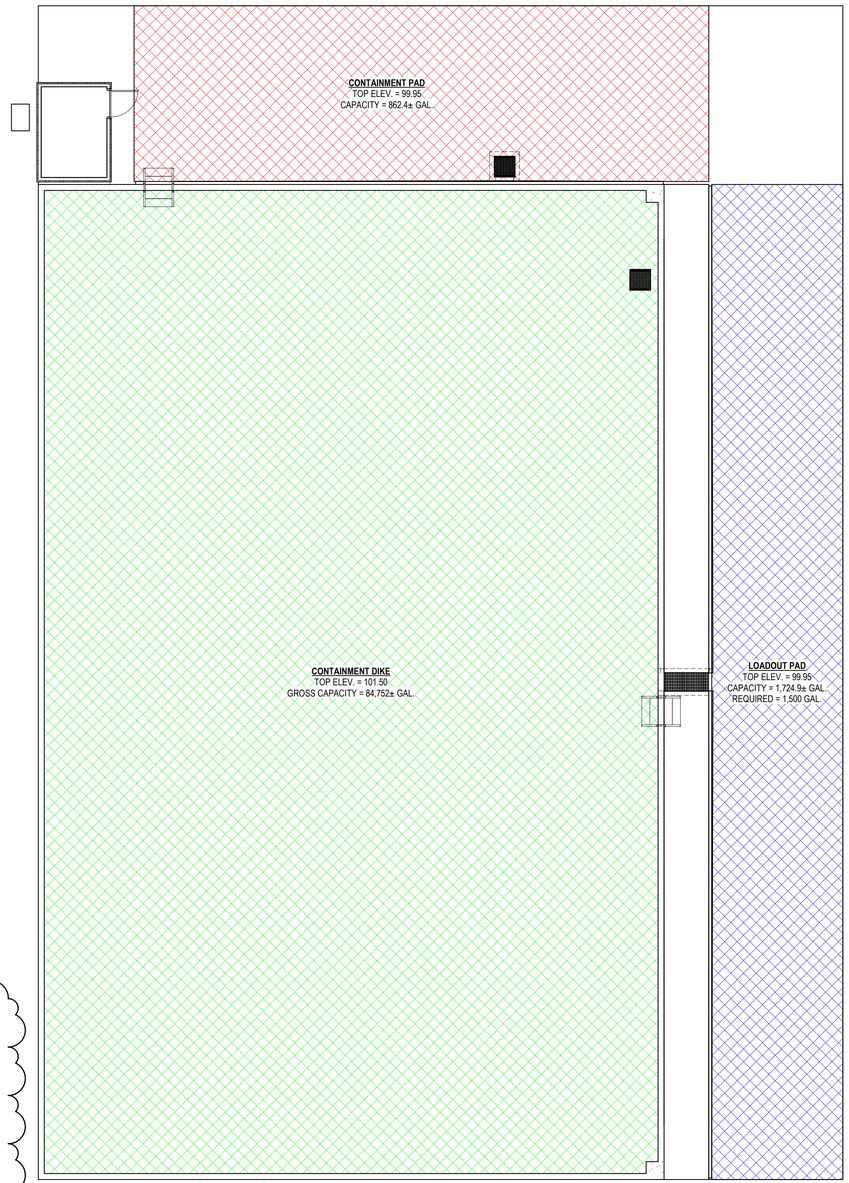
NET GRATER THAN OR EQUAL TO 125%

L	W	H	Cubic Ft
78	68.67	1.5	8034.39

8034.39 ft^3
60097.2 Gal

Displacement by Tanks

Tank #	Description	Diameter (ft)	Height (ft)	Submergence (ft)	Volume Total (gals.)	Volume Displaced (gals.)
1	Water	12.0	35	1.50	6,000	1,269
2	GZ Ultra 6-24-6	12.0	35	1.50	6,000	1,269
3	6-22-6	12.0	35	1.50	6,000	1,269
4	UAN 32	12.0	35	1.50	30,000	1,269
5	GZ Ultra 6-24-6	12.0	35	1.50	6,000	1,269
6	NUE 6-12-2	12.0	35	1.50	6,000	1,269
7	9-0-0-11 CA	12.0	35	1.50	6,000	1,269
8	UAN 32	12.0	35	1.50	30,000	
9	12-0-0-26	12.0	35	1.50	6,000	1,269
10	Future	12.0	35	1.50		1,269
11	FG KILO 0-0-24	12.0	35	1.50	6,000	1,269
12	10-34-0	12.0	35	1.50	30,000	1,269
13	10-34-0	12.0	35	1.50	30,000	1,269
14	Future	12.0	35	1.50	30,000	1,269
15	Rinsate	12.0	35	1.50		1,269
					Total Tank Displacement	**17,765**
					Net Volume Available	**42,332**



FINISH FLOOR - ALTERNATE CONTAINMENT

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

CONTAINMENT DIKE VOLUME CALCULATIONS

GROSS DIKE VOLUME	84,752 GALLONS
LARGEST TANK	30,000 GALLONS
25% OF LARGEST STORAGE	7,500 GALLONS
VOLUME DISPLACED BY TANKS (INCLUDES FUTURE TANKS PER SHEET P102)	29,186 GALLONS
NET DIKE VOLUME	55,567 GALLONS

L	W	H	Cubic ft
110	68.67	1.5	11330.55

11330.55 ft^3
84752.51 Gal

Displacement by Tanks

Tank #	Description	Diameter (ft)	Height (ft)	Submergence (ft)	Volume Total (gals.)	Volume Displaced (gals.)
1	Water	12.0	35	1.50	6,000	1,269
2	Future	12.0	35	1.50		1,269
3	GZ Ultra 6-24-6	12.0	35	1.50	6,000	1,269
4	6-22-6	12.0	35	1.50	6,000	1,269
5	UAN 32	12.0	35	1.50	30,000	1,269
6	GZ Ultra 6-24-6	12.0	35	1.50	6,000	1,269
7	NUE 6-12-2	12.0	35	1.50	6,000	1,269
8	9-0-0-11 CA	12.0	35	1.50	6,000	1,269
9	UAN 32	12.0	35	1.50	30,000	
10	12-0-0-26	12.0	35	1.50	6,000	1,269
11	Future	12.0	35	1.50		1,269
12	FG KILO 0-0-24	12.0	35	1.50	6,000	1,269
13	10-34-0	12.0	35	1.50	30,000	1,269
14	10-34-0	12.0	35	1.50	30,000	1,269
15	Future	12.0	35	1.50		1,269
16	Rinsate	12.0	35	1.50	10,000	1,269
17	Future	12.0	35	1.50		1,269
18	Future	12.0	35	1.50		1,269
19	Future	12.0	35	1.50		1,269
20	Future	12.0	35	1.50		1,269
21	Future	12.0	35	1.50		1,269
22	Future	12.0	35	1.50		1,269
23	Future	12.0	35	1.50		1,269
24	Future	12.0	35	1.50		1,269
					Total Tank Displacement	**29,186**
					Net Volume Available	**55,567**

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
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4/21/2026

EXPIRES 10/03/2027

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CHECKED:

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1	2026-03-25	

S102

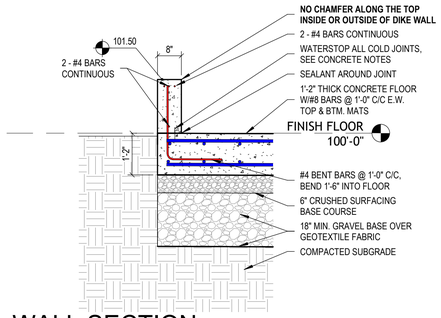
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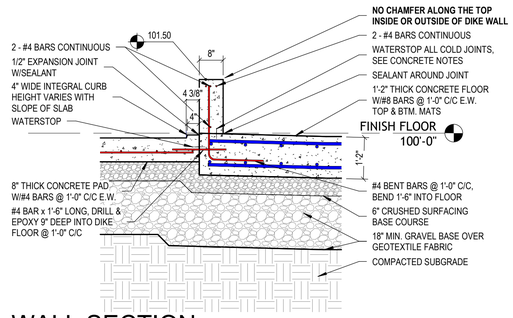
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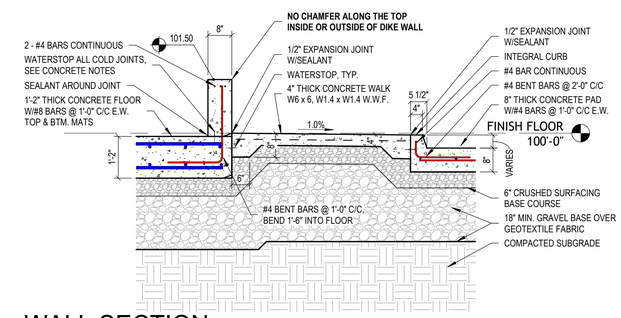
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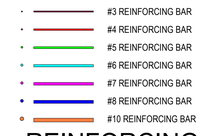
1 WALL SECTION
SCALE: 1/2" = 1'-0"



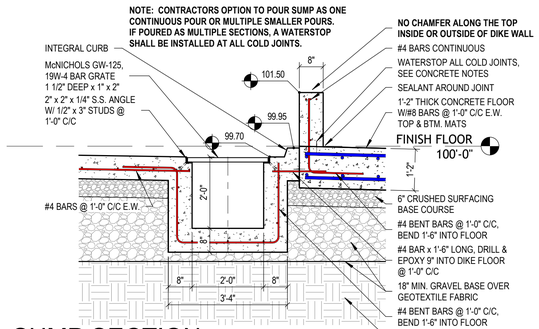
2 WALL SECTION
SCALE: 1/2" = 1'-0"



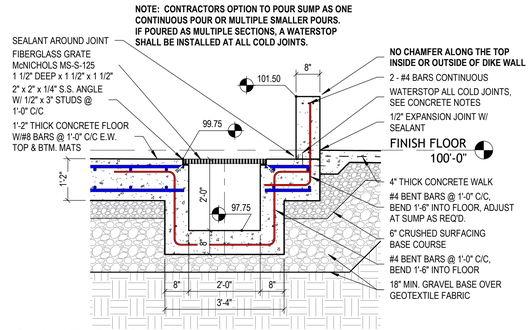
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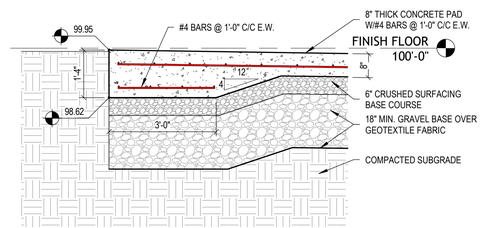
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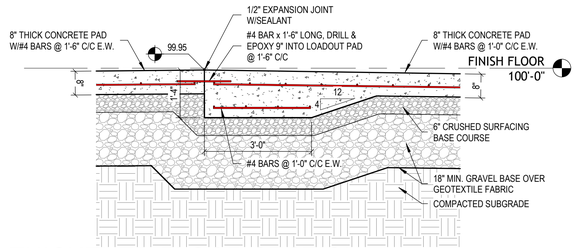
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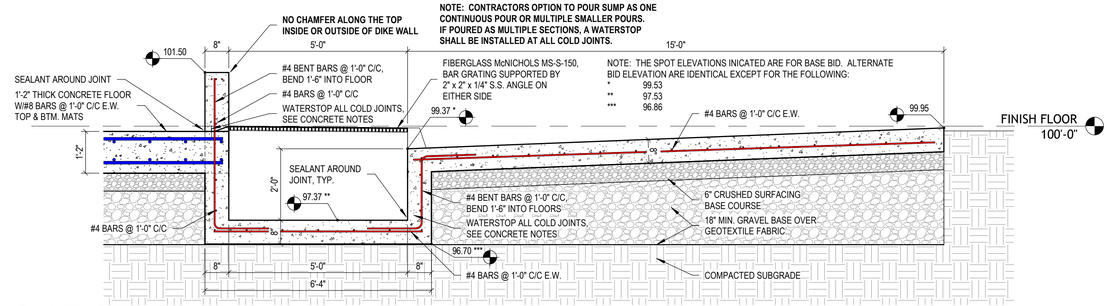
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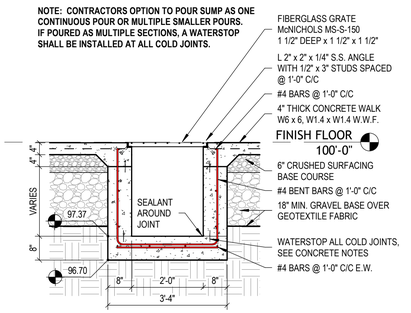
6 THICKENED FLOOR SECTION
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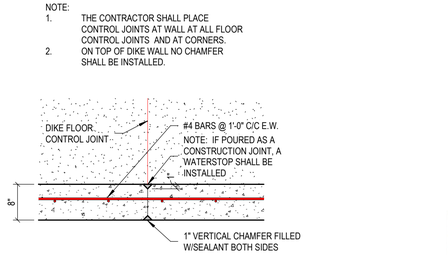
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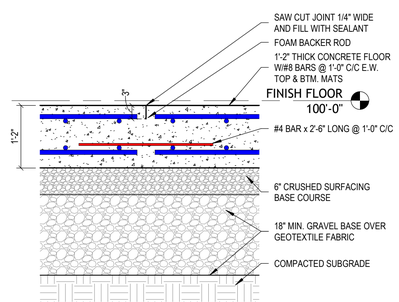
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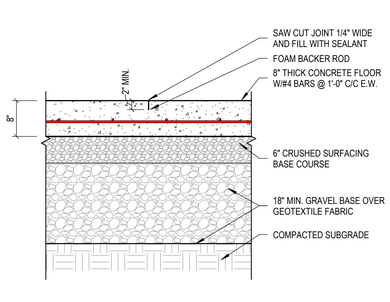
9 SUMP SECTION
SCALE: 1/2" = 1'-0"



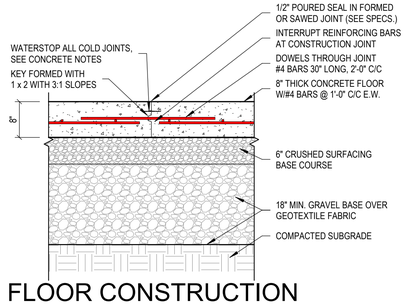
15 TYP. WALL CONTROL JOINT
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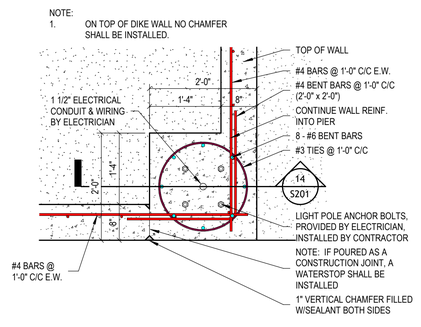
10 FLOOR CONTROL JOINT
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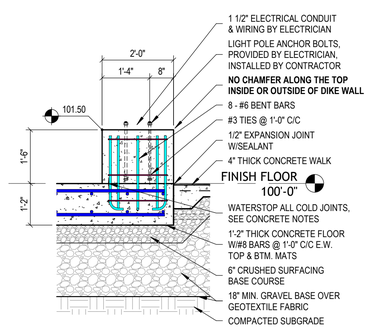
11 FLOOR CONTROL JOINT
SCALE: 3/4" = 1'-0"



FLOOR CONSTRUCTION JOINT
SCALE: 3/4" = 1'-0"



13 TYP. CORNER REINFORCING
SCALE: 3/4" = 1'-0"



14 LIGHT PIER DETAIL
SCALE: 1/2" = 1'-0"

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This bar is one inch long on original drawing.

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NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
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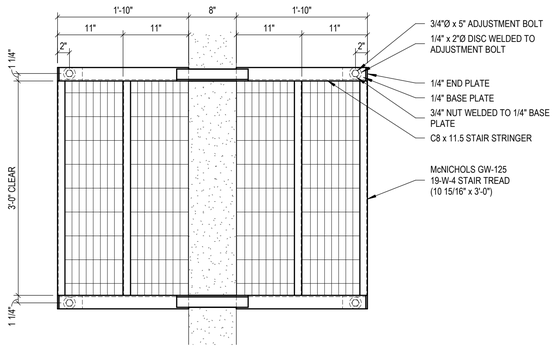


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DWG: 887MT-25
DRAWN: T.A.S.
CHECKED:
REVISIONS

S201

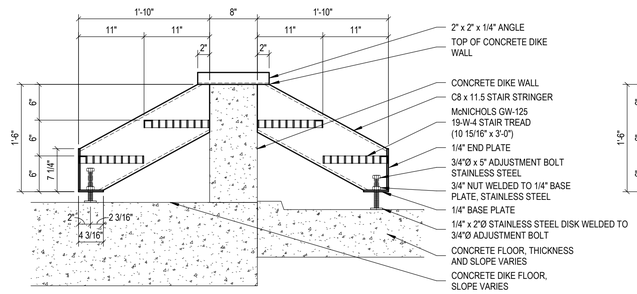
DATE: DEC. 2025



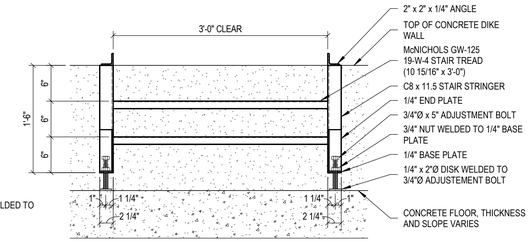
STAIRWAY PLAN

STAIRWAY NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION OF STAIRWAYS PRIOR TO FABRICATION.
2. ALL STEPS NEED TO BE EQUALLY SPACED INCLUDING ADJUSTMENT HEIGHT.



STAIRWAY SECTION



STAIRWAY ELEVATION

STAIRWAY DETAIL
BASE AND ALTERNATE

1 SCALE: 1" = 1'-0"

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NEW DIKE AND LOADPAD

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APRIL B. HOCK
STATE OF WASHINGTON
26006932
REGISTERED
PROFESSIONAL ENGINEER

4/31/2026

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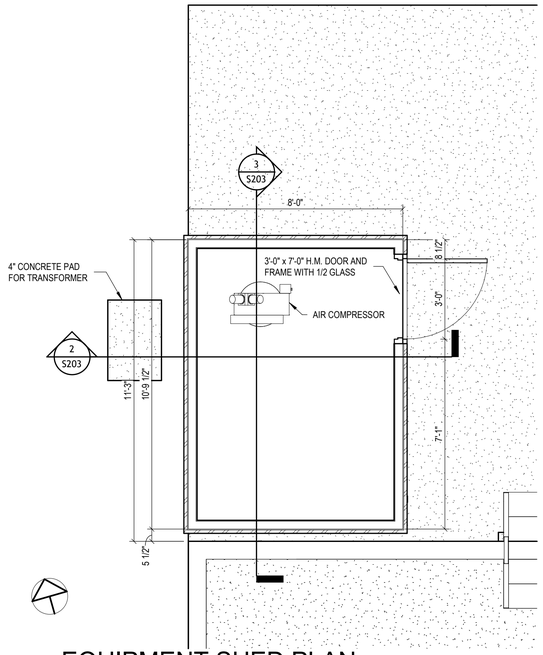
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DATE: DEC. 2025

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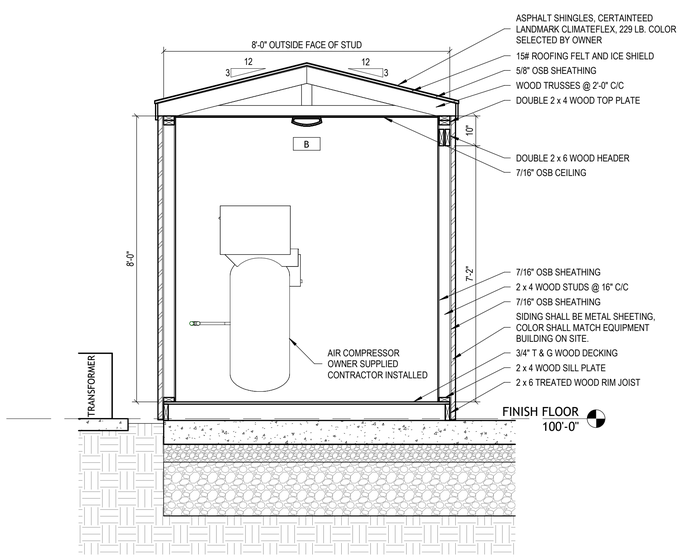
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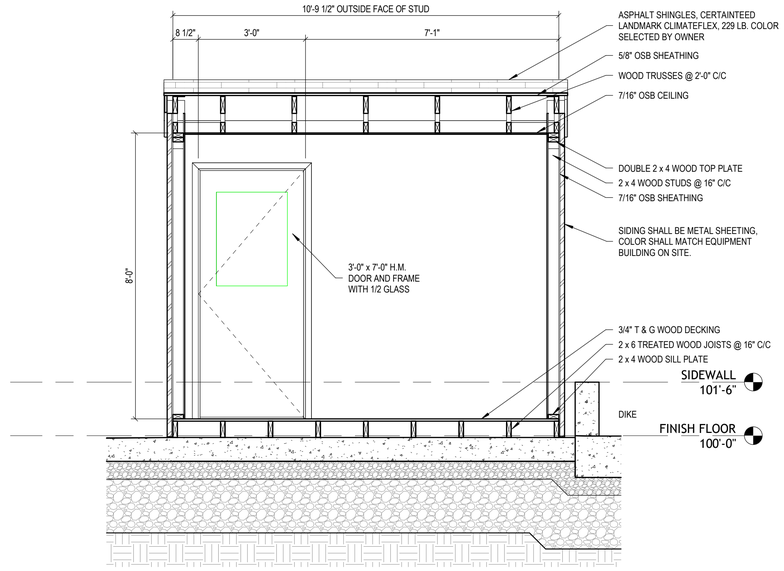
1 EQUIPMENT SHED PLAN

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



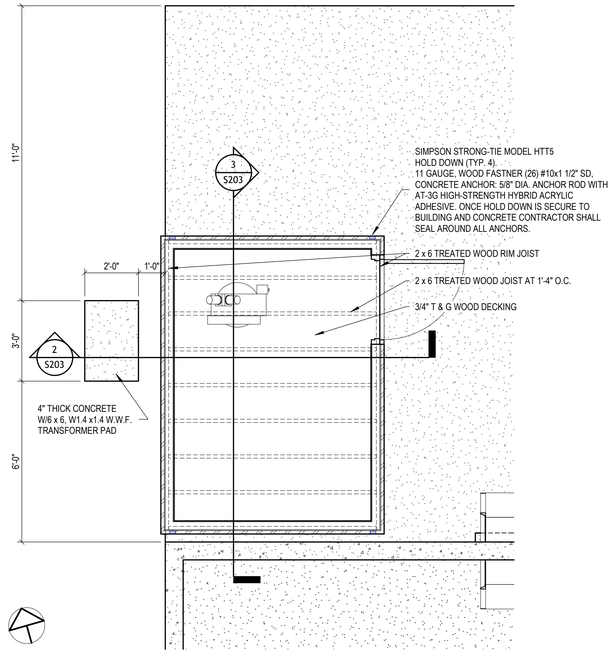
2 EQUIPMENT SHED SECTION

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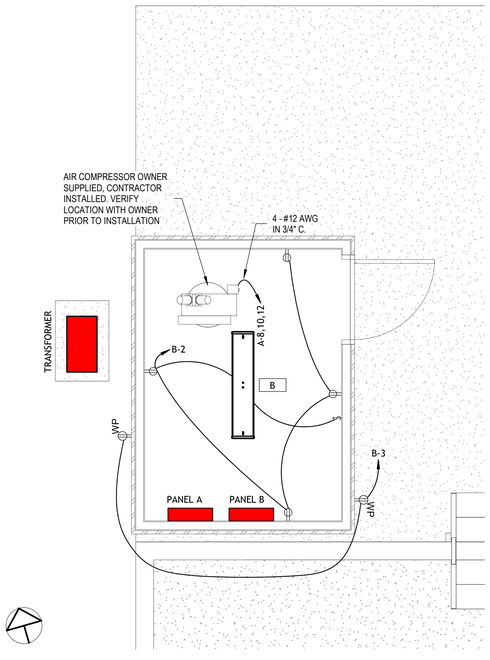
3 EQUIPMENT SHED SECTION

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



5 EQUIPMENT SHED STRUCTURAL PLAN

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



4 EQUIPMENT SHED ELECTRICAL PLAN

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

EQUIPMENT SHED LIGHT FIXTURE

B - LITHONIA LIGHTING MODEL FML4W 48 ALO6 SEF 840 MVOLT. SURFACE MOUNTED

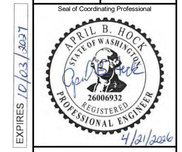
NEW DIKE AND LOADPAD

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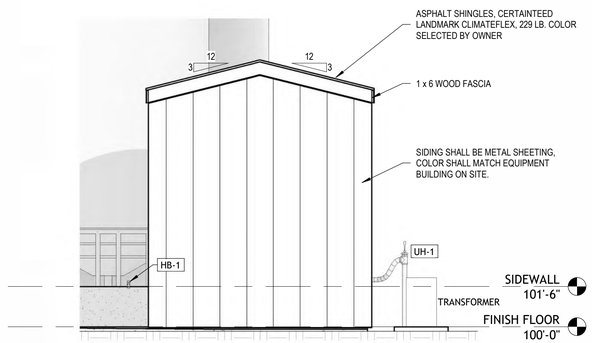
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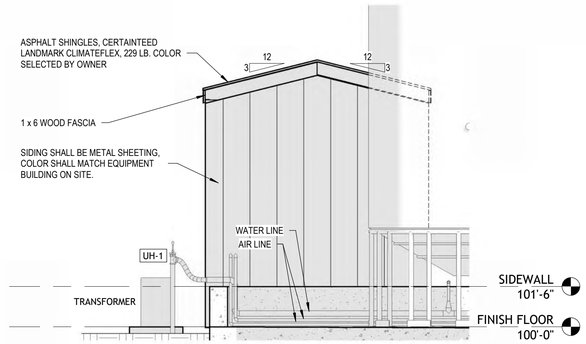
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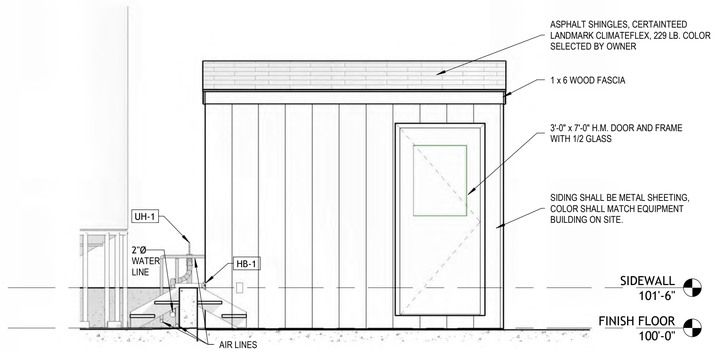
1 NORTH ELEVATION

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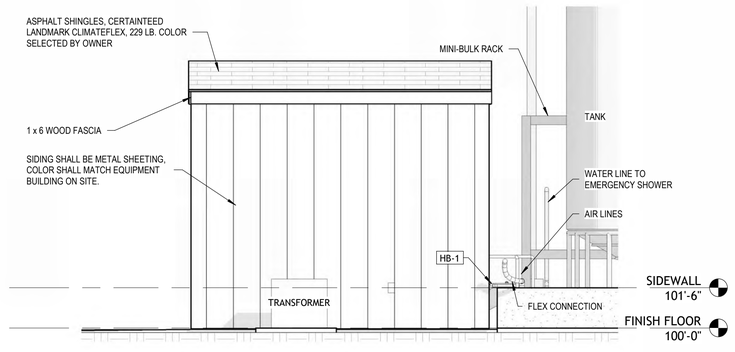
2 SOUTH ELEVATION

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



3 EAST ELEVATION

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



4 WEST ELEVATION

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

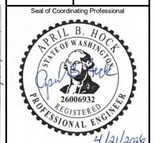
NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
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SECTION 03300 - CAST IN PLACE CONCRETE

1. GENERAL

Furnish all labor and materials to complete all items of plain and reinforced concrete work indicated on the drawings and/or specified herein. Contractor shall provide all items, articles, materials, operations or methods, listed, mentioned, or scheduled on the drawings and/or these specifications including all labor, materials, equipment, and incidentals necessary and required for their completion. Coordinate work of all trades regarding installation of embedded items.

3. CONCRETE TESTS

6" x 12" cylinders taken at point of placing in forms: taken, cured, and tested in accordance with ASTM standards by a recognized testing laboratory. The laboratory shall be selected by the engineer and tests paid for by the contractor and the contractor shall cooperate at all times and shall provide any labor and materials necessary to make concrete tests. The engineer shall order all tests. For each strength of concrete used take one set of two (2) cylinders for each day's pour but not less than one (1) set of cylinders for each 100 cubic yards poured. Test one (1) cylinder at seven (7) days and one (1) cylinder at twenty-eight days. In addition, when, in the opinion of the engineer, there is a possibility of the surrounding air temperature falling below 40 Degrees F., additional specimens to be cured under job conditions may be required.

If the average strength of the laboratory control cylinders for any portion of the structure falls below the compressive strengths called for in the specifications, the engineer shall have the right to order a change in the mix proportions or the water content for the remainder of the job. If the average strength of the job cured cylinders falls below the required strength, the engineer shall have the right to require conditions of temperature and moisture necessary to secure the required strength.

If either control cylinders or job-cured cylinders indicate that any portion of the structure contains concrete of less than the specified strength, the engineer shall have the right to order additional curing and/or core tests in accordance with "Standard Methods of Securing, Preparing and Testing Specimens of Hardened Concrete for compressive and Flexural Strength," ASTM Designation C42-62. He shall also have the right to order load tests in accordance with provisions of the local building code. Any portions of the structure found to be inadequate may be ordered strengthened or replaced and the costs of the remedial work and of the tests shall be borne by the contractor. Mail copies of all test reports to the owner, engineer, contractor and the local building department.

4. RECORD OF WORK

Keep record of time, date and location of each concrete pour and submit these records monthly to the engineer.

5. CEMENT

Portland Cement Type I conforming to "Standard Specifications for Portland Cement" ASTM Designation C150-62. Use same brand, well aged, throughout the project. Furnish mill test sheets on all cement used on the project. The amount used shall be six (6) sacks per cubic yard for Class "A" Concrete and six (6) sacks per cubic yard for class "B" Concrete.

6. CLASSES OF CONCRETE

All concrete shall be either Class "A" sand-gravel, Class "B" combined aggregate concrete, or Class "C" lightweight concrete as shown in the Plans and Specifications.

A. Class "A" Sand-Gravel Concrete

Sand-gravel for concrete shall be aggregate consisting of a mixture of sand and gravel composed of clean, hard, durable, unweathered, uncoated pebbles free from injurious amounts of soft or flaky particles, shale, alkali, organic matter or other deleterious material.

The gradation of sand-gravel for class "A" concrete shall meet the requirements that are prescribed in the following table:

Gradation, Total %	Min.	Max.
Retained on 1" sieve		0
Retained on No. 4 sieve	10	55
Retained on No. 10 sieve	50	75
Retained on No. 20 sieve	65	85
Retained on No. 30 sieve	80	95
Retained on No. 100 sieve	95	100
Passing No. 200 sieve, removed by washing		3.0
Clay lumps, % by weight		0.5

The gradation shown for sand-gravel aggregate represents the extreme limits which shall determine suitability for use from all sources of supply. The gradation from any one source shall be reasonably uniform and not subject to the extreme percentages of gradation as specified above.

For the purpose of determining the degree of uniformity, a fineness modulus determination shall be made upon representative samples submitted by the contractor. Sand-gravel from different sources of supply shall not be mixed or stored in the same pile or used alternately in the same class of construction or mix without permission from the engineer.

Organic Impurities: Sand-gravel subjected to the colorimetric test for organic impurities shall not show a color darker than the standard color specified in A.A.S.H.O. Designation T 21-42.

Soundness: Sand-gravel shall not have a loss greater than 15 percent of the weight average loss at 5 cycles when tested in magnesium sulfate. The soundness shall be determined by the Standard Method Of Test, A.A.S.H.O. Designation T 104-57.

The total weight of aggregate used shall be 2880 lbs. per cubic yard of concrete.

B. Class "B" Combined Aggregate Concrete -

Class "B" Concrete shall consist of a mixture of fine and coarse aggregates. The fine aggregate shall consist of gravel composed of clean, hard, durable, unweathered, uncoated pebbles free from injurious amounts of soft or flaky particles, shale, alkali, organic matter or other deleterious material.

The gradation of fine aggregate for Class "B" concrete shall meet the requirements that are prescribed in the following table:

Gradation %	Min.	Max.
Retained on 1" Sieve		0
Retained on No. 4 Sieve	5	25
Retained on No. 10 Sieve	35	55
Retained on No. 20 Sieve	60	80
Retained on No. 30 Sieve	70	85
Retained on No. 100 Sieve	95	100
Passing No. 200 Sieve, removed by washing		3.0
Clay lumps, % by weight		0.5

The coarse aggregate for Class "B" concrete shall consist of crushed limestone or granite and shall meet the gradation requirements shown in the following tables:

Gradation %	Min.	Max.
Retained on 1-1/2" Sieve		0
Retained on 1" Sieve	0	5
Retained on 3/4" Sieve	0	30
Retained on 3/8" Sieve	50	80
Retained on No. 20 Sieve	95	100

The gradation for fine and coarse aggregates represents the extreme limits which shall determine suitability for use from all sources of supply. The gradation from any one source shall be reasonably uniform and not subject to the extreme percentages of gradation as specified above. For the purpose of determining the degree of uniformity, a fineness modulus determination shall be made upon representative samples submitted by the contractor. Aggregates from different

sources of supply shall not be mixed or stored in the same pile nor used alternately in the same class of construction or mix without permission from the engineer.
The total weight of the combined aggregate shall be 3,000 pounds per cubic yard of which 70 percent shall be fine aggregate and 30 percent shall be coarse aggregate.

C. Class "C" Lightweight Concrete

Class "C" concrete shall consist of a mixture of sand, gravel and lightweight aggregates with gradations similar to Class "A" concrete. This concrete, when dry, shall have a unit weight between 100 and 110 lbs. per Cu. Ft. and a minimum 28 day compressive strength of 2000 psi. The Contractor may eliminate some of the cement to achieve the unit weight required, but in no case shall the cement content drop below 5 sacks per Cu.Yd.

This mixture shall generally conform to ACI 213, Guide for Structural Lightweight Aggregate Concrete.

7. WATER

Potable water, clean and free from deleterious amounts of oil, acids, alkalis, and organic matter, not to exceed six (6) gallons per sack of cement.

8. REINFORCING STEEL

Reinforcing steel shall be high strength deformed bars conforming to the requirements of ASTM A615 or ASTM A617 Grade 60.

9. WELDED WIRE FABRIC

Welded wire fabric shall be of gauge and mesh size shown on the drawings and shall conform to the requirements of ASTM A185.

10. ADMIXTURES

"Protex" air-entraining agent as manufactured by Protex Industries, Inc. Other admixtures for retarding or accelerating concrete may be used in strict accord with manufacturer's recommendation, upon approval of the engineer and provided strength tests have been performed on mixes containing the admixtures in the proportions to be used.

11. MEASUREMENTS

Measurements of solid materials to be by weight only, in pounds, with all ingredients weighed separately. Water to be by weight in pounds, or volume in U.S. gallons in such a manner as can be closely controlled for each batch of concrete. Total water content shall include moisture in the aggregates.

12. STORAGE OF MATERIALS

Cement and aggregates shall be stored in such a manner as to prevent deterioration or intrusion of foreign matter. Any material which has deteriorated or which has been damaged shall not be used for concrete.

13. CONCRETE MIX PROPORTIONS

Concrete to be proportioned according to laboratory designed mixes and producing minimum twenty-eight (28) day ultimate compressive strength of 3,500 psi for Class "A" concrete and 4,000 psi for Class "B" concrete.

A designated laboratory shall design the mixes and test the materials to be used for concrete. Laboratory mixes shall be of the same consistency and contain the same proportions of materials as the actual job mixes. Test specimens shall be made in accordance with "Standard Method of Making and Curing Concrete compression and Flexure Test Specimens in the Laboratory", ASTM Designation C192 and tested in accordance with "Standard Methods of Test for Compressive Strength of Molded Concrete Cylinders, Tentative", ASTM Designation C39. Contractor shall submit materials to the designated laboratory in ample time for testing. Copy of design to be submitted to the engineer and no substitutions shall be made without additional tests to show the quality of concrete is in accordance with these specifications. Cost of the design mix shall be borne by the general contractor. The maximum water-cement ratio allowable shall be 0.53.

14. CONCRETE CONSISTENCY

Slump shall be minimum consistent with placing requirements. Slump tests shall be made in accordance with "Slump Test for consistency of Portland Cement Concrete', ASTM Designation C143. The maximum slump and maximum size aggregate shall conform to the following limits.:

Structural Component	Slump	Maximum Size Aggregates
Footings	3"	3/4"
Walls	4"	3/4"
Slabs	4"	3/4"
Beams	3"	3/4"

15. AIR-ENTRAINMENT

Air-entraining agent shall be added to all concrete so as to entrain 6.0 percent plus or minus 1 percent entrained air by volume. Use air-entraining agents in strict accordance with recommendations of the manufacturer and testing laboratory for the design mix so as to assure strength requirements being fully met or exceeded.

16. MIXING

The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged. For job-mixed concrete, the mixer shall be rotated at speed recommended by the manufacturer. For stone concrete, mixing shall continue for at least one minute after all materials are in the mixer. Ready-mixed concrete shall be mixed and delivered in accordance with "Specifications for Ready-Mixed Concrete", ASTM Designation C94.

Sufficient time shall be allowed for proper mixing of the concrete to provide uniformity throughout the batch. Long delays in mixing or long waiting periods before the concrete is placed, shall be avoided. Over wet mixes shall be rejected and shall not be corrected by the addition of either aggregate or cement to the mixer. Mix no less than ten minutes in transit mix trucks after addition of the mixing water. If an extra charge of water is required at the job site because of too low a slump, the drum shall be turned a minimum of thirty (30) revolutions after addition of such water.

17. CONCRETE FORMS

Forms shall be of wood or metal conforming to shapes, lines, grades, and dimensions of concrete as shown on the drawings, suitable and adequate for intended use, and sufficiently tight to prevent leakage of mortar. Forms shall be properly braced and tied so as to maintain position during and after pouring of concrete and designed for removal without injury to the concrete. Undressed lumber, free from excessive knots is permitted for form-work for unexposed concrete. For exposed concrete work use plywood forms or form liners in large sheets with smooth, even edges, installed with close joints. Form tightening, arranged so that no metal is within 3/4" of surface after removal of forms. Set forms for all required anchors bolt inserts, slots, sleeves, supports, etc., furnished under other portions of this specification and installed under this section. All exposed edges shall be chamfered.

All forms shall be constructed so that all joints and edges conform to true lines and grades. If, in the opinion of the engineer, the forms do not satisfactorily comply with these requirements, he may required the contractor to take remedial action to produce the desired product.

Coat forms with approved sealers or non-staining oils prior to setting reinforcing.

18. REMOVAL OF FORMS

Forms shall be removed only when permitted by the engineer and then in such a manner as to insure the complete safety of the structure. Under normal conditions the following table shall be used as the minimum time in which forms may be removed, but its use shall not relieve the contractor of responsibility for safety of the structure.

Temperature	Above 60 D.	50 to 60 D.	40 to 50 D.
Walls	3 days	5 days	10 days
Side Forms of Beams	4 days	6 days	10 days
Bottom Forms of Slabs	10 days	14 days	18 days
Bottom Forms of Beams	14 days	18 days	21 days

Forms may be removed earlier if adequate shores or approved reshores are left in place. When temperatures below 40 Degrees F. occur, the shores shall remain in place for an additional time equal to the time the structure has been exposed to the lower temperature.

19. CONSTRUCTION JOINT

Construction joints are to be avoided in exposed concrete. Where necessary, joints and finish are to match adjacent concrete. Make construction joints in slabs and beams near the middle of the span in a manner to assure straight level joint. Provide additional web reinforcing as directed by the Engineer at points of heavy shear.

The contractor shall saw cut control joints in all exposed concrete slabs at minimum intervals of 15'. The joints shall be 2" deep on 8" thick slabs and 1-1/2" deep on 6" thick slabs.

Additional control joints shall be cut as shown on the plans or as directed by the engineer around floor penetrations or irregular sections.

All joints shall be filled with "Sonolastic TWO PART" polysulfide sealant as manufactured by Sonneborn, or equal. Primer #759 shall be applied as directed prior to applying sealant.

20. PLACING REINFORCING STEEL

Reinforcing steel, at the time concrete is placed, shall be free from loose rust, scale, or other coatings that will destroy or reduce bond. Reinforcing shall be accurately placed as shown on the drawings and shall be adequately secured in position by metal chairs and spacers. Splicing of bars shall be made as close as practicable to points of minimum stress. Splice lengths shall be indicated on the drawings or in accord with ACI Code requirements.

Place Wire Mesh. Extend fabric to within two inches (2") of the edges of the slab and lap splices at least one and one-half (1-1/2) courses of the fabric and a minimum of six inches (6"). Tielaps and splices securely at ends and at least every 24 inches with 16-gauge black soft-annealed steel wire. Pull the fabric into position as the concrete is placed by means of hooks and work concrete under the steel to insure that it is placed at the proper distance above the bottom of the slab.

21. CONCRETE PROTECTION FOR REINFORCEMENT

Where not otherwise indicated on the Plans, the minimum thickness of concrete over the reinforcement shall be as follows:

A. Where concrete is deposited against ground without forms - 3".

B. Where concrete is exposed to the weather, or exposed to the ground but placed in forms - 2" for bars not larger than #5, 1-1/2" for #5 bars or smaller.

C. Slabs and walls not exposed to the ground or weather - 3/4".

D. Beams not exposed to ground or weather - 1-1/2".

22. PLACING CONCRETE

A. Before placing concrete, all equipment for mixing and transporting concrete shall be cleaned, all debris and ice shall be removed from places to be occupied by concrete, forms shall be thoroughly oiled and all reinforcement cleaned of ice or other coatings. Water shall be removed from place of deposit before concrete is placed.

B. Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of the materials. Equipment for chuting, pumping or pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery and without separation of the materials.

C. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the space between the bars. No concrete that has partially hardened or been contaminated by foreign matter shall be deposited on the work nor shall retempered concrete be used.

When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed. The top surface shall be generally level. Place concrete in approximately horizontal layers, avoiding displacement of reinforcement above fresh concrete and formation of seams and planes of weakness in sections.

D. Place concrete in layers not over 30" deep; compact each layer by mechanical internal vibrating equipment supplemented by handspading, rodding, tamping, as directed. Do not use vibrators to transport concrete inside forms. Use of form vibrators is not permitted.

Limit vibration to time necessary to produce satisfactory consolidation without causing objectionable segregation. Do not insert vibrator into lower courses that have begun to set.

E. Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near-freezing weather. No frozen materials or materials containing ice shall be used.
All concrete materials and all reinforcement, forms, fillers and earth with which the concrete is to come in contact shall be free from frost.

Whenever the temperature of the surrounding air is below 40 Degrees F. all concrete placed in the forms shall have a temperature of between 50 Degrees F. and 70 Degrees F., and adequate means shall be provided for maintaining a temperature of not less than 70 Degrees F. for three (3) days or 50 Degrees F. for five (5) days. The housing covering or other protection used in connection with curing shall remain in place and intact for at least 24 hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemical for the prevention of freezing.

F. Before concrete is placed, contractor must obtain Engineer's approval of forms, position and securing of reinforcement.

G. Immediately after placing or finishing, protect concrete surfaces not covered by forms from loss of surface moisture. Keep all concrete in a moist condition for at least five (5) days after placement. Curing compounds may be used upon approval of the Engineer.

23. CONCRETE PATCHING

Immediately after stripping form work, patch minor defective, honeycombed areas; fill holes before concrete is thoroughly dry. Chip areas away to a minimum one inch (1") depth in solid concrete with edges regular, perpendicular to surface. Thoroughly wet the areas to be patched including areas at least six inches (6") wide entirely surrounding it just prior to placing patching mortar.

Fill tie holes left by withdrawal of rods or holes left by removal of ends of ties solidly with mortar. For holes passing entirely through walls, use plunger type grease gun or other device to force mortar through wall starting at back face. Hold cloth over hole on outside; when hole is filled completely, strike off excess mortar with cloth flush with surface. Fill holes not passing entirely through walls with tool that will permit filling holes solidly with mortar. Strike off with cloth, any excess mortar at wall surface.

24. SURFACE FINISH

Exposed concrete surfaces: Obtain smooth finish on exposed surfaces with plywood forms or form linings; use larger sheets with smooth, even edges; install with close joints. Smooth all joint marks, remove blemishes; leave finished surfaces smooth, unmarred. Conform to tolerances; no fins or offsets in surfaces exceeding 1/16"; variations in level, not to exceed 1/8" in 10-0".

Floor finish shall be as specified on the "S" Sheets – comply with ACI 301.

25. TOLERANCES FOR CONCRETE CONSTRUCTION

A. General.-- The intent of this paragraph is to establish tolerances that are consistent with modern construction practice, yet are governed by the effect that permissible deviations will have upon the structural action or operational function of the structure. Deviations from the established lines, grades, and dimensions will be permitted to the extent set forth herein: Provided, that the Engineer reserves the right to diminish the tolerances set forth herein if such tolerances impair the structural action or operational function of a structure or portion thereof.

Where specific tolerances are not stated in these specifications or shown on the drawings for a structure, portion of a structure, or other feature of the work, permissible deviations will be interpreted conformably to the tolerances stated in this paragraph for similar work. Specific maximum or minimum tolerances shown on the drawings in connection with any dimension shall be considered as supplemental to the tolerances specified in this paragraph, and shall govern. The contractor shall be responsible for setting and maintaining concrete forms within the tolerance limits necessary to insure that the completed work will be within the tolerances specified. Concrete work that exceeds the tolerance limits specified in these specifications or shown on the drawings shall be remedied or removed and replaced at the expense of and by the Contractor.

B. TOLERANCES
(1) Floors, walls and walks:
(a) Departure from established alignment .....1 inch
(b) Departure from established grade .....1/4 inch
(c) Variation from plumb or specified batter for lines and surfaces of columns, piers, walls, and for arrises.
Exposed, in any length of 10 feet .....1/4 inch
Backfilled, in any length of 10 feet .....1 inch
(d) Variation from level or from grades indicated on the drawings for slabs, beams, horizontal grooves, and railing offsets
Exposed, in any length of 10 feet .....1/4 inch
Backfilled, in any length of 10 feet .....1 inch
(2) Variation in cross-sectional dimensions of slabs, walls, beams and similar parts of the structures in (1) above
Minus .....1/4 inch
Plus .....1/2 inch
(3) Footings:
(a) Variation of dimensions in plan Minus .....1/2 inch
Plus ..... 2 inches
(b) Misplacement or eccentricity
2 percent of the footing width in the direction of misplacement but not more than.....2 inches
(c) Reduction in thickness of specified thickness .....5 percent

(4) Variation in sizes and locations of slab and wall openings .....1/2 inch
(5) Variation from plumb of pipe erected vertically.
In any length of 10 feet .....1/2 inch

C. TOLERANCES FOR PLACING REINFORCING STEEL.
(1) Reinforcing steel, all structures:
(a) Variation of protective covering
With cover of 2-1/2 inches or less .....1/4 inch
(b) Variation from indicated spacing .....1 inch

26. PROTECTION

The contractor shall protect all concrete against injury until final acceptance by the Engineer.

Fresh concrete shall be protected from damage due to rain, hail, sleet, or snow. The contractor shall provide such protection while the concrete is still plastic and whenever such precipitation, either periodic or sustaining, is imminent or occurring, as determined by the Engineer.

Immediately following the first frost in the fall, the contractor shall be prepared to protect all concrete against freezing. After the first frost, and until the mean daily temperature in the vicinity of the worksite falls below 40 Degrees F. for more than one day, the concrete shall be protected against freezing temperatures for not less than 48 hours after it is placed. After the mean daily temperature in the vicinity of the worksite falls below 40 Degrees F. for more than one day, the concrete shall be maintained at a temperature not lower than 50 Degrees F. for at least 72 hours after it is placed.

Concrete cured with curing compound will require no additional protection from freezing if the protection at 50 Degrees F. for 72 hours is obtained by means of approved insulation in contact with the forms or concrete surfaces; otherwise, the concrete shall be protected against freezing temperatures for 72 hours immediately following 72 hours protection at 50 Degrees F. Concrete cured by water curing shall be protected against freezing temperatures for three days immediately following the 72 hours of protection at 50 Degrees F.

Discontinuance of protection against freezing temperatures shall be such that the drop in temperature of any portion of the concrete will be gradual and will not exceed 40 Degrees F. in 24 hours. After March 15, when the mean daily temperature rises above 40 Degrees F. for more than three successive days, the specified 72-hour protection at a temperature not lower than 50 Degrees F. may be discontinued for as long as the mean daily temperature remains above 40 Degrees F.; provided that the concrete shall be protected against freezing temperatures for not less than 48 hours after placement.

Where artificial heat is employed, special care shall be taken to prevent the concrete from drying. Use of unvented heaters will be permitted only when unformed surfaces of concrete adjacent to the heaters are protected for the first 24 hours from an excessive carbon dioxide atmosphere by application of curing compound.

27. CURING

A. General. Concrete shall be cured as hereinafter specified. The contractor shall furnish all materials for curing concrete.

Concrete shall be cured either by water curing in accordance with Subparagraph b. or by application of a curing compound in accordance with Subparagraph c., except as otherwise hereinafter provided.

Construction joints shall be cured by either water in accordance with Subparagraph b. or by application of a curing compound in accordance with Subparagraph c.

The unformed top surfaces of walls and curbs shall be moistened by covering them with water-saturated material or by other effective means as soon as the concrete has hardened sufficiently to prevent damage by water. These surfaces and steeply sloping and vertical formed surfaces shall be kept completely and continually moist, prior to and during form removal, by water applied on the unformed top surfaces and allowed to pass down between the forms and the formed concrete faces. This procedure shall be followed by the specified water curing or curing by application of a curing compound.

B. Water curing. Concrete cured with water shall be kept wet for at least 14 days from the time the concrete is placed, except that such curing shall be discontinued shortly before covering with fresh concrete when the 14-day period has not been completed, allowing only sufficient time to prepare the surfaces of the previously placed concrete and bring them to a surface-dry condition, as specified; provided, that water curing of concrete may be reduced to six days during periods when the mean daily temperature in the vicinity of the worksite is less than 40 Degrees F.; provided further, that during the prescribed period of water curing, when temperatures are such that concrete surfaces may freeze, water curing shall be temporarily discontinued. The concrete surfaces shall be kept wet by covering them with water-saturated material; by using a system of perforated pipes, mechanical sprinklers, or porous hose; or by any other approved method which will keep all surfaces to be cured continuously (not periodically) wet. Water used for curing shall meet the requirements of these specifications for water used for mixing concrete.

C. Compound curing. Curing by this method shall be by application of a curing compound on concrete surfaces to form a water-retaining film on the surfaces. The curing compound shall be white pigmented and shall conform to ASTM C309, Type 2, Class B and AASHTO M-148. The compound shall be of uniform consistency and quality within each container and from shipment to shipment.

The curing compound shall be mixed thoroughly and applied to the concrete surfaces by spraying on one coat to provide a continuous, uniform film over all areas. The coverage rate shall not exceed the manufacturer's recommendation and on rough surfaces the coverage rate shall be decreased as necessary to obtain the required continuous film.

Forms on surfaces to be cured by application of a curing compound shall be removed as soon as the concrete has hardened sufficiently to prevent damage by careful form removal.

Mortar encrustations and fins on surfaces designated to receive rubbed finishes shall be removed prior to application of curing compound. The repair of all other surface imperfections shall not be made until after application of the curing compound. When curing compound is used on formed concrete surfaces, application of the curing compound shall commence immediately after the finished surface has attained a dull appearance, free from bleeding or "shine". When curing compound is to be used on formed concrete surfaces, the surfaces shall be moistened with a light spray of water immediately after the forms are removed and shall be kept wet until the surfaces will not absorb more moisture. As soon as the surface film of moisture disappears but while the surface still has a damp appearance, the curing compound shall be applied. Special care shall be taken to insure ample coverage with the compound at edges, corners, and rough spots of formed surfaces. After application of the curing compound has been completed and the coating is dry to touch, any required repair of concrete defects or gross surface imperfections shall be performed without delay. Each repair, after being finished, shall be moistened and coated with curing compound in accordance with the foregoing requirements.

Any curing compound that is damaged, or that peels from concrete surfaces within 28 days after application, shall be repaired without delay in an approved manner.

D. Sampling, testing, and certification of curing compounds. The Engineer will require certification of all curing compound prior to use or application. However, acceptance of the material will not be made until the material has been satisfactorily applied at the jobsite.

Certifications shall be furnished to the Engineer's representative at the jobsite. Certifications shall contain a general statement that the material complies with the requirements of the specifications, and also specific identification data as to specifications number, batch number, materials identification and quantity.

The contractor shall be responsible for the accuracy of all certifications submitted or data contained therein whether submitted by him, a manufacturer, or a subcontractor. The costs and delays from additional testing required as a result of rejection of materials shall be the respon

I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

This bar is one inch long on original drawing.

If not one inch on this sheet, adjust scales accordingly

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NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
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S301

DATE: DEC. 2025

05500 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the following metal fabrications:

1. Rough hardware
2. Ladders
3. Miscellaneous framing, supports and trim
4. Metal bar gratings
5. Steel pipe guardrails and handrails
6. Metal stairs
7. Pipe bollards

1.2. REFERENCES

A. Aluminum Association (AA)

B. American National Standards Institute (ANSI)
1. A14.3 - Safety Requirements for Fixed Ladders

C. American Society of Testing and Materials (ASTM)

D. American Welding Society (AWS)
1. Structural Welding Code - Steel
2. Structural Welding Code - Sheet Steel

E. National Association of Architectural Metal Manufacturers (NAAMM)
1. AMP 500 Metal Finishes Manual
2. AMP 510 Metal Stair Manual
3. MBG 531 Metal Bar Grating Manual
4. MBG 532 Heavy Duty Metal Bar Grating Manual and Pipe Railing Manual

F. Steel Structures Painting Council (SSPC)

1.3. DEFINITIONS

A. Refer to ASTM E985 for railing-related terms that apply to this section.

B. Refer to the NAAMM publications listed in Article 1.02 "References" for definition of terms that apply to this section.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Section 01 33 00, "Submittal Procedures".

B. Product Data: Submit product data for products used in metal fabrications, including paint products, grout and fasteners.

C. Shop Drawings: Submit detailed shop and erection drawings of each metal fabrication indicated.
Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

D. Welder certificates signed by the Contractor certify that welders comply with requirements specified in 1.05C.

E. Welding Procedures: Provide written welding procedure specification (WPS) document per AWS Code requirements.

F. Qualification data for firm specified in 1.05B to demonstrate their capabilities and experience.

1.5 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of the following, except as otherwise indicated. Where conflicts occur, comply with the more stringent requirements.
1. ANSI 14.3
2. AWS D1.1 and D1.3
3. NFPA 101

B. Fabricator Qualifications: Firm experienced in successfully producing metal fabrications similar to that shown on the drawings, with sufficient production capacity to produce required units without causing delay in the work.

C. Qualify welding processes and welding operators in accordance with AWS D1.1 and D1.3. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

D. All materials used shall be free of lead and asbestos fibers.

PART 2 - PRODUCTS

2.1 FERROUS METALS

A. Metal Surfaces, General: Form metal fabrications exposed to view upon completion of the work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials whose exposed surfaces exhibit pitting, seam marks, roller marks, rolled trade names, roughness, and, for steel sheet, variations in flatness exceeding those permitted by referenced standards for stretcher-leveled sheet.

B. Steel Plates, Shapes, and Bars: ASTM A36.

C. Rolled Steel Floor Plates: ASTM A786.

D. Steel Bars for Gratings: ASTM A569 or ASTM A36.

E. Wire Rod for Grating Cross Bars: ASTM A510.

F. Steel Tubing: Cold-formed, ASTM A500, Grade B, unless otherwise indicated.

G. Uncoated Structural Steel Sheet: Hot-rolled, ASTM A570, Grade 30 unless otherwise indicated.

H. Uncoated Steel Sheet (Commercial quality): Cold-rolled, ASTM A366.

I. Galvanized Steel Sheet: Quality as follows:
1. Structural Quality: ASTM A446; Grade A, unless another grade required for design loading, and G90 coating designation unless otherwise indicated.
2. Commercial Quality: ASTM A526, G90 coating designation unless otherwise indicated.

J. Steel Pipe: ASTM A53, Type S, Grade B, standard weight (schedule 40), black finish, unless otherwise indicated.

K. Gray Iron Castings: ASTM A48, Class 30.

L. Malleable Iron Castings: ASTM A47, Grade 32510.

M. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

N. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A47, or cast steel, ASTM A27. Provide bolts, washers, and shims as required, hot-dip galvanized per ASTM A153.

O. Welding Rods and Bare Electrodes: Select in accordance with AWS specifications for the metal alloy to be welded.

2.2 STAINLESS STEEL

A. Bar Stock: ASTM A276, Type 302 or 304.

B. Plate: ASTM A167, Type 302 or 304.

2.3 ALUMINUM

A. Extruded Bars and Shapes: ASTM B221, alloy 6061-T6 or 6063-T6 for bearing bars of gratings and shapes and 6061-T6 for grating cross bars.

B. Aluminum-Alloy Rolled Tread Plate: ASTM B632, alloy 6061-T4 for treads and 6061-T6 for platforms.

2.4 GROUT

A. Non-shrink Nonmetallic Grout: Premixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section. Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to the following:
1. Euco N-S Grout - Euclid Chemical Co.
2. Kemset - Chem-Masters Corp.
3. Crystex - L & M Construction Chemicals, Inc.
4. Sonogrout - Sonneborn Building Products Div., Rexnord Chemical Products, Inc.

2.5 FASTENERS

A. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required. Suspect/counterfeit bolts will not be accepted and will be replaced at Contractor's expense.

2.6 PAINT

A. Shop Primer for Ferrous Metal: Red oxide, lead- and cadmium-free, corrosion- inhibiting primer complying with performance requirements of FS TT-P-664.

B. Galvanizing Repair Paint: High zinc dust content paint for galvanizing welds in galvanized steel, with dry film containing not less than 94% zinc dust by weight, and complying with SSPC-Paint-20.

C. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint-12 except containing no asbestos fibers.

D. Zinc Chromate Primer: FS TT-P-645.

E. Safety Yellow: Rust-Oleum DTM Alkyd Enamel C740 System or equal.

2.7 CONCRETE FILL

A. Concrete Materials and Properties: Comply with requirements for Section 03 30 00, "Cast-in-Place Concrete" for normal weight, ready-mix concrete with minimum 28- day compressive strength of 3000 psi (21 MPa), unless higher strength indicated.

B. Nonslip Aggregate Finish: Factory-graded, packaged material containing fused aluminum oxide grits or crushed emery as abrasive aggregate; rust-proof and non- glazing; unaffected by freezing, moisture, or cleaning materials.

2.8 FABRICATION - GENERAL

A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

C. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.

Temperature change (Range): 100 ° F (38 ° C).

D. Shear and punch metals cleanly and accurately. Remove burrs.

E. Ease exposed edges to a radius of approximately 1/32" (0.794 mm), unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

F. Remove sharp or rough areas on exposed traffic surfaces.

G. Weld corners and seams continuously to comply with AWS recommendations and the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matched those adjacent.

H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

J. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

K. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware, screws, and similar items.

L. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.9 ROUGH HARDWARE

A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required. Fabricate items to sizes, shapes, and dimensions required.

2.10 STEEL LADDERS

A. General: Exterior fixed ladders shall meet OSHA requirements found in 29CFR1910.27, with the exception that #6 rebar is not to be used. Fabricate ladders for the locations shown, with dimensions, spacing's, details and anchorages as indicated. Comply with requirements of ANSI A14.3 where conflicts occur, comply with the more stringent requirements.

B. Side Rails: Continuous steel flat bars, minimum size (cross section) 2½" x ¾" (63.5 mm x 9.5 mm), with eased edges, spaced 18" (0.46 m) apart.

C. Bar Rungs: Round steel bars, minimum ¾" (19.1 mm) diameter spaced no greater than 12" (305 mm) o.c. and uniform throughout the length of the ladder. Individual metal rungs embedded in concrete which serve as access to pits and other areas under floors, should have a minimum diameter of 1" (25 mm) or shall otherwise be treated to resist corrosion and rusting.

D. Fit rungs in centerline of side rails, plug weld and grind smooth on outer rail faces.

E. Support each ladder at top and bottom and at intermediate points spaced not more than 5'-0"
(1.5 m) o.c. by means of welded brackets, unless otherwise indicated.
1. Size brackets to support design dead and live loads indicated and to hold centerline of ladder rungs clear of the wall surface by not less than 7" (178 mm).
2. Extend side rails 42" (1.1 m) above top rung, and return rails to wall or structure unless other secure handholds are provided. If the adjacent structure does not extend above the top rung, goose-neck the extended rails back to the structure to provide secure ladder access.

2.12 MISCELLANEOUS METAL ITEMS

A. Miscellaneous Framing and Supports: Provide steel framing and supports for applications indicated, which are not parts of structural steel framework, as required to complete work.

1. Fabricate units to sizes, shapes, and profiles indicated and required to receive adjacent other construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
2.Equip units with integrally welded anchors for casting into concrete or building into masonry.Furnish inserts if units must be installed after concrete is placed. Except as otherwise indicated, space anchors 24" (61 cm) o.c. and provide minimum anchor units in the form of steel straps 1¼" wide x ¼" x 8" long (31.8 mm x 6.4 mm x 203 mm).

B. Miscellaneous Steel Trim: Provide shapes and sizes indicated for profiles shown. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings, and anchorages as required for coordination for assembly and installation with other work.

2.13 METAL BAR GRATINGS

A. General: Produce metal bar gratings of description indicated per NAAMM marking system that complies with the following:
1. Metal Bar Grating Standard: "Standard Specifications for Metal Bar Grating and Metal Bar Grating Treads" published in ANSI/NAAMM MBG 531.
2. Heavy Duty Metal Bar Grating Standard: "Guide Specifications for Heavy Duty Metal Bar Grating" published in ANSI/NAAMM MBG 532.

B. If gratings are located in walking surfaces, gratings shall have spaces no greater than ½" (12.7 mm) wide in one direction. If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

C. Fabricate steel gratings to comply with requirements as indicated on the drawings.

D. Traffic Surface for Steel and Aluminum Bar Gratings: Plain, unless otherwise indicated.

E. Steel Finish: Shop prime paint applied in accordance with manufacturer's standard practice.

F. Aluminum Finish: Mill (as fabricated), unless otherwise indicated.

G. Fabricate removable grating sections with banding bars attached by welding to entire perimeter of each section. Include anchors and fasteners of type indicated, or if not indicated, as recommended by manufacturer, for attachment to supports.
1. Heavy Duty Grating: Provide not less than 4 anchor blocks, ¼" (6.4 mm) minimum thickness, for each section of grating composed of bearing bars over 3/16" (4.8 mm) in thickness, with each block shop-welded to 2 bearing bars.
2. Non-heavy Duty Grating: Provide not less than 4 saddle clips for each grating section composed of rectangular bearing bars 3/16" (4.8 mm) or less in thickness and spaced not less than 15/16" (23.8 mm) o.c., with each clip designed and fabricated to fit over 2 bearing bars. Furnish threaded bolts with nuts and washers for each clip required, unless otherwise indicated.

H. Attach toe plates to grating by welding, unless otherwise indicated. Toe plate height: 4" (102 mm), unless a greater height indicated.

I. Fabricate cutouts in grating sections for penetrations indicated. Arrange layout of cutouts to permit grating removal without disturbing items penetrating gratings.
1. Edge band openings in grating that interrupt 4 or more bearing bars with bars of same size and material as bearing bars.
2. Do not notch bearing bars at supports to maintain elevation.

J. Available Manufacturers: Subject to compliance with requirements, manufacturers offering metal bar gratings that may be incorporated in the work include, but are not limited to, the following:
1. Alabama Metal Industries Corp
2. Barnet/Bates Corp
3. Big D Metals
4. McNichols

2.14 STEEL PIPE GUARDRAILS AND HANDRAILS

A. General: Fabricate pipe guardrails and handrails to comply with requirements indicated for dimensions, details, finish, and member sizes, including wall thickness of pipe, post spacing's, and anchorage.
1. Interconnect guardrails and handrail members by butt-welding or Welding with internal connectors, at fabricator's option, unless otherwise indicated. At tee and cross intersections, cope ends of intersecting members to fit contour of pipe to which end is joined, weld all around and grind smooth.

B. Form changes in directions of railing members as follows:
1. By use of welded prefabricated steel elbow fittings
2. By bending, of radius indicated
3. By mitering at elbow bends

C. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross- section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of pipe.

D. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.

E. Close exposed ends of pipe by welding 3/16" (4.8 mm) thick steel plate in place or by use of prefabricated fittings, except where clearance of end of pipe and adjoining wall surface is ½" (6.4 mm) or less.

F. Toe Boards: Where indicated, provide toe boards at railings around openings and at the edge of open- sided floors and platforms. Fabricate to dimensions and details indicated, or if not indicated, use 4 inches high x ¼" (102 mm x 6.4 mm) steel bar welded to each railing post.

G. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnections of pipe and attachment of guardrails and handrails to other work. Furnish inserts and other anchorage devices for connecting guardrails and handrails to concrete or masonry work.
1. For railing posts set in concrete, fabricate sleeves from steel pipe not less than 6" (152 mm) long and with an inside diameter not less than ½" (12.7 mm) greater than the outside diameter of post, with steel plate closure welded to bottom of sleeve.
2. For removable railing posts, fabricate slip-fit sockets from steel pipe whose inside diameter is sized for a close fit with posts and to limit deflection of post without lateral load, measured at top, to not more than 1/12" of post height. Provide socket covers designed and fabricated to resist accidental dislodgement.

H. Fillers: Provide steel sheet or plate fillers of thickness and size indicated or required to support structural loads of handrails where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses. Size fills to produce adequate bearing to prevent bracket rotation and overstressing of substrate.

2.15 STEEL FRAMED STAIRS

A. General: Construct stairs to conform to sizes and arrangements indicated with welded connections, unless otherwise indicated. Provide complete stair assemblies, including metal framing, hangers, columns, railings, newels, balusters, struts, clips, brackets, bearing plates, and other components necessary for the support of stairs and platforms, and as required to anchor and contain the stairs on the supporting structure.
1. Fabricate treads and platforms of exterior stairs to accommodate slopes to drain in finished traffic surfaces.

B. Stair Framing: Fabricate stringers of structural steel channels, or plates, or a combination thereof, as indicated. Provide closures for exposed ends of stringers. Construct platforms of structural steel channel headers and miscellaneous framing members as indicated. Bolt or weld headers to stringers, newels, and framing members to stringers and headers; fabricate and join so that bolts, if used, do not appear on finish surfaces.

C. Metal Pan Risers, Sub-treads, and Sub-platforms: Shape metal pans for risers and sub-treads to conform to configuration shown. Provide thickness of structural steel sheet for metal pans as indicated.
1. Form metal pans of uncoated cold-rolled steel sheet, unless otherwise indicated.
2. Form metal pans of galvanized steel sheet, where indicated on the drawings.
3. Attach Risers and Sub-treads to Stringers by the following methods:
a. Directly weld risers and sub-treads to stringers; locate welds on side of metal pans to be concealed by concrete fill.
b. Attach by means of brackets made of steel angles or bars. Weld brackets to stringers and attach metal pans to brackets by welding or bolting.

D. Provide sub-platforms of configuration and construction shown, with thickness of structural steel sheet as indicated. Attach sub-platform to platform framing members with welds or as otherwise indicated. Construct sub-platforms with smooth soffits.

E. Steel Floor Plate Treads and Platforms: Provide raised pattern steel floor plate in pattern indicated or, if not indicated, as selected from manufacturer's standard patterns.
1. Form treads of ¼" (6.4 mm) thick raised pattern steel floor plate with integral nosing and back edge stiffener. Weld steel supporting brackets to stringers and treads to brackets.
2. Fabricate platforms of raised pattern steel floor plate of thickness indicated. Provide nosing matching that on treads at all landings. Secure to platform framing members with welds.

F. Floor Grating Treads and Platforms: Provide patterns, spacing, and bar sizes indicated; fabricate to comply with NAAMM MBG 531.
1. Finish being shop prime paint, unless otherwise indicated.
2. Fabricate grating treads with steel plate nosing on one edge and with steel angle or steel plate carrier at each end for stringer connections. Secure treads to stringers with bolts or as otherwise indicated.
3. Fabricate grating platforms, with nosing matching that on grating treads, at all landings. Provide toe plates at open-sided edges of grating platform. Secure grating to platform frame with welds or as otherwise indicated.

G. Stair Guardrails and Handrails: Comply with applicable requirements specified elsewhere in this section for steel pipe guardrails and handrails, and as follows:
1. Fabricate newels of steel tubing and provide newel caps of gray-iron castings, as shown.
2. Railings may be bent at corners, rail returns, and wall returns, instead of using prefabricated fittings.
3. Connect railing posts to stair framing by direct welding, unless otherwise indicated.

2.16 PIPE BOLLARDS

A. Fabricate pipe bollards from 4" (102 mm) standard black steel pipe, Schedule 40, unless otherwise indicated. Cap bollards with ¼" (6.4 mm) minimum thickness steel base plate, or as otherwise indicated.

2.17 FINISHES

A. General: Comply with NAAMM AMP 500 "Metal Finishes Manual" for recommendations relative to application and designations of finishes.

B. Finish metal fabrications after assembly.

2.18 STEEL AND IRON FINISHES

A. General: Shop-paint uncoated surfaces of metal fabrications, except those to be embedded in concrete or masonry or to receive sprayed-on fireproofing, surfaces and edges to be welded, and galvanized surfaces, unless otherwise indicated. Comply with requirements of SSPC-PA 1 for shop painting.

B. Galvanizing: For those items indicated for galvanizing, apply zinc-coating by the hot- dip process in compliance with the following requirements:
1. ASTM A123 for galvanizing both fabricated and non-fabricated iron and steel products made of uncoated rolled, pressed, and forced shapes, plates, bars, and strip 0.0299" (0.7595 mm) thick and heavier.
2. ASTM A153 for galvanizing iron and steel hardware.

C. Surface Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below.
1. Remove oil, grease and similar contaminants in accordance with SP-1, "Solvent Cleaning".
2. Remove loose rust, scale, spatter, slag and other deleterious materials in accordance with SSPC.

D. Painting:
Priming -Immediately after surface preparation, apply structural steel primer paint in accordance with manufacturer's instructions and at a rate to provide dry film thickness of not less than 3.0mils (0.076 mm). Use painting methods that result in full coverage of joints, corners, edges, and exposed surfaces. Apply 2 coats of paint to surfaces that are inaccessible after assembly or erection.

Finish Coat – Shop or field apply 2 coats of finish paint, color as noted on plans.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Installer shall examine the areas and conditions under which metal fabrication items are to be installed. Notify the Architect in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer and Architect.

3.2 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

B. Center nosing's on tread widths with noses flush with riser faces and tread surfaces.

C. Set sleeves in concrete with tops flush with finish surface elevations; protect sleeves from water and concrete entry.

3.3 INSTALLATION - GENERAL

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; include threaded fasteners for concrete and masonry inserts, toggle bolts, and through-bolts, lag bolts, wood screws and other connectors as required.

B. Cutting, Fitting and Placement: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

E. Field Welding: Comply with AWS Code for procedures of manual shielded metal- arch welding, appearance and quality of welds made, methods used in correcting welding work, and the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surfaces matches those adjacent.

F. Grout: Follow manufacturer's recommendations for substrate preparation and application.

G. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint or zinc chromate primer.

3.4 INSTALLATION OF METAL BAR GRATINGS

A. General: Install gratings to comply with requirements of NAAMM grating standard that apply to grating types and bar sizes indicated, including installation clearances and standard anchoring details.

B. Secure removable units to supporting members with type and size of clips and fasteners indicated, or if not indicated, as recommended by grating manufacturer for type of installation conditions shown.

C. Secure non-removable units to supporting members by welding where both materials are the same; otherwise, fasten by bolting as indicated above.

D. Attach toe plates to gratings by welding, at locations indicated.

3.5 INSTALLATION OF STEEL PIPE GUARDRAILS AND HANDRAILS

A. Adjust railings prior to anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated, or if not indicated, as required by design loadings. Plumb posts in each direction. Secure posts and railing ends to building construction as follows:
1. Anchor posts in concrete by means of pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with non-shrink, non-metallic grout, mixed and placed to comply with anchoring material manufacturer's directions.
2. Anchor posts and rail ends to steel with welded connections, unless otherwise indicated.
3. Anchor posts and rail ends into concrete and masonry with steel round flanges welded to post and rail ends, and anchored into wall construction with expansion shields and bolts.
4. Install removable railing sections where indicated in slip-fit metal sockets cast into concrete.

B. Accurately locate sockets to match post spacing.

C. Secure handrails to wall with wall brackets and end fittings. Provide bracket with not less than 1½" (38.1 mm) clearance from inside face of handrail and finished wall surface. Locate brackets at spacing not less than 5'-0" (1.5 m) o.c., unless otherwise indicated. Secure wall brackets and wall return fittings to building construction as follows:
1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
2. For concrete and solid masonry anchorage, use drilled-in expansion shield and either concealed hanger bolt or exposed lag bolt, as applicable.
3. For hollow masonry anchorage, fasten brackets directly on masonry wall using toggle bolts.
4. For steel framed gypsum board assemblies, fasten brackets to wood blocking using lag bolts or to metal blocking using self-tapping screws, of size and type required to support structural loads.

D. Expansion Joints: Provide expansion joints at locations indicated, or if not indicated, at intervals not to exceed 40' (12.2 m). Provide slip joint with internal sleeve extending 2" (51 mm) beyond joint on either side; fasten internal sleeve securely to one side; locate joint within 6" (152 mm) of posts.

3.6 INSTALLATION OF PIPE BOLLARDS

A. General: Install bollards at locations shown on drawings. After installation, fill pipe with concrete and provide a smooth convex curve at the top of the pipe.

B. Backfill: The backfill in the annular space around bollards not embedded in poured footings shall be by the following methods:
1. Clean excess soil from hole. Do not leave loose soil at bottom of hole.
2. Backfill shall be of concrete with an ultimate strength of 3,000 pounds per square inch (210.92 kgs/sq. cm) at 28 days. The hole shall not be less than four (4) inches (101.6 mm) larger than the diagonal dimension of a round, square or rectangular bollard.

3.7 ADJUSTING AND CLEANING

A. Touch-Up Painting of Steel Items: Immediately after erection, clean field welds, bolted connections, abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 requirements for touch- up of field painted surfaces. Apply by brush or spray to provide a minimum dry film thickness of 3.0 mils (0.076 mm).

B. For galvanized surfaces clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

This bar is one inch long on original drawing.

If not one inch on this sheet, adjust scales accordingly.

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NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
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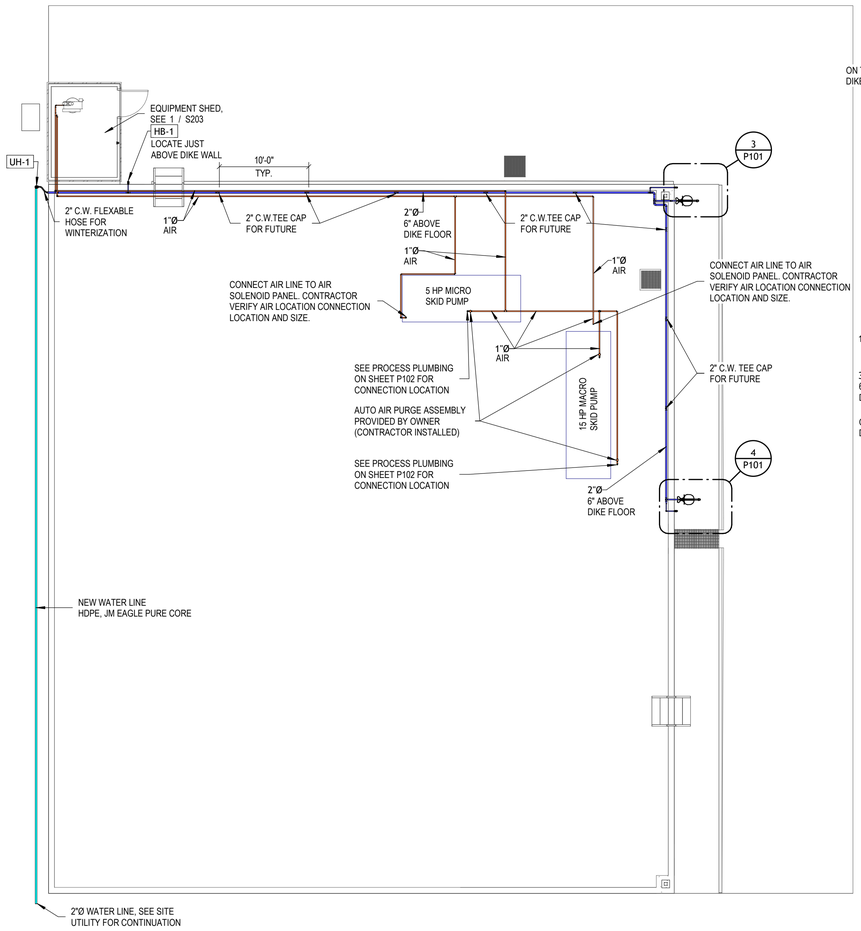
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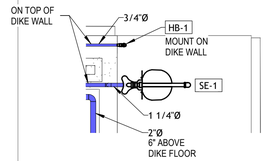
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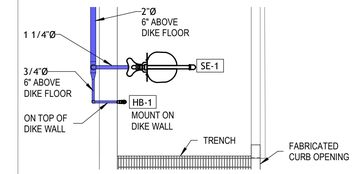
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DATE: DEC. 2025





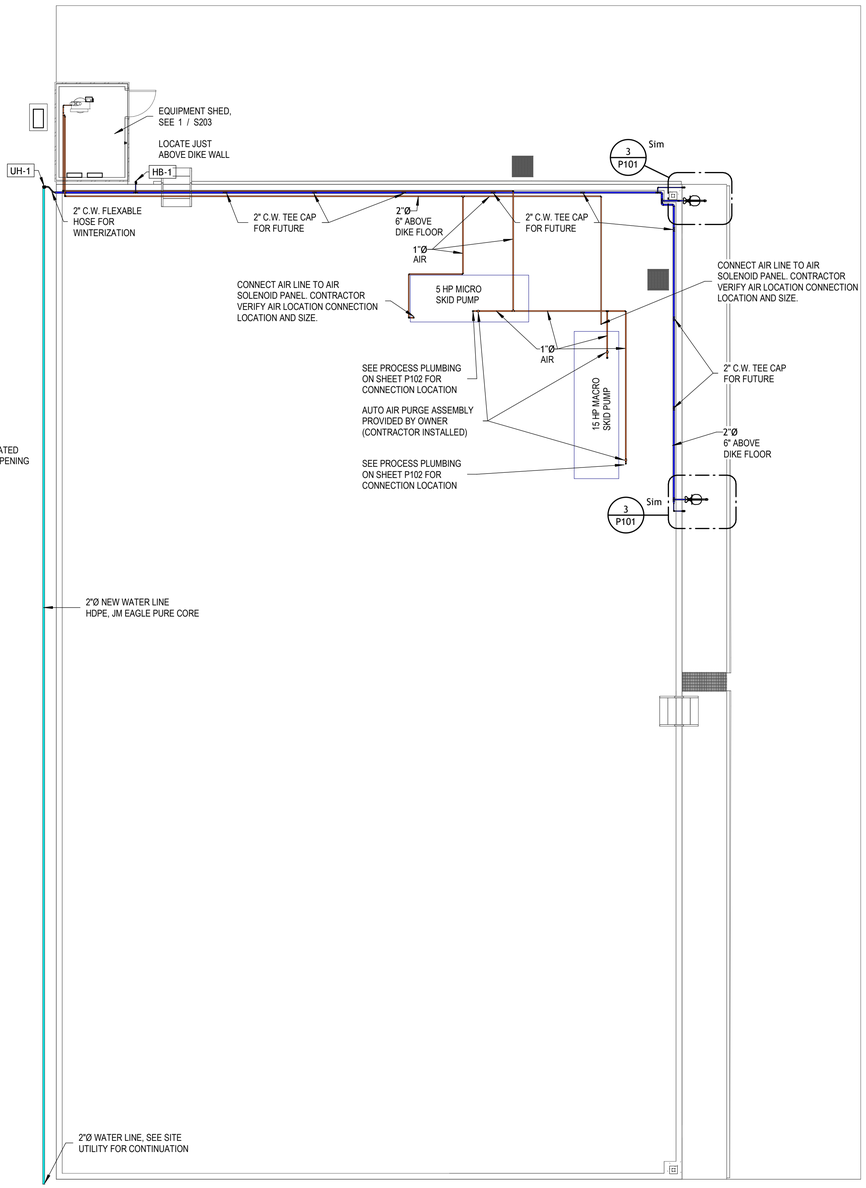
3 PLUMBING DETAIL
SCALE: 3/8" = 1'-0"



4 PLUMBING DETAIL
SCALE: 3/8" = 1'-0"

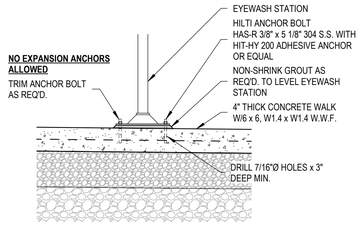
LEGEND

- AIR LINE GALVANIZED
- WATER LINE (BELOW GRADE) HDPE, JM EAGLE PURE CORE
- WATER LINE (ABOVE GRADE) GALVANIZED



FINISH FLOOR - BASE PLUMBING

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



EYEWASH MOUNTING DETAIL

5 SCALE: 1" = 1'-0"

PLUMBING FIXTURE SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	COLD WATER SIZE	COMMENTS
HB-1	Woodford Manufacturing Company	24C	Anti-Siphon Wall Faucet	3/4"	
SE-1	Bradley Corporation	S19314FSS	Combination Drench Shower and Halo™ Eyewash or Eye/Face Wash	1 1/4"	Provide with barrier free pull rod.
UH-1	Woodford Manufacturing Company	U200W	Freezeless Utility Yard Hydrant	2"	

FINISH FLOOR - ALTERNATE PLUMBING

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

NEW DIKE AND LOADPAD

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P101

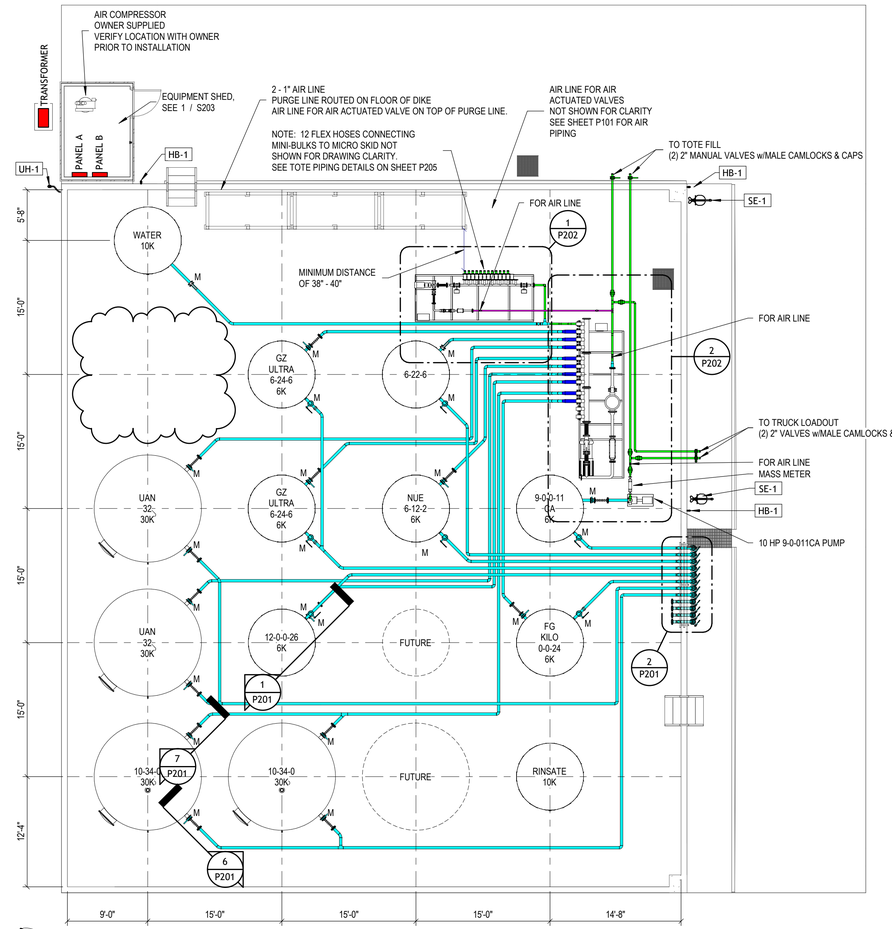
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I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

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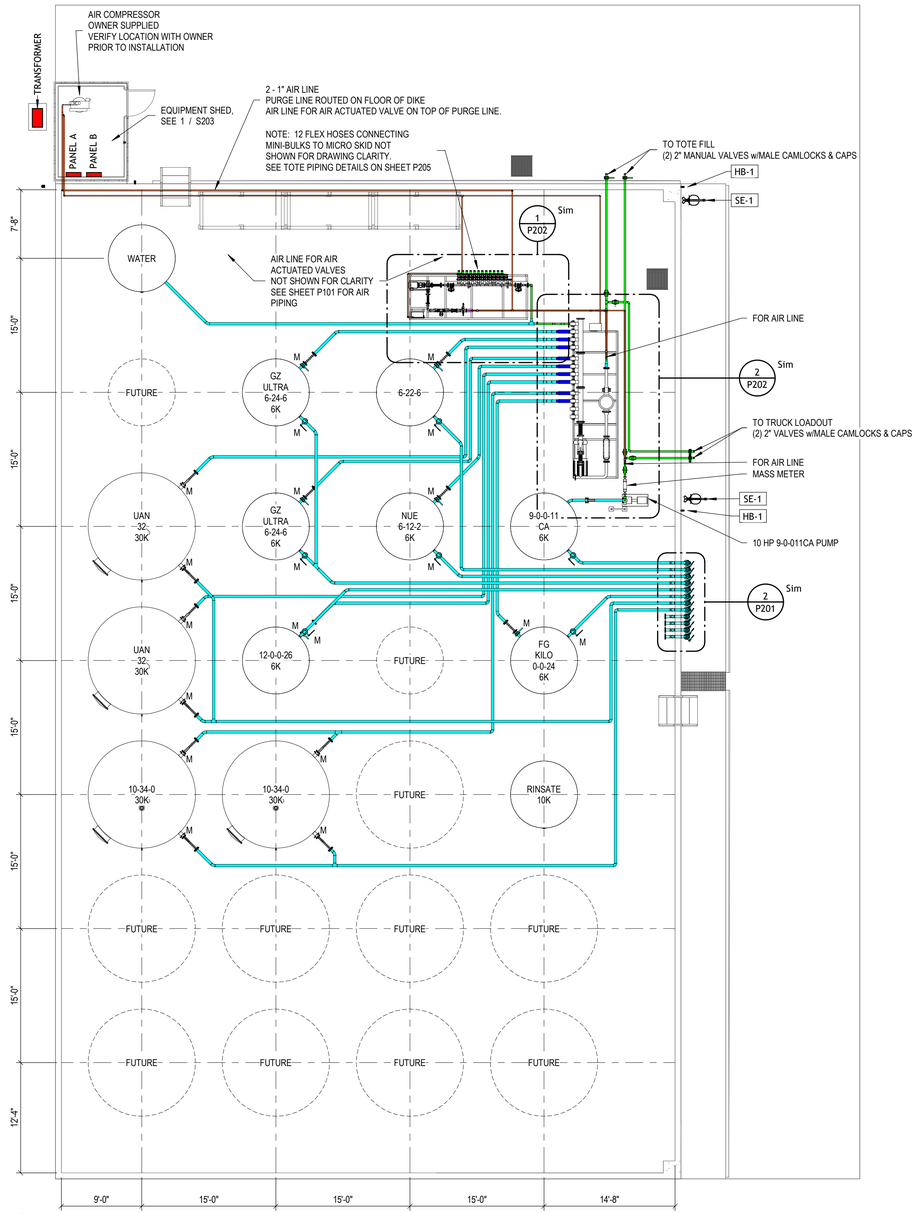
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FINISH FLOOR - BASE PROCESS PLUMBING

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



FINISH FLOOR - ALTERNATE PROCESS PLUMBING

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

NOTE: THE PROCESS PLUMBING FOR THE ALTERNATE BID IS IDENTICAL TO THE BASE BID PROCESS PLUMBING.

	1"Ø PIPE
	1 1/4"Ø PIPE
	2"Ø PIPE
	3"Ø PIPE
	4"Ø PIPE
A	AUTOMATIC VALVE
M	MANUAL VALVE

PLUMBING LEGEND

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

TANK NOTES

1. TANKS SHALL BE SET AND ANCHORED BY THE CONTRACTOR.
2. ANCHORING OF TANKS WILL BE FORTH COMING ONCE OWNER HAS PURCHASED THE TANKS AND MANUFACTURER SUPPLIES ANCHOR REQUIREMENTS TO PROJECT ENGINEER.

PROCESS PLUMBING NOTES:

1. THE PROCESS PLUMBING LAYOUT SHALL BE INSTALLED AS SHOWN ON SHEETS P102, P201, P202, P203, P204, P205, P301.
2. FERTILIZER PIPING SHALL BE CONSTRUCTED OF HDPE SDR 17 UNLESS SPECIFICALLY NOTED.
3. AIR PIPING SHALL BE GALVANIZED.
4. ALL VALVES ON FERTILIZER TANKS SHALL BE MANUALLY OPERATED SS 150# FLANGED GATE VALVE (316SS CRANE VALVE OR EQUAL).
5. ALL AUTOMATIC AND MANUAL VALVES SHALL BE KEYSTONE SERIES 221 BUTTERFLY VALVE. ALL FLANGE ADAPTORS FITTED AGAINST BUTTERFLY VALVES SHALL BE BEVELED BY THE MANUFACTURER TO FACILITATE PROPER OPENING OF THE VALVES.
6. CONTRACTOR SHALL PROVIDE A 10'-0" LENGTH OF HEAVY DUTY EPDM RUBBER TFT 202-3 x3" HOSE WITH EACH END TO HAVE A 3" FEMALE x ALUMINUM CAMLOCK FITTING.
7. AIR PURGE VALVES EITHER AUTOMATIC OR MANUAL (VERIFY WITH OWNER) SHALL BE 316 SS AND RATED AT 1000 PSI.
8. ALL BOLTS NUTS, WASHERS AND CLAMPS SHALL BE STAINLESS STEEL, EXCEPT BOLTS FOR FLANGED CONNECTIONS.
9. PIPING FLEX CONNECTIONS SHALL BE 316SS AND APPROX. 1'-6" IN LENGTH.
10. CHEMICAL FLEX PIPING FROM TOTE TO MICRO LOADOUT SKID SHALL BE KANAFLLEX, FLEXCHEM 390 SUCTION / DISCHARGE HOSE EPDM 100 PSI.

NEW DIKE AND LOADPAD

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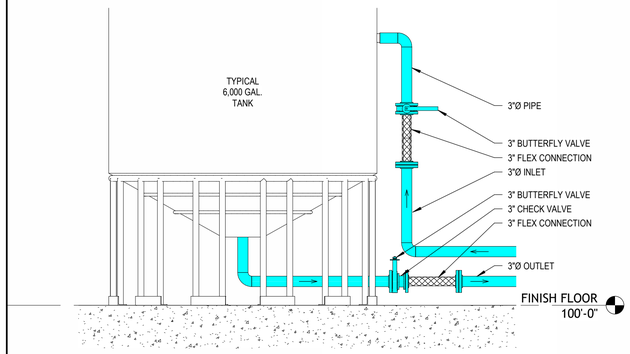
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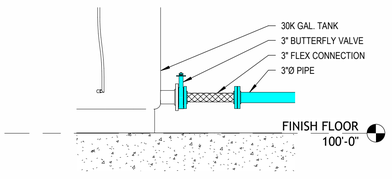
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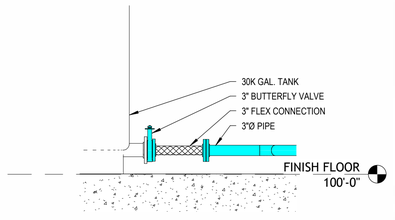
TYPICAL 6K TANK INLET & OUTLET DETAIL

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



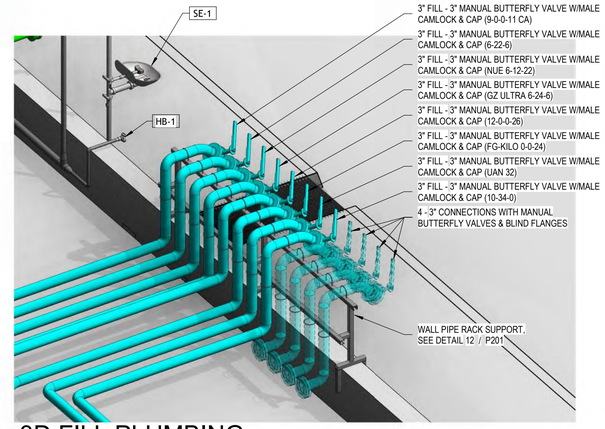
30K TANK INLET DETAIL

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



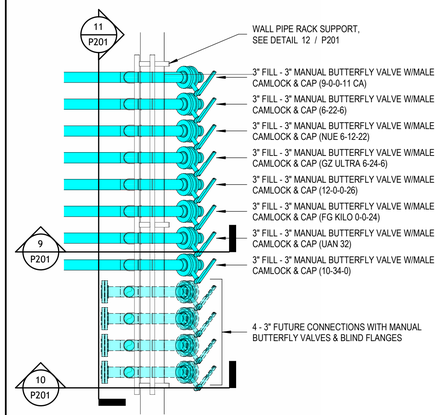
30K TANK OUTLET DETAIL

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



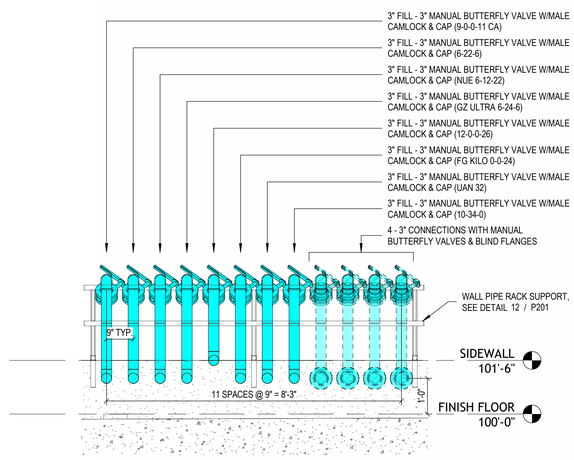
3D FILL PLUMBING

8 SCALE:



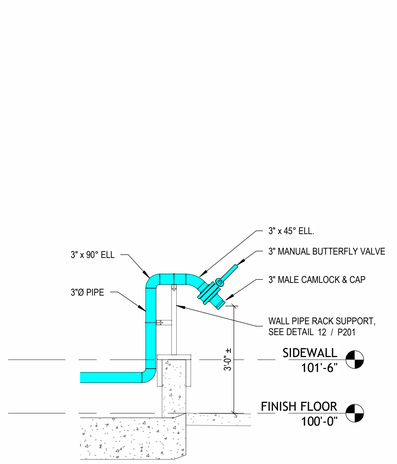
FILL LINE PLUMBING PLAN

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



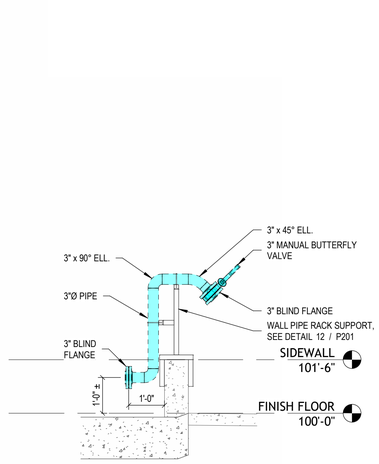
FILL LINE PLUMBING ELEVATION

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



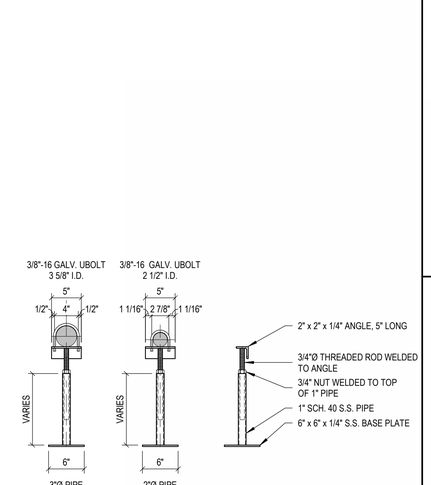
TYPICAL TANK FILL LINE

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



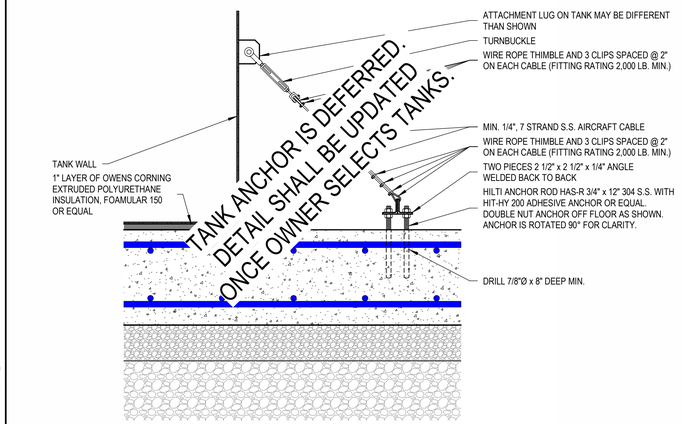
TYPICAL FUTURE TANK FILL LINE

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



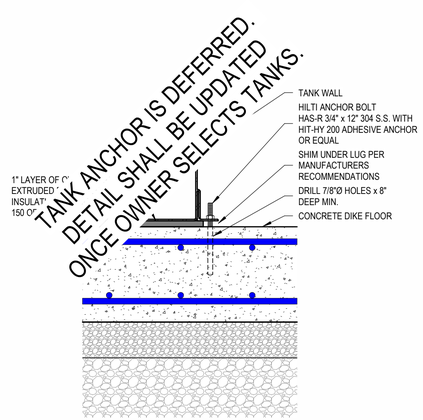
PIPE SUPPORT DETAIL

5 SCALE: 1" = 1'-0"



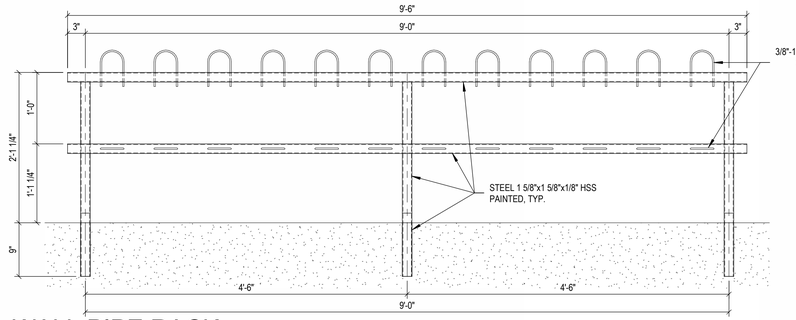
TANK ANCHOR TYPE 1 DETAIL

3 SCALE: 1" = 1'-0"



TANK ANCHOR TYPE 2 DETAIL

4 SCALE: 1" = 1'-0"



WALL PIPE RACK

12 SCALE: 1" = 1'-0"

I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

This bar is one inch long on original drawing.

If not one inch on this sheet, adjust scales accordingly.

E:\Revit Work Files\887MT-25 Dike Central Model V2_apr\HVAC\887MT-25 Dike Central Model V2_apr_HVAC.rvt

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
214 E. 1ST ST. MOUNT VERNON, WA 98273 | 360.336.2370
203 W. 2ND ST. HASTINGS, NE 68901 | 402.462.2371
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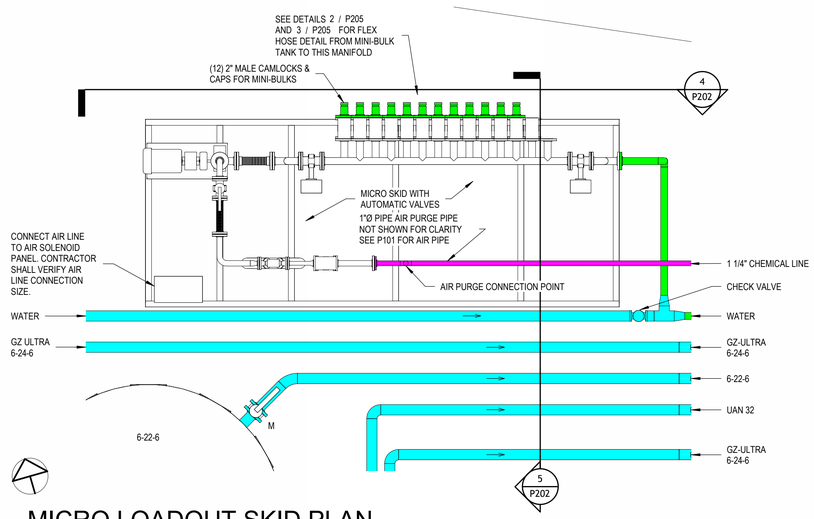
APRIL B. HOCK
STATE OF WASHINGTON
26006932
REGISTERED
PROFESSIONAL ENGINEER
4/21/2026

EXPIRES 10/03/2027

DWG: 887MT-25
DRAWN:
CHECKED:
REVISIONS

P201

DATE: DEC. 2025



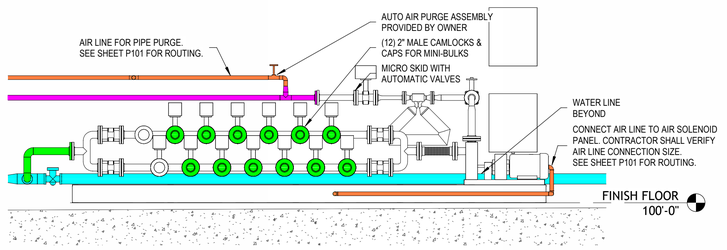
MICRO LOADOUT SKID PLAN

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

	1"Ø PIPE
	1 1/4"Ø PIPE
	2"Ø PIPE
	3"Ø PIPE
	4"Ø PIPE
A	AUTOMATIC VALVE
M	MANUAL VALVE

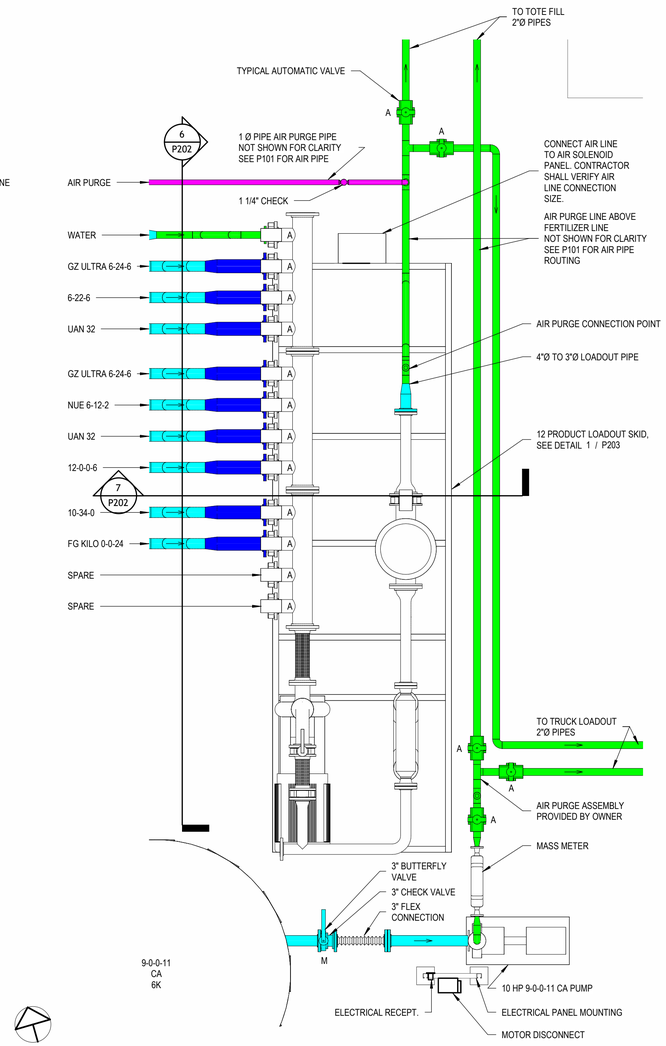
PLUMBING LEGEND

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



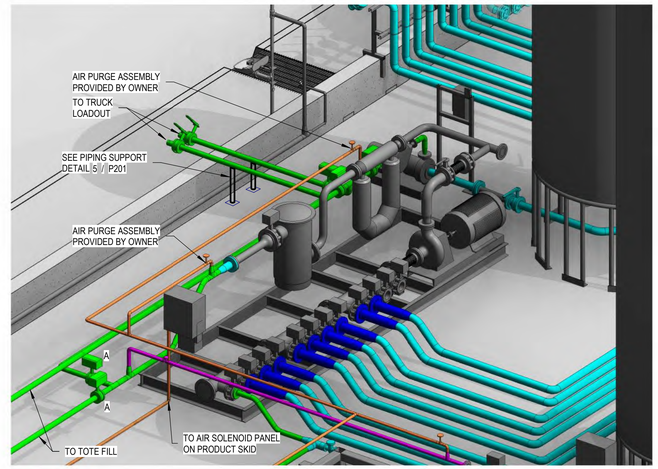
MICRO SKID SECTION

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



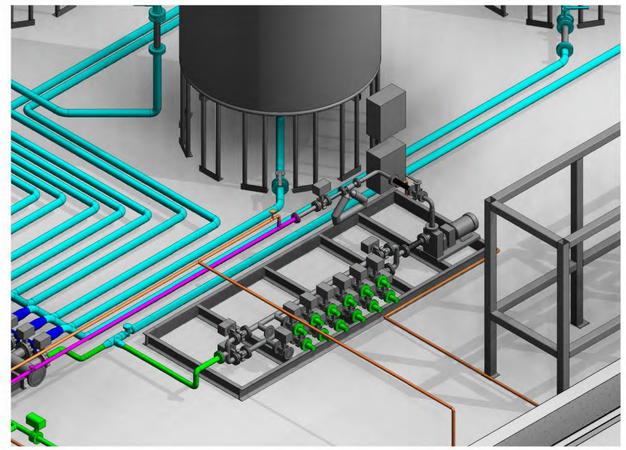
12 PRODUCT SKID PLUMBING PLAN

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



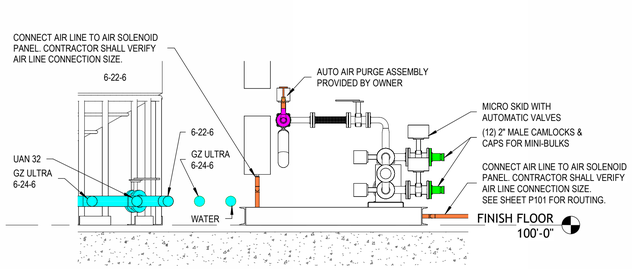
3D PLUMBING 12 PRODUCT SKID

3 SCALE:



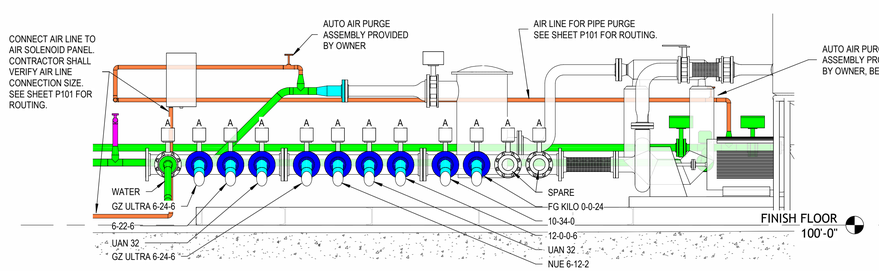
3D MICRO LOADOUT SKID

8 SCALE:



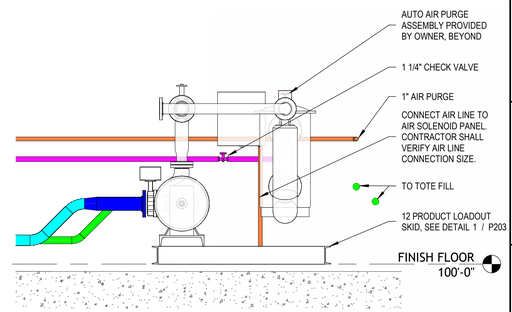
MICRO SKID SECTION

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



LOADOUT SKID SECTION

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



LOADOUT SKID SECTION

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

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E:\Revit Work Files\BSMT-25 Elite Central Model VZ_apriHVWT.rvt

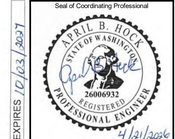
NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
214 E. 1ST ST. KUDOK, NE 68061 | 308.543.2370 | ENGINEERS | ARCHITECTS
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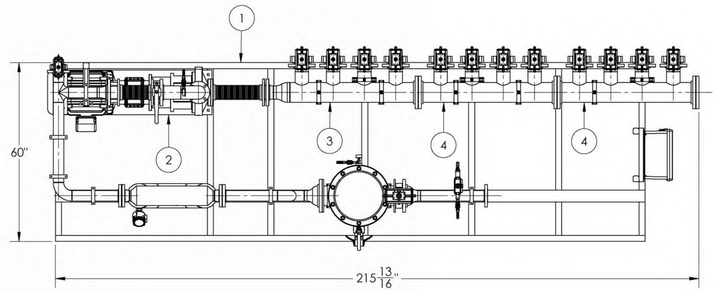
EXPIRES 10/23/2027

4/21/2026

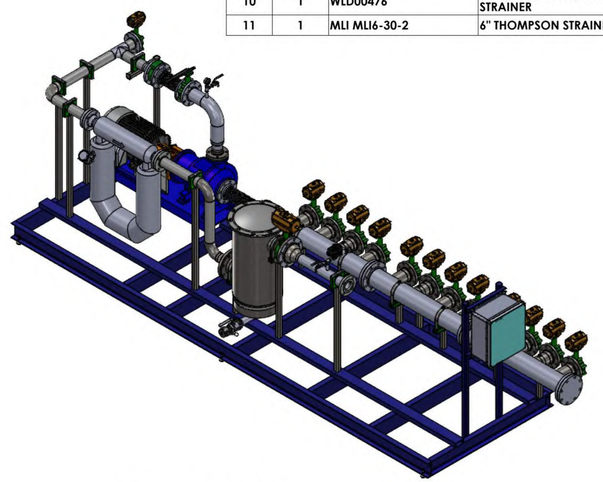
DWG: 887MT-25
DRAWN:
CHECKED:
REVISIONS

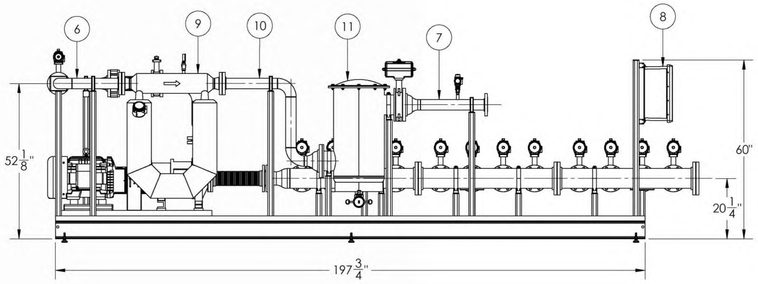
P202

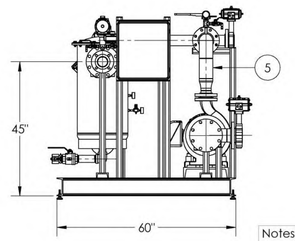
DATE: DEC. 2025



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FRM00132	LOADOUT SKID FRAME
2	1	FEP L-A40DIK25	A-40SS WITH 25 HP MOTOR DURCO
3	1	MAN00150	6" X 4" SUCTION MANIFOLD W/ (4) 4" INLETS
4	2	MAN00151	6" SUCTION MANIFOLD W/ (4) 4" INLETS
5	1	WLD00474	3" X 4" DISCHARGE MANIFOLD
6	1	WLD00475	3" X 4" DISCHARGE TO METER WELDMENT
7	1	WLD00477	3" DISCHARGE MANIFOLD
8	1	ICS VALVEBOX16	BOSCH/REXROTH 16 VALVE BOX
9	1	MMI CMF300-3C	3" MICROMOTION MASS METER W/ 3" FLANGES
10	1	WLD00476	3" MANIFOLD FROM INJECTION TO STRAINER
11	1	MLI MLI6-30-2	6" THOMPSON STRAINER







Notes:

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
X.X = +/-0.1"
X.XX = +/-0.03"
X.XXX = +/- 0.005"
FRACTIONAL DIMS. = ± 1/16"
ANGULAR: ± 1 DEG.
MATERIAL PROPERTIES
GRADE:
Misc. Steel
THICKNESS:
FINISH:
OUTSIDE PROCESS:

MODELED BY:	DJM
DRAWN BY:	DJM
DATE:	11/2/2023
PART #:	ASYLOS00172
WEIGHT LBS:	
PROJECT #:	
ORDER #:	

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MURRAY EQUIPMENT INC.

TITLE: 12 PRODUCT LOADOUT SKID
450GPM
FOR
WILBUR ELLIS COMPANY
BERESFORD, SD

SIZE:	DWG. NO.	REV.
C	ASYLOS00172	
SHEET SCALE: 1:24	SHEET 1 OF 1	

1 12 PRODUCT LOADOUT SKID
SCALE: 12" = 1'-0"

NOTE: THE MACRO SKID SHOWN WILL BE SUPPLIED BY THE OWNER WITH ALL PARTS LISTED FOR INSTALLATION AS SHOWN ON SHEET P102.

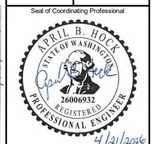
NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
214 E. 1ST ST. | MCCOOK, NE 69001 | 308.345.2370 | DAVE@DESIGNASSOCIATES.COM
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4/21/2026

DWG: 887MT-25
DRAWN:
CHECKED:
REVISIONS

P203

DATE: DEC. 2025

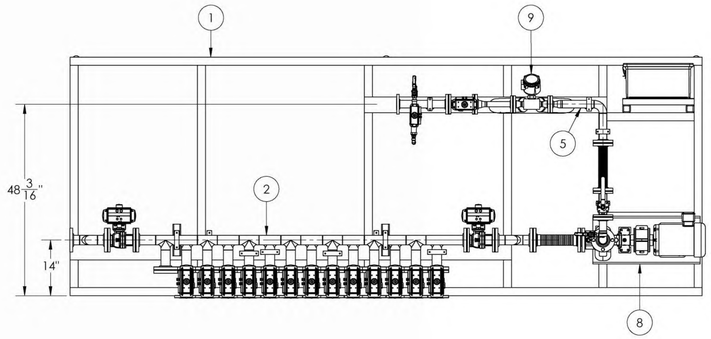
I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

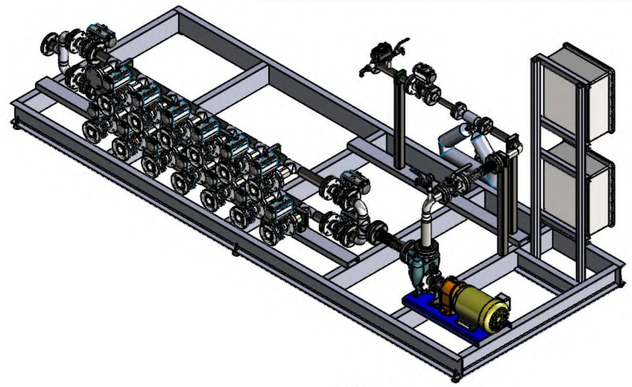
This bar is one inch long on original drawing.

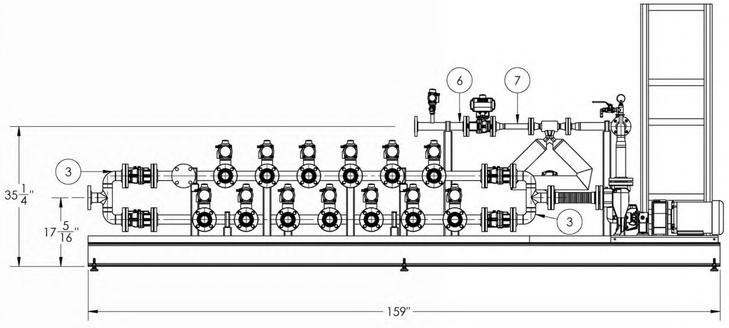
If not one inch on this sheet, adjust scales accordingly.

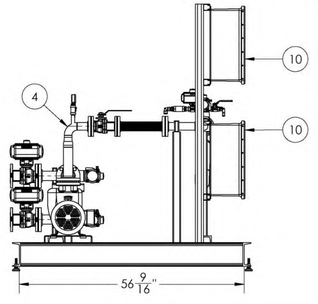
E:\Revit Work Files\887MT-25 Dike Central Model V2_april-WMT.rvt

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FRM00133	LOAD OUT SKID FRAME
2	2	MAN00152	2" SUCTION MANIFOLD W/(7) 2" INLETS
3	2	WLD00479	MANIFOLD CONNECTING WELDMENT
4	1	WLD00480	PUMP DISCHARGE
5	1	WLD00481	11/2" 90 DEG WELDMENT
6	1	WLD00482	1 1/2" OUTLET SPOOL
7	1	WLD00483	1" SPOOL WITH 1 1/2" REDUCER
8	1	FEP MP-9-SS	FLOMAX 8 w/ 5HP MOTOR
9	1	MMI CMF100-1C	1" MICRO MOTION MASS METER W/ 1" FLANGES
10	2	MEI ELC4319A	12 VALVE AIR BOX









Notes:

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: X.X = +/-.01" X.XX = +/-.020" X.XXX = +/-.0.005" FRACTIONAL DIMS. = ± 1/16" ANGULAR: ± 1 DEG.	MODELED BY:	IMB
	DRAWN BY:	IMB
	DATE:	11/2/2023
	PART #:	ASYLOS00173
	WEIGHT LBS:	
	PROJECT #:	
	ORDER #:	
MATERIAL PROPERTIES GRADE: THICKNESS: FINISH: OUTSIDE PROCESS:	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MURRAY EQUIPMENT, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MURRAY EQUIPMENT, INC. IS PROHIBITED.	

MEI MURRAY EQUIPMENT INC.

TITLE: MICRO LOADOUT SKID FOR WILBUR ELLIS COMPANY BERESFORD, SD

SIZE: C | DWG. NO. ASYLOS00173 | REV.

SHEET SCALE: 1:18 | SHEET 1 OF 1

1 MICRO LOADOUT SKID
SCALE: 12" = 1'-0"

NOTE: THE MICRO SKID SHOWN WILL BE SUPPLIED BY THE OWNER WITH ALL PARTS LISTED FOR INSTALLATION AS SHOWN ON SHEET P102.

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
214 E. 1ST ST. MUDOCK, NE 68951 | 308.543.2370 | DA@HUBEL.NET | ARCHITECTS
2526 W. 2ND ST. HASTINGS, NE 68901 | 402.463.2377 | WWW.WDESIGNDA.COM

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APRIL B. HOCK — STATE OF WASHINGTON — 26006932 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 10/23/2027

4/31/2026

DWG: 887MT-25
DRAWN:
CHECKED:
REVISIONS:

P204

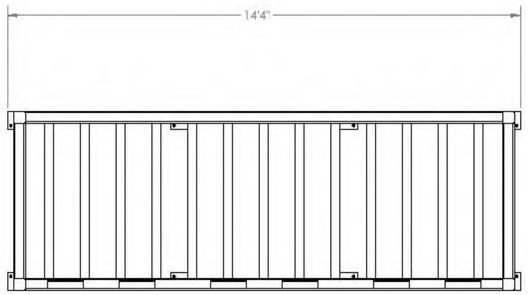
DATE: DEC. 2025

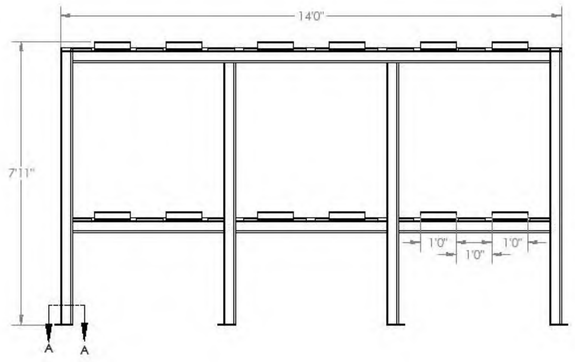
I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

This bar is one inch long on original drawing.

If not one inch on this sheet, adjust scales accordingly

E:\Revit Work Files\887MT-25 Dike Central Models\2_asylnr\NNT.rvt







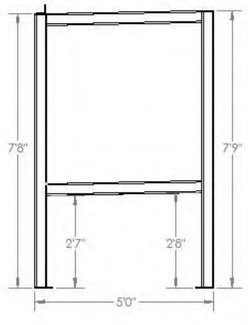
SECTION A-A
SCALE 1 : 15

NOTE: TOTE RACKS PROVIDED BY THE OWNER, CONTRACTOR SHALL PRVIDE AND INSTALL HOSES, CLAMPS, AND FASTENERS.

1 TOTE RACK DETAILS (2 - 6 TOTE RACK BY OWNER)

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

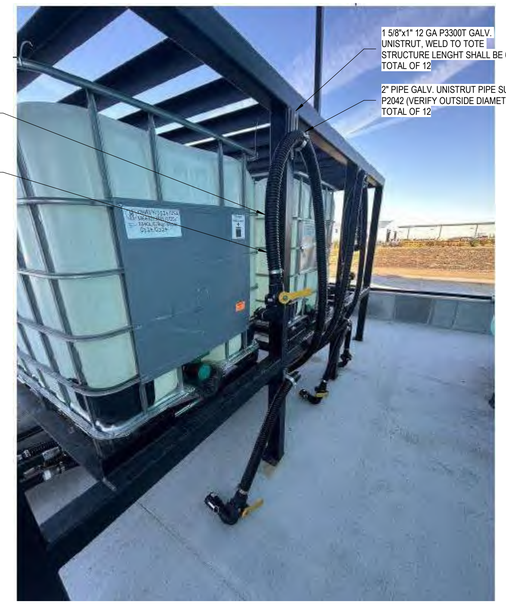




NOTE:
CONNTECT UNISTRUCT TO TOTE RACK WITH 3/8" SELF-DRILLING SCREWS

FLEX HOSE TO BE FLEXCHEM 390 ITEM KA390SD-2

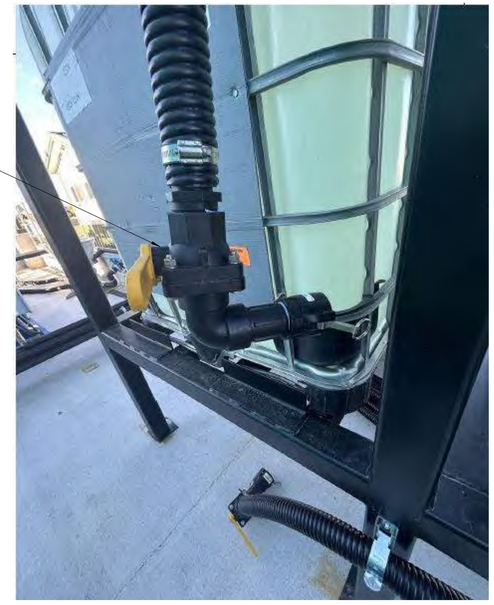
PROVIDE ONE HOSE FROM EACH MANIFOLD POSITION ON MICRO-SKID TO EACH TOTE FOR A TOTAL OF TWELVE (12) CONNECTION POINTS.



2 TOTE PIPING DETAIL 1

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

2" CAMLOCK, NIPPLE, STREET 90 VALVE AND HOSE BARB TO BE PROVIDED AND INSTED BY CONTRACTOR.



3 TOTE PIPING DETAIL 2

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

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
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APRIL B. HOECK
STATE OF WASHINGTON
26006932
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4/21/2026

EXPIRES 10/03/2027

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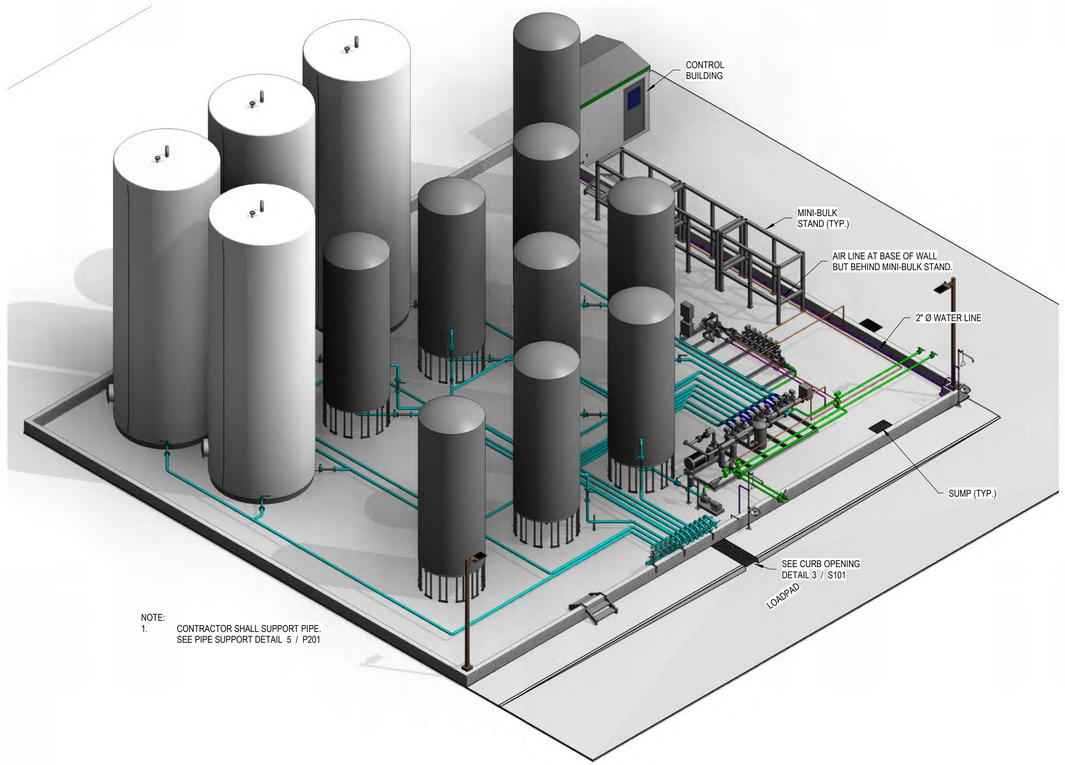
DATE: DEC. 2025

I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

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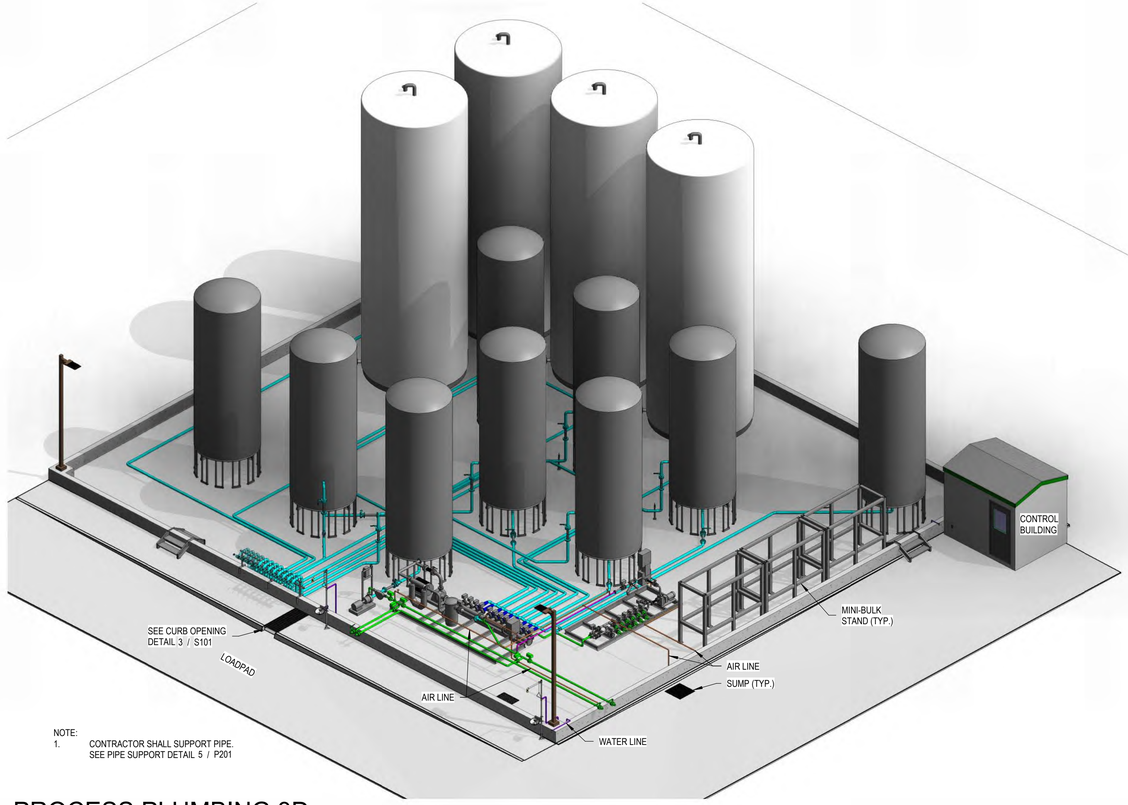
If not one inch on this sheet, adjust scales accordingly

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1 PROCESS PLUMBING 3D

SCALE:



2 PROCESS PLUMBING 3D

SCALE:

	1"Ø PIPE
	1 1/4"Ø PIPE
	2"Ø PIPE
	3"Ø PIPE
	4"Ø PIPE
A	AUTOMATIC VALVE
M	MANUAL VALVE

PLUMBING LEGEND

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

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
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4/21/2026

EXPIRES 10/03/2027

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REVISIONS

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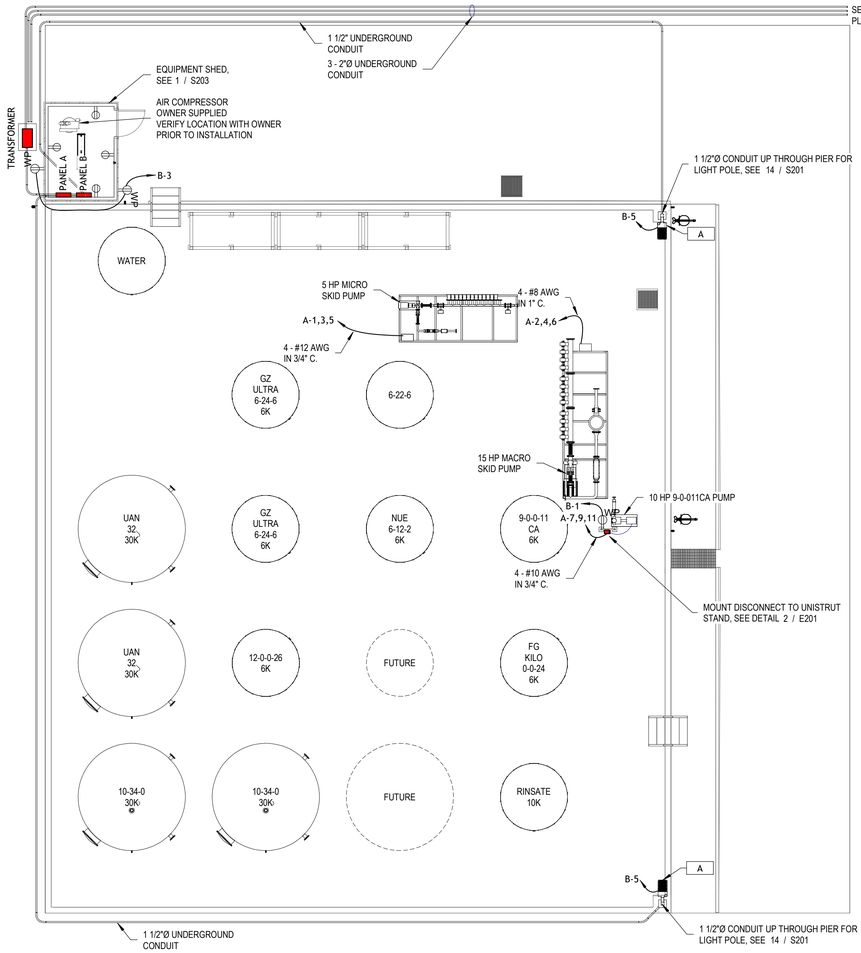
DATE: DEC. 2025

I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

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If not one inch on this sheet, adjust scales accordingly

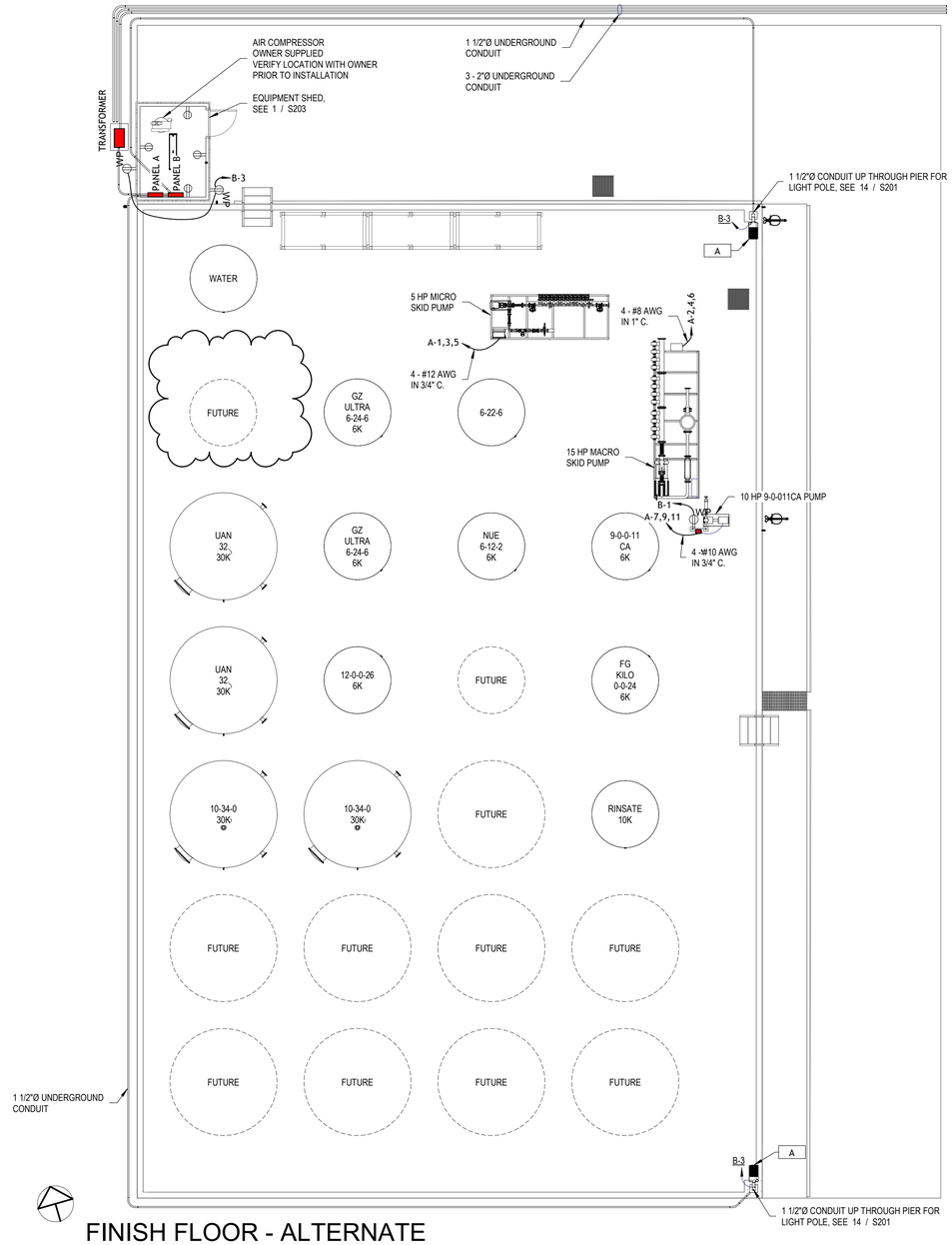
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NOTES:
WP WATERPROOP AND GFCI

FINISH FLOOR - BASE ELECTRICAL

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



FINISH FLOOR - ALTERNATE ELECTRICAL

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

NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

DESIGN ASSOCIATES
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EXPIRES 10/03/2027

DWG: 887MT-25
DRAWN: A.B.H.
CHECKED:
REVISIONS
1 2026-03-25

E101

DATE: DEC. 2025

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Branch Panel: PANEL A

Location: CONTRACTOR SUPPLIED STRUCTURE
Supply From: FROM EXISTING ELECTRICAL SERVICE
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Delta
Phases: 3
Wires: 4

A.I.C. Rating: 65
Mains Type:
Mains Rating: 200 A
MCB Rating: 250 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
A-1	5 HP MICRO SKID PUMP	20 A	3	2106...	5820...					3	40 A	15 HP MACRO SKID PUMP	A-2
A-3	--	--	--			2106...	5820...			--	--	--	A-4
A-5	--	--	--					2106...	5820...	--	--	--	A-6
A-7	10 HP 9-0-011CA PUMP	25 A	3	3880...	2106...					3	20 A	5 HP AIR COMPRESSOR	A-8
A-9	--	--	--			3880...	2106...			--	--	--	A-10
A-11	--	--	--					3880...	2106...	--	--	--	A-12
A-13	TRANSFORMER	45 A	3	900 VA	0 VA					3	40 A	Future 15 Hp Pump	A-14
A-15	--	--	--			360 VA	0 VA			--	--	--	A-16
A-17	--	--	--					500 VA	0 VA	--	--	--	A-18
A-19	Future 15 Hp Pump	40 A	3	0 VA	0 VA					3	40 A	Future 15 Hp Pump	A-20
A-21	--	--	--			0 VA	0 VA			--	--	--	A-22
A-23	--	--	--					0 VA	0 VA	--	--	--	A-24
A-25													A-26
A-27													A-28
A-29													A-30
		Total Load:		14812 VA		14272 VA		14364 VA					
		Total Amps:		54 A		52 A		52 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	500 VA	100.00%	500 VA		
Power	41736 VA	100.00%	41736 VA	**Total Conn. Load:**	43446 VA
Receptacle	1260 VA	100.00%	1260 VA	**Total Est. Demand:**	43446 VA
				Total Conn. Current:	52 A
				Total Est. Demand Current:	52 A

Notes:

Branch Panel: PANEL B

Location: CONTRACTOR SUPPLIED STRUCTURE
Supply From: TRANSFORMER
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Delta
Phases: 3
Wires: 4

A.I.C. Rating: 65
Mains Type:
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
B-1	Receptacle	20 A	1	180 VA	720 VA					1	20 A	Receptacle	B-2
B-3	Receptacle	20 A	1			360 VA							B-4
B-5	Lighting	20 A	1					500 VA					B-6
B-7													B-8
B-9													B-10
B-11													B-12
B-13													B-14
B-15													B-16
B-17													B-18
B-19													B-20
B-21													B-22
B-23													B-24
B-25													B-26
B-27													B-28
B-29													B-30
		Total Load:		900 VA		360 VA		500 VA					
		Total Amps:		8 A		3 A		4 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	500 VA	100.00%	500 VA		
Receptacle	1260 VA	100.00%	1260 VA	**Total Conn. Load:**	1724 VA
				Total Est. Demand:	1724 VA
				Total Conn. Current:	5 A
				Total Est. Demand Current:	5 A

Notes:

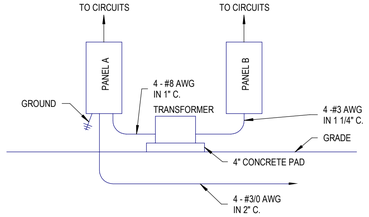
LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	MODEL	Description	VOLTAGE	Comments
A	Cooper Lighting	LAS45P T4 RABX-BZ	AREA / SITE LUMINAIRE	120 V.	POLE MOUNT

POLE - COOPER LIGHTING STS 5 A 15 S F N 1 X G V.

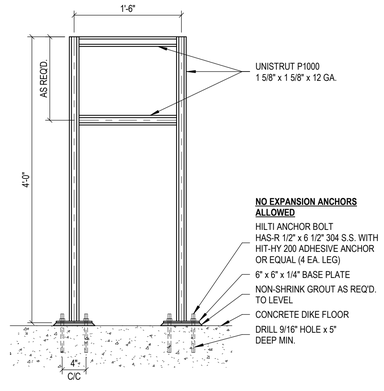
GROUND NOTES:
1. GROUND TO CONCRETE ENCASED REBAR WITH #4 COPPER WIRE
2. GROUND TO GROUNDING ROD WITH #4 COPPER WIRE.

TRANSFORMER
BUILDING TRANSFORMER SHALL BE SQUARE D MODEL EE30T3H,
3 PHASE, 480 V. DELTA PRIMARY, 120/208V. 3 PHASE SECONDARY.
30 kVA OR EQUIVALENT.



ELECTRICAL ONE-LINE DIAGRAM

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



ELECTRICAL PANEL MOUNTING

2 SCALE: 1" = 1'-0"

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NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
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Seal of Coordinating Professional



EXPIRES 10/03/2027

4/21/2026

DWG: 887MT-25
DRAWN: A.B.H.
CHECKED:
REVISIONS

E201

DATE: DEC. 2025

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SECTION 16010 - ELECTRICAL

1. GENERAL CONDITIONS:

The General Conditions and the Special Conditions apply to all work included under the above heading.

2. SCOPE:

The work included under this Section consists of furnishing all labor, material, services and skilled supervision necessary for the installation and extension of the electrical systems specified herein or shown on the drawings, and its delivery to the Owner upon completion in all respects ready for use.

Each bidder shall visit the job site to fully acquaint and familiarize themselves with the location where the work will proceed.

3. RULES AND REGULATIONS:

Electrical work and materials shall conform to such sections of the American Standards Associations (ASA), National Electric Manufacturers Associations (NEMA), American Institute of Electrical Engineers (AIEE), National Board of Fire Underwriters "National Electric Code" (NEC), Insulated Power Cable Engineers Association (IPCEA), and American Society for Testing Materials (ASTM), standards and specifications as are applicable. The latest edition of all standards and specifications listed above shall apply.

All electrical work shall be in accordance with State and Local Codes. When Electrical Specifications and/or Drawings do not agree with Local Building Ordinances, the Ordinances shall take precedence and the Architect/Engineer will be notified.

This Contractor shall pay for all permits or fees required for the work.

4. COOPERATION WITH OTHER CONTRACTORS:

Perform this work in conformity with the construction called for by other trades and afford other Contractors reasonable opportunity for the execution of their work; properly connect and coordinate this work with the work of other Contractors at such time and in such a manner as not to delay or interfere with their work.

Examine the Drawings and Specifications for the General and Mechanical work and the work of other similar trades; coordinate this work accordingly.

Promptly report to the Architect/Engineer any delay or difficulties encountered in the installation of this work, which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.

5. MATERIALS FURNISHED BY OTHERS:

Certain materials and equipment will be furnished by other Contractors. These materials and equipment, shown on the plans, will be installed by the Electrical Contractor and it shall be incumbent upon this Contractor to familiarize himself with all of the materials and equipment that will be furnished by others, but which he shall install under this contract.

6. MATERIALS AND WORKMANSHIP:

All materials shall be new and of the quality specified. Materials shall be standard products of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design. In all cases, material and equipment shall conform and bear the Underwriters' Laboratories, Inc., label, the fitness for use in the class of work in which it is to be used. All workmanship shall be thoroughly first-class and complete in both effectiveness and appearance, whether finally concealed or exposed, and shall be executed by experienced mechanics for all work installed under this division of the specification.

7. CUTTING FLOORS, WALLS OR CEILING:

Cutting, fitting, repairing, and finishing of carpentry work, metal work, or concrete work, etc., which may be required for this work shall be done by craftsmen skilled in their respective trades. When cutting is required, it shall be done in such a manner as not to weaken walls, partitions, or floors; and holes required to be cut in floors must be drilled without breaking out around the holes.

8. POSITION OF OUTLET:

Center all outlets with regard to paneling, furring, trim, etc. Where several outlets occur in a room, they shall be symmetrically arranged. Outlets improperly located or installed shall be satisfactorily corrected. Damaged finishes shall be repaired or replaced at the Contractor's expense. Outlets shall be set plumb or horizontal and shall extend to the finished surface of the walls, ceiling or floor as the case may be without projecting beyond same.

Receptacles, switches, etc. shown on wood trim, cases or other fixtures shall be installed symmetrically; and, where necessary, shall be set with the long dimension of the plate horizontal, or ganged in tandem.

9. SLEEVES:

All sleeves through floors and walls shall be black iron pipe, flush with walls, ceiling and finish floor of size to accommodate the raceway. Sleeves through outside walls above grade shall be caulked with approved caulking; below grade shall be caulked with oakum and lead wool.

10. ACCESS TO EQUIPMENT:

Starters, switches, receptacles, pull boxes, etc. shall be located to provide for easy access for operation, repair and maintenance; if concealed, access doors shall be provided.

11. "AS-BUILT" DRAWINGS:

The Contractor shall maintain at the construction site one complete set of drawings suitably marked to show all deviations from the original set of drawings. Supplementary sketches may be included if necessary to clearly indicate the work in place.

All work shall be shown to the satisfaction of the Architect/Engineer in order to insure that adequate information is indicated.

The Contractor shall, at the completion of the job, and before final payment is made, deliver to the Architect/Engineer a complete set of marked drawings showing the "As-Built" conditions.

12. CLEANING:

The Contractor shall maintain all areas free from hazardous or obstructive rubbish and debris, due to performance of the electrical work, during construction. When the electrical system has been installed, the Contractor shall remove all rubbish and debris from the building and site, remove all paint, plaster and accumulated dirt from all equipment and fixtures.

13. ELECTRICAL SERVICE:

The electric service shall be 480 v, three phase, 4-wire, for lighting and power. The service shall enter the new building as shown on the plans. Some general notes can be found on the site plan, however the contractor is strongly advised to visit the site and become familiar with the requirements and existing site conditions.

The Contractor shall furnish and install lighting and power distribution equipment and wiring as shown on the plan.

14. GROUNDING:

All metallic conduits, supports, cabinets and equipment shall be grounded in accordance with the requirements of the National Electrical Code and Municipal Codes and Ordinances. Grounding conductors shall be so located as to permit as far as practicable, the shortest and most direct path to the ground clamp. Ground connections to equipment should be made as close to current carrying parts as practicable.

All ground connections shall have clean contact surfaces and shall be tinned and sweated while bolting. Unless otherwise specified, ground cables shall be installed in exposed conduit, and connections shall be made readily accessible for inspection. Connections shall not be made underground or concealed in floors or walls.

15. PANELBOARDS:

The Main Panel shall be Square D Type HCM. Panel A shall be Square D Class 1130 QO Panelboard with Type QO breakers, or approved equal. Branch breakers shall employ quick-make and quick-break mechanisms for manual operation as well as automatic operation. Automatic tripping shall be indicated by the breaker handle assuming a distinctive position from the manual "ON" and "OFF". All multi-pole breakers shall have a common trip. Tie handles will not be permitted. Provide typed directories identifying load connected to each breaker. Panel size, number of branch circuits, size of branch circuits and size of main breaker shall be as shown on the drawings.

The emergency circuits shall be enclosed in a general duty safety switch fused as shown on the drawings. Provide enclosed, fusible or non-fusible safety switches where indicated and specified herein. Safety switches shall bear the Underwriters Label with each enclosure being of the NEMA type suitable for the surrounding area and conditions. Switches shall be normal duty, horsepower rated, and shall have a quick-make and quick-break mechanism. All switches used on motor circuits shall have adequate horsepower rating for the motor served and shall be of the fusible type only where two or more motors, or other loads, are connected to the same branch circuit.

Shop drawings shall be submitted as set forth in the General Conditions.

16. MOTOR CONTROL:

The Contractor shall furnish, install and connect a no-fuse safety switch ahead of each motor control, of the size and where indicated on the drawings, or as required by the National Electrical Code. All motor sizes and types of control shall be verified from approved mechanical shop drawings.

It shall be the Contractor's responsibility that all motors are protected with the proper size heater or thermal element, and fuses where fusible switches are shown or indicated on the drawings for each respective motor or item of equipment.

17. FUSES:

Fuses shall be furnished and installed in each fused safety switch rated as shown on the drawings. Fuses shall be Fusetrons, manufactured by the Bussman Mfg. Co.

18. CONDUIT RACEWAYS:

Raceways embedded in concrete on earth, installed in earth below floor slabs, exposed to weather, installed in the mechanical equipment rooms for feeders and for exposed installations, where subject to damage shall be rigid conduit. All other raceways shall be electrical metallic tubing. Electrical metallic tubing shall not be used in basement floor slab and outside slabs, but may be installed in concrete floor slabs on other floors. Flexible conduit may be used where conditions warrant its use. Each length of raceway shall be stamped or labeled with the name or trademark of the manufacturer and shall bear the Underwriters' Laboratories Label.

All conduits buried or otherwise in contact with earth shall be painted one heavy continuous coat of asphalt varnish after assembly of conduit and fittings.
Conduits shall be 1/2" minimum and shall contain no more than the maximum allowable number of conductors for the conduit size and type of work;

A. Type Material.

1) PVC Conduit. All conduit in the loadout bays, chemical areas, equipment rooms, etc. shall be PVC. Rigid PVC conduit and PVC electrical tubing shall be as manufactured by Carlon or approved equal. All conduit shall be UL listed.

2) PVC Coated Rigid Conduit. All conduit to motors in the dike or exposed to potential damage (i.e. which is not mounted on a wall or elevated protected raceway) shall be PVC Coated Rigid Conduit by OCAL or ROBROY installed on the surface next to plumbing lines.

3) Steel Conduit. Rigid steel conduit and steel electrical metallic tubing may be used in office areas that are separated from corrosive areas. It may be hot dipped, galvanized or sherardized as manufactured by Wheatland Electric Products Company, Allied Tube, National Electric, General Electric, or approved equal.

B. Installation.

a. Bending. Bends shall be neatly made through heating the conduit in accordance with the manufacturer's recommendations.

b. Joints. All joints shall be glued or threaded in accordance with manufacturers recommendations. All fittings shall be standard PVC fittings made for use with PVC conduit.

c. Cutting. Cutting shall be done with hand or power hack saws. Particular attention shall be given to adequate reaming.

19. CONDUCTORS:

All 600 volt, or less, conductors shall be copper with insulation of the following types, unless otherwise noted on the drawings.
THHN/THWN OR RHW for dry locations
THHN/THWN, RHW or THW for damp or wet locations
THHN/THWN, RHW or THW as required for feeders
THHN/THWN, RHW or THW for outdoor Underground circuits in conduit

No wire shall be smaller than No. 12, except that wiring for signal and pilot control circuits may be No. 14.

Conductors shall be continuous from outlet to outlet and no splices shall be made except within outlet or junction boxes. Junction boxes may be utilized where required.

Splices and taps for smaller than No. 6 wire shall be soldered and taped or pressure type set screw connectors shall be used, properly taped, except that splices in wire No. 10 or smaller at the Contractor's option may be made with twist-on uninsulated connectors similar and equal to Minnesota Mining & Manufacturing Company "Scotch-lock"; or preinsulated twist-on connectors, "Scotch-lock"; or preinsulated twist-on connectors, "Scotch-lock" Type R; or Ideal "Wing Nuts". All other twist-on connectors shall be specifically submitted for approval prior to use. Connectors of the porcelain cup type with or without metal inserts shall not be used, without exception, including all splices in fixtures which are made in advance by the fixture manufacturer. Splices in wire larger than No. 6 shall be made with approved solderless lugs. If any type of pressure indent type connector is proposed for use on any size conductor, it shall be specifically submitted for approval prior to use.

Taping of joints shall be done with rubber compound and friction tape, or with vinyl plastic as manufactured by Minnesota Mining & Manufacturing Company, or an approved equal.

Wire sizes shown are minimum based on code requirements, voltage drop and/or other considerations. Larger sizes may be installed at the Contractor's option to utilize stock sizes, provided conduit sizes are increased where necessary to conform to the National Electrical Code. Sizes of wires and cables indicated or specified are American wire gauge (Brown and Sharpe).

20. OUTLET BOXES, PULL BOXES AND CONDUIT FITTINGS:

Furnish and install outlet boxes, and conduit fittings as described below. Catalog numbers shown are Carlon Electric Company.

A. Outlet Boxes.

Lighting Boxes (concealed)	- No. E970D
Lighting Boxes (concrete)	- E972K
Lighting Boxes (exposed)	- No. E970D
Switch, Receptacles, Telephone and Junction Boxes (flush)	- Where separate extension or plastering cannot be used.
Switch, Receptacle and Telephone Boxes (exposed)	- FS Series

Exterior boxes shall be FS Series with suitable cover and Neoprene gaskets.

Outlet boxes shall comply with the National Electrical Code in regard to the allowable fill.

B. Pull Boxes. Pull boxes shall be fabricated of code thickness PVC sized as per National Electrical Code or as shown on the drawings. Provide removable cover on the largest access side of the box.

21. LIGHTING FIXTURES:

Furnish and install all lighting fixtures as shown on the drawings and specified herein. Lighting fixtures specified shall be used as a basis and standard of comparison in the consideration of fixtures of other manufacturers. The Architect/Engineer shall be the sole and final judge as to the suitability of substitutions.

All lighting fixtures and their electrical components shall bear the Underwriters' Laboratories label of approval.

LED lamps shall be CE certified, and ETL approved as manufactured by Advance, General Electric, Jefferson or Universal, or equal.

All LED lamps shall be manufactured by Sylvania, Westinghouse or General Electric. Lamps of other manufacturers may be installed only after written approval is obtained from the Architect/Engineer. Failure to obtain said approval will result in the rejection of all lamps, installed, and all costs herein shall be borne by this Contractor. Fluorescent lamps shall be cool-white except where indicated on schedule.

Within thirty (30) days after award of contract, furnish the Architect/Engineer PDF shop drawing portfolios containing names of manufacturer, cuts, and curves of all lighting fixtures to be used on this project. The portfolios shall be made of standard manufacturer's specification sheets and each fixture shall be identified by number indicated on fixture schedule.

22. ELECTRICAL EQUIPMENT CONNECTIONS:

A. The Mechanical Contractor shall furnish all equipment pertaining to his work, including motors, relays, temperature and pressure control devices, electrically operated valves and dampers and other control and protective devices. Motor starters except in prewired units, starting devices and disconnect switches shall be furnished and installed by the Electrical Contractor.

B. The Mechanical Contractor will install all mechanical equipment. The Electrical Contractor will wire all equipment except those requiring only low voltage electrical connections, such as thermostats, etc. These low voltage items when furnished by the Mechanical Contractor shall be installed and wired by same. The Electrical Contractor shall provide necessary conduit and boxes as required to locations shown on the plans.

C. The Mechanical Contractor shall set motors pertaining to his work.

D. Wiring shall be in accordance with the drawings and specifications and per approved wiring diagrams, which will be submitted by the mechanical contractor.

23. WIRING DEVICES:

Where shown on the drawings, furnish and install wiring devices indicated by the symbols. Catalog numbers shown are those of Leviton unless otherwise indicated, color to be selected by Architect.

A. Switches. Branch circuit switches shall be quiet toggle type as follows:
Single Pole - CS120 Series

B. Receptacles. All receptacles shall be of the type indicated as follows:
Weatherproof Duplex Receptacles - GFC1 6899 Series w/6196-V cover
(Ground Type)

C. Plates. Furnish and install wall plates for all wiring devices. Plates shall be galvanized in work and storage areas or high abuse nylon in office and finished areas. Plate shall be of a type designed to fit the box. Blank covers shall be installed on all boxes, without devices or fixtures, of same type as installed on devices in the room or area. Color shall be selected by the architect or owner.

24. MOUNTING HEIGHTS:

Mounting heights to center of box above finished floor for the below-named items shall be as follows, unless otherwise shown:

Switches	48"
Convenience outlets	12" and 36"
Safety switches	54"
Motor controllers	54"
Panelboards, to top	72"
Bracket lights	as indicated

Note: verify exact mounting heights with Architect prior to installation.

25. FAULT CURRENT

Contractor shall complete the available fault current calculation required by the latest State approved NEC addition. The available fault current calculation documentation shall be submitted to the Engineer and owner when completed.

Contractor shall field mark service equipment with the maximum available fault current. The marking(s) shall include the calculation date and be of sufficient durability to withstand the environment involved.

I, GREG A. WOLFORD, am the Coordinating Professional on the NEW DIKE AND LOADPAD project.

This bar is one inch long on original drawing.

If not one inch on this sheet, adjust scales accordingly.

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NEW DIKE AND LOADPAD

WILBUR-ELLIS COMPANY
13586 BAYVIEW EDISON RD
MOUNT VERNON, WA

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STATE OF WASHINGTON
26006932
REGISTERED
PROFESSIONAL ENGINEER
4/21/2026

EXPIRES: 10/03/2027

DWG: 887MT-25
DRAWN:
CHECKED:
REVISIONS

E301

DATE: DEC. 2025