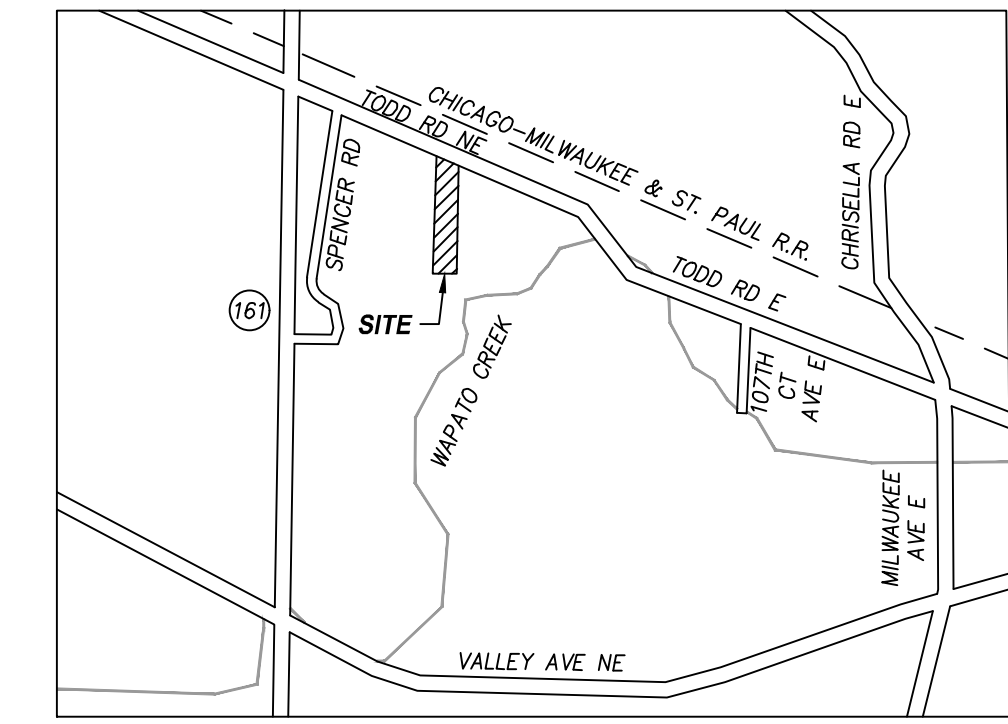


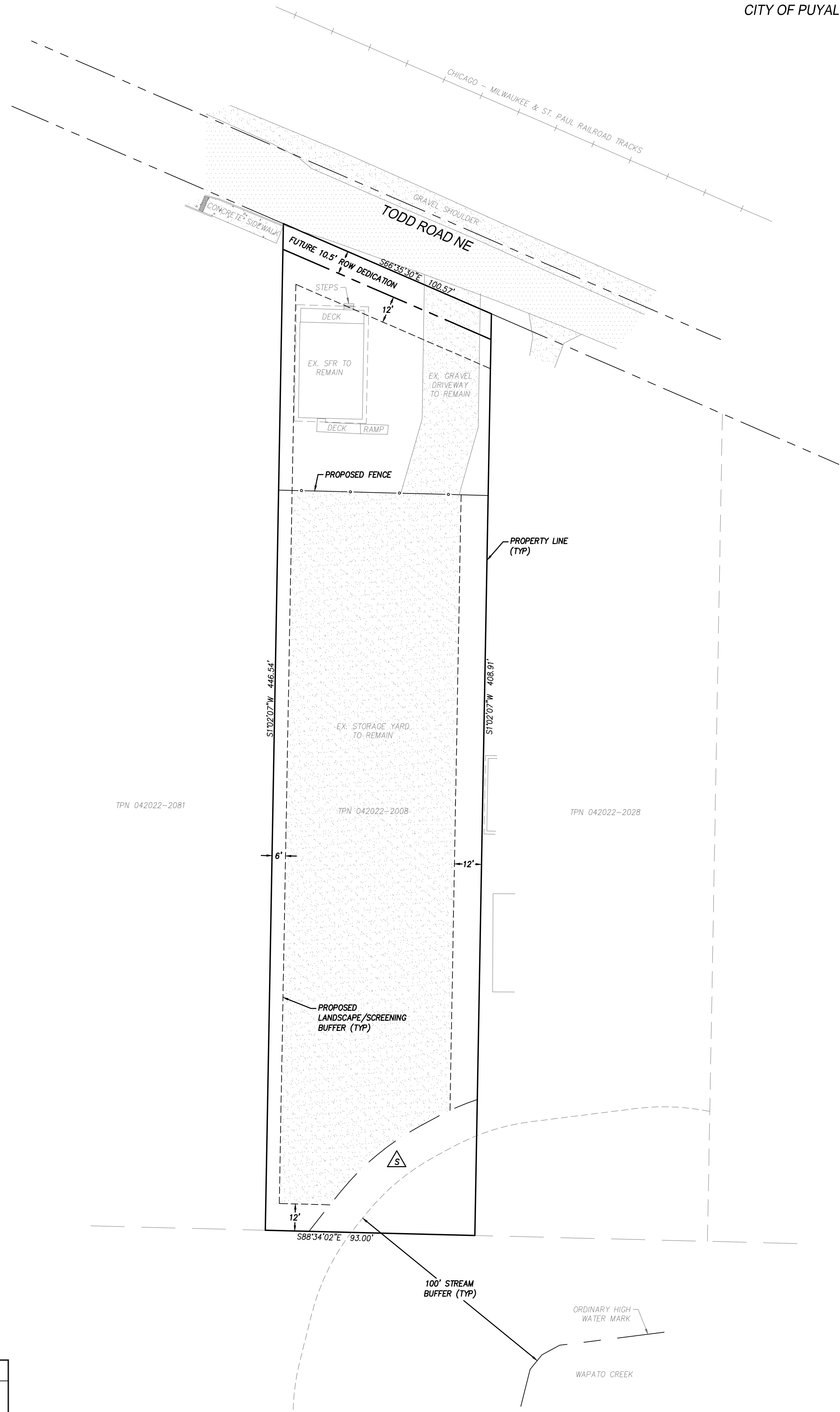
0 5 10 20 30  
SCALE 1" = 30'

# APL PROPERTIES

A PORTION OF THE NW 1/4 OF NW 1/4 OF SECTION 22, T. 20 N., R. 04 E., W.M.  
CITY OF PUYALLUP, PIERCE COUNTY, STATE OF WASHINGTON



VICINITY MAP  
NTS



### PROJECT TEAM:

**APPLICANT:** AMERICAN PRIDE LENDING, LLC  
PO BOX 1226  
KENT, WA 98035  
(206) 817-9839  
CONTACT SIKANDER SEKHON

**ENGINEER/SURVEYOR/PLANNER:** SAM SALO, PE / STEVE MCCASKEY, PLS / AMY DONLAN  
ENCOMPASS ENGINEERING & SURVEYING  
165 N.E. JUNIPER STREET, SUITE 201  
ISSAQUAH, WA 98027  
(425) 392-0250

**GEOTECH:** HENRY WRIGHT, PE  
EARTH SOLUTIONS NW LLC  
15365 NE 90TH STREET, SUITE 100  
REDMOND, WA 98052  
(425) 449-4704

**WETLAND ECOLOGIST:** JOHN ALTMANN  
ALTMANN OLIVER ASSOCIATES, LLC  
PO BOX 578  
CARNATION, WA 98014  
(425) 335-4535

### SITE DATA:

**SITE ADDRESS:** 212 TODD RD NE  
PUYALLUP, WA 98371

**SITE AREA:** 39,779 SF (0.91 AC) - AS SURVEYED

**TAX PARCEL:** 042022-2008

**ZONING:** RM-20 HIGH DENSITY  
MF RESIDENTIAL

**MAX. NET DENSITY:** 14 DU/ACRE

**MAX. ALLOWABLE DENSITY:** 16 DU/ACRE

**PROPOSED USE:** LIGHT MANUFACTURING - ML  
CONTRACTOR SHOP & STORAGE YARD

**TOTAL PROPOSED LOTS:** 1

### SETBACKS:

	RM-20	ML
FRONT SETBACK:	20'	20'
INTERIOR SETBACK:	20'	0'
REAR SETBACK:	15'	0'
STREAM BUFFER SETBACK:	15'	

### UTILITY DISTRICT INFORMATION:

**SANITARY SEWER:** CITY OF PUYALLUP (253) 841-5505

**WATER:** CITY OF PUYALLUP (253) 841-5505

**FIRE:** CENTRAL PIERCE FIRE & RESCUE (253) 538-6400

**PHONE/CABLE:** CENTURY LINK (866) 642-0444

**ELECTRIC/NATURAL GAS:** PUGET SOUND ENERGY (888) 225-5773

### IMPERVIOUS SURFACES:

EXISTING RESIDENCE (ROOF):	1,653 SF
EXISTING UNCOVERED STEPS/RAMP/DECK:	140 SF
EXISTING STORAGE YARD GRAVEL:	22,395 SF
<b>TOTAL:</b>	<b>24,188 (60.80%)</b>

### GRADING VOLUMES

CUT:	5 CY ±
FILL:	5 CY ±
NET:	0 CY ±

\*TO BE VERIFIED BY CONTRACTOR

### SITE AREAS SUMMARY:

BUILDING FOOT PRINT: 1,804 SF  
ENTIRE SITE GRAVELED AREA:

SITE WORK: THE SITE AND HOUSE ON-SITE WERE IN SERIOUS DISREPAIR WHEN THE OWNER TOOK POSSESSION OF THE PROPERTY. THE HOUSE WAS CLEANED UP, PAINTED AND REPAIRED TO BE HABITABLE. THE SITE WAS CLEARED OF ALL ACCESSORY STRUCTURES/CONTAINERS, A LARGE AMOUNT OF GARBAGE AND TRANSCIENTS THAT WERE SQUATTING ON-SITE. AFTER THE DEBRIS WAS REMOVED, THE SITE WAS LEVELED AND GRAVELED TO PROPERTY LINES. THE OWNER WOULD LIKE TO ADDRESS CORRECTIVE ACTION REQUIRED BY THE CITY.

Please include the amount of gravel fill in cubic yards that was brought on site. SEPA is not required for projects that involve less than 500 cubic yards of fill or excavation [plan set, pg.1]

### LEGAL DESCRIPTION:

BEGINNING AT A POINT 683 FEET EAST OF THE SOUTHWEST CORNER OF LOT 5 IN SECTION 22, TOWNSHIP 20 NORTH, RANGE 4 EAST OF THE WILLAMETTE MERIDIAN; THENCE NORTH PARALLEL WITH THE WEST BOUNDARY OF SAID LOT, 442 FEET MORE OR LESS TO THE RIGHT OF WAY OF CHICAGO, MILWAUKEE & ST PAUL RAILWAY COMPANY; THENCE NORTHWESTERLY ALONG SAID RIGHT OF WAY 100 FEET; THENCE SOUTH PARALLEL WITH AND 93 FEET DISTANCE FROM EAST BOUNDARY OF TRACT 478 FEET MORE OR LESS TO A POINT 93 FEET WEST OF THE POINT OF BEGINNING; THENCE EAST 93 FEET TO THE POINT OF BEGINNING.

EXCEPT THE NORTHERLY 15 FEET FOR TODD ROAD NORTHEAST.

SITUATE IN THE CITY OF PUYALLUP, COUNTY OF PIERCE, STATE OF WASHINGTON.

### VERTICAL DATUM:

NAVD 88

### HORIZONTAL DATUM:

NAD 83/(2011) WASHINGTON SOUTH ZONE PER THE WASHINGTON STATE REFERENCE NETWORK - CHECKED TO PIERCE COUNTY REFERENCE NETWORK VIA TIES TO FOUND MONUMENTS SM 3572 AND SM 3662

### BENCHMARK:

HELD CITY OF PUYALLUP BENCHMARK NW-TODD 7  
CONVERTED NVD 29 ELEVATION OF 39.68' TO NAVD 88 ELEVATION OF 43.17 BY ADDING THE 3.49' PER CORPSCON DATA CONVERSION SOFTWARE

### BASIS OF BEARINGS:

HELD CITY OF PUYALLUP BENCHMARK NW-TODD 7  
CONVERTED NVD 29 ELEVATION OF 39.68' TO NAVD 88 ELEVATION OF 43.17 BY ADDING THE 3.49' PER CORPSCON DATA CONVERSION SOFTWARE

### INSTRUMENTATION:

INSTRUMENT USED: 5 SECOND TOTAL STATION.

FIELD SURVEY WAS BY CLOSED TRAVERSE LOOPS, MINIMUM CLOSURE OF LOOPS WAS 1:22,000, IN ACCORDANCE WITH WAC 332-130-090.

### EXISTING UTILITY NOTE:

ALL LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN.

### CONTRACTOR RESPONSIBILITY:

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

### DISCREPANCIES:

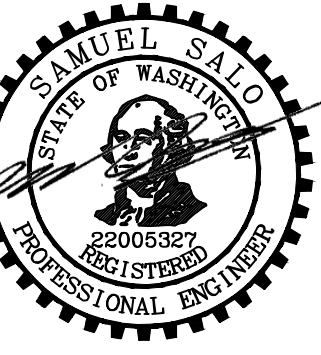
IF THERE ARE ANY DISCREPANCIES BETWEEN DIMENSIONS IN DRAWINGS AND EXISTING CONDITIONS WHICH WILL AFFECT THE WORK, THE CONTRACTOR SHALL BRING SUCH DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR ADJUSTMENT BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FITTING OF ALL WORK AND FOR THE COORDINATION OF ALL TRADES, SUBCONTRACTORS, AND PERSONS ENGAGED UPON THIS CONTRACT.

### CONTRACTOR NOTES:

1. THE CONTRACTOR SHALL HAVE APPROVED PLANS, STANDARD NOTES, STANDARD DETAILS AND SPECIFICATIONS AVAILABLE ON JOB SITE.
2. CONTRACTOR TO COORDINATE CONNECTIONS TO DRY UTILITIES. CALL 811 FOR UTILITY LOCATES.

### SHEET INDEX

TITLE	NO.
COVER SHEET	1 of 5
BOUNDARY TOPOGRAPHIC SURVEY	2 of 5
TESC PLAN & DETAILS	3 of 5
GRADING & DRAINAGE PLAN	4 of 5
CONSTRUCTION DETAILS	5 of 5



1/10/2023

APL PROPERTIES  
AMERICAN PRIDE LENDING, LLC  
COVER SHEET

**Encompass**  
ENGINEERING & SURVEYING

Western Washington Division  
165 NE Juniper Street, Suite 201, Issaquah, WA 98027 Phone: (425) 392-0250  
Eastern Washington Division  
407 Stillwater Blvd., C/O Ellum, WA 98922 Phone: (509) 674-7433



Know what's below.  
Call before you dig.

JOB NO.	21715
DATE	1/10/2023
SCALE	1"=10'
DESIGNED	SRS
DRAWN	PMS
CHECKED	CJA
APPROVED	CJA

SHEET 1 of 5

THE PLANS SET FORTH ON THIS SHEET ARE AND SHALL REMAIN THE PROPERTY OF ENCOMPASS ENGINEERING & SURVEYING.

REVISIONS

DESCRIPTION

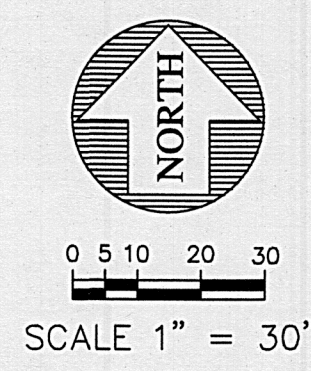
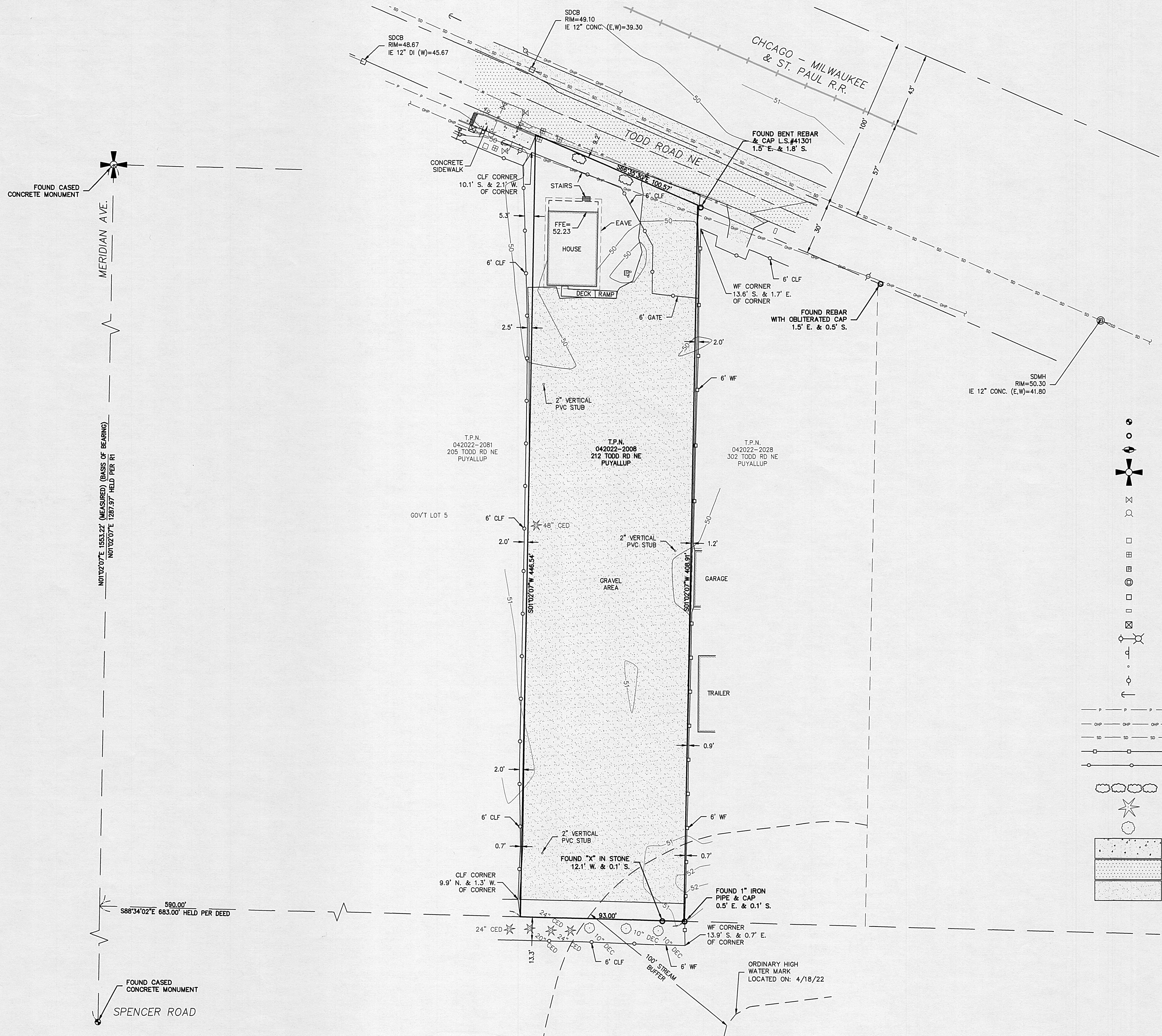
BY

DATE

FILENAME: J:\21715 - NW (PUYALLUP)\ENGINEERING\PLAN SHEETS\PRELIM\21715 - COVER.DWG

# APL PROPERTIES

A PORTION OF THE NW 1/4 OF NW 1/4 OF SECTION 22, T. 20 N., R. 04 E., W.M.  
CITY OF PUYALLUP, PIERCE COUNTY, STATE OF WASHINGTON



- LEGEND
- FOUND MONUMENT IN CASE
  - FOUND REBAR & CAP
  - BENCHMARK
  - SECTION CORNER
  - WATER VALVE
  - FIRE HYDRANT
  - FIRE DEPARTMENT CONNECTION
  - WATER VALVE BOX
  - WATER METER
  - IRRIGATION CONTROL VALVE
  - STORM MANHOLE
  - CATCH BASIN
  - MAILBOX
  - JUNCTION BOX
  - LIGHT POLE
  - SIGN POST
  - POST
  - UTILITY POLE
  - GUY ANCHOR
  - UNDERGROUND POWER LINE
  - OVERHEAD POWER LINE
  - STORM LINE
  - WOOD FENCE (WF)
  - CHAIN LINK FENCE (CLF)
  - HEDGE LINE
  - EVERGREEN TREE
  - DECIDUOUS TREE
  - CONCRETE
  - ASPHALT
  - GRAVEL

TAX PARCEL  
042022-2008

VERTICAL DATUM  
NAVD 88

BENCHMARK  
HELD CITY OF PUYALLUP BENCHMARK NW-TODD 7  
CONVERTED NGVD 29 ELEVATION OF 39.68' TO NAVD 88  
ELEVATION OF 43.17 BY ADDING THE 3.49' PER CORPSPCON  
DATA CONVERSION SOFTWARE

HORIZONTAL DATUM  
NAD 83 (2011) WASHINGTON SOUTH ZONE PER THE  
WASHINGTON STATE REFERENCE NETWORK - CHECKED TO  
PIERCE COUNTY REFERENCE NETWORK VIA TIES TO FOUND  
MONUMENTS SM 3572 AND SM 3662

BASIS OF BEARINGS  
HELD A BEARING OF S 01°02'07" W ALONG THE WEST LINE  
OF GOVT LOT 5 FROM THE FOUND MONUMENT AT THE NW  
CORNER THEREOF TO A MONUMENT LOCATED ALONG THE  
EXTENSION OF SAID WEST LINE LOCATED AT THE CENTER OF  
INTERSECTION OF MERIDIAN AVE AND SPENCER RD E

INSTRUMENTATION  
INSTRUMENT USED: 5 SECOND TOTAL STATION.

FIELD SURVEY WAS BY CLOSED TRAVERSE LOOPS, MINIMUM  
CLOSURE OF LOOPS WAS 1:22,000, IN ACCORDANCE WITH  
WAC 332-130-090.

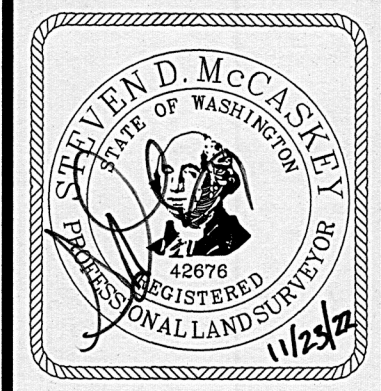
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CORNER OF LOT 5 IN SECTION 22, TOWNSHIP 20 NORTH,  
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FEET;  
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EXCEPT THE NORTHERLY 15 FEET FOR TODD ROAD  
NORTHEAST.

SITUATE IN THE CITY OF PUYALLUP, COUNTY OF PIERCE,  
STATE OF WASHINGTON.

REFERENCES  
ROS 201604285004 (R1)  
ROS 202012225005  
ROS 9005230358  
CHICAGO, MILWAUKEE AND ST PAUL RR NORTH PUYALLUP  
TRACK MAPS

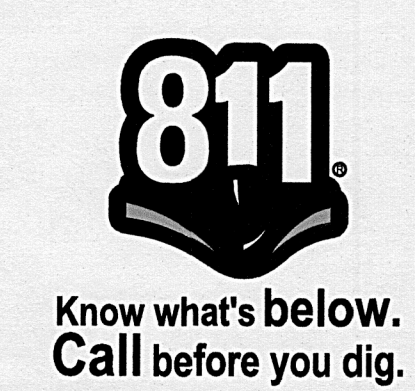
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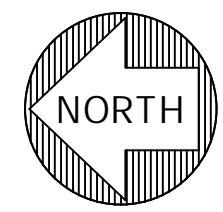
APL PROPERTIES  
AMERICAN PRIDE LENDING, LLC  
BOUNDARY TOPOGRAPHIC SURVEY

**Encompass**  
ENGINEERING & SURVEYING

Western Washington Division  
165 NE Juniper Street, Suite 201 • Issaquah, WA 98027 • Phone: (425) 392-0250  
Eastern Washington Division  
407 Swinwater Blvd. • Cle Elum, WA 98822 • Phone: (509) 674-1433



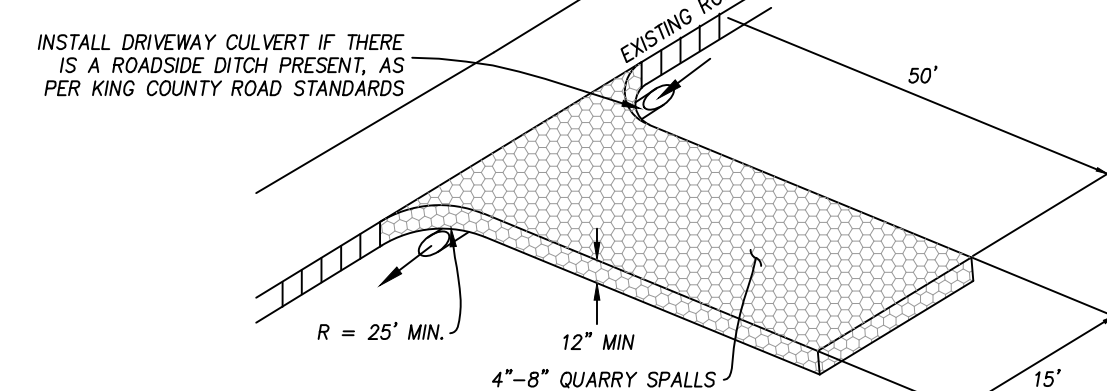
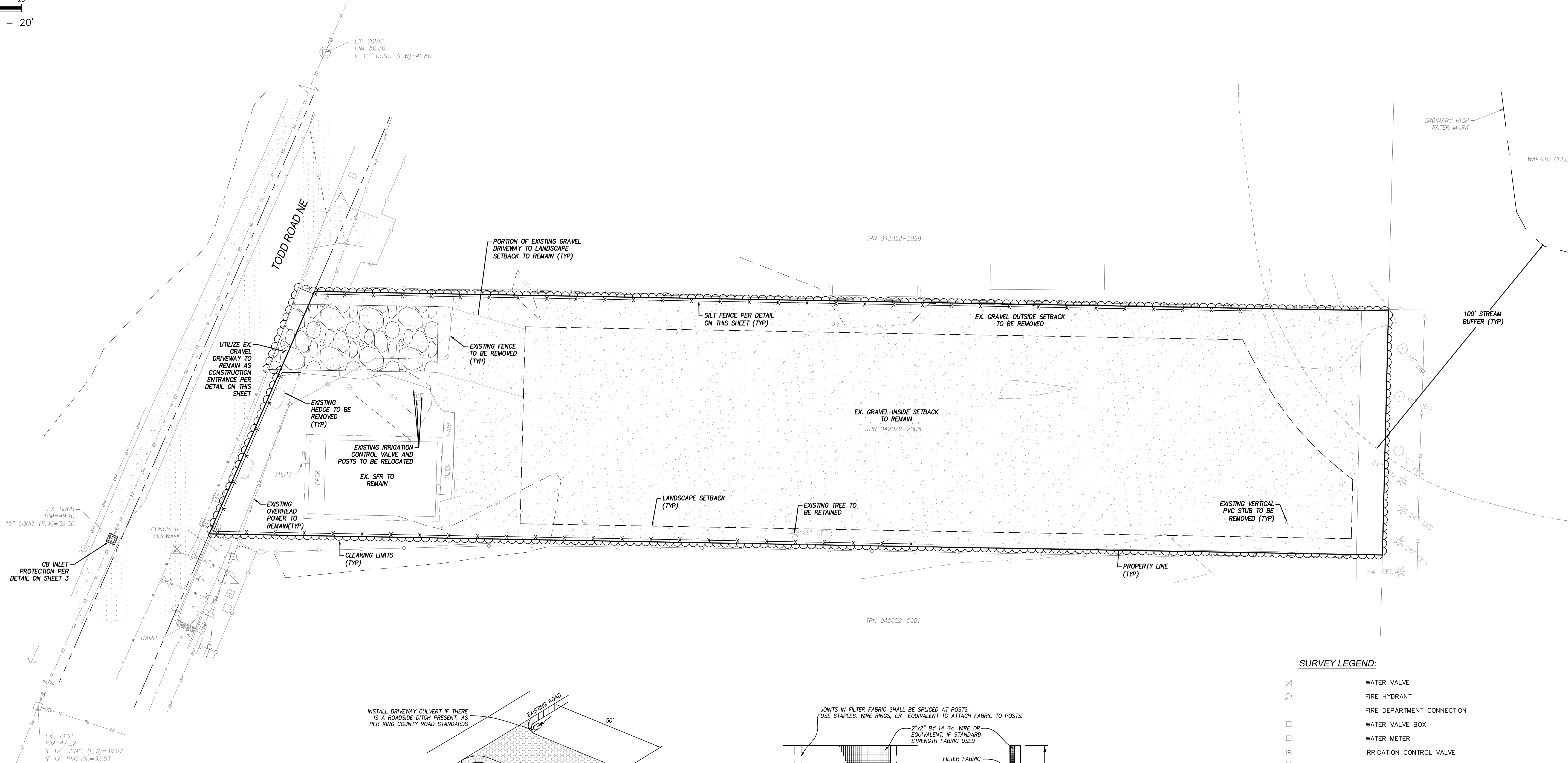
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DATE	07/07/2022
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DESIGNED	N/A
DRAWN	LFM
CHECKED	SDM
APPROVED	SDM
SHEET	2 of 5



SCALE 1" = 20'

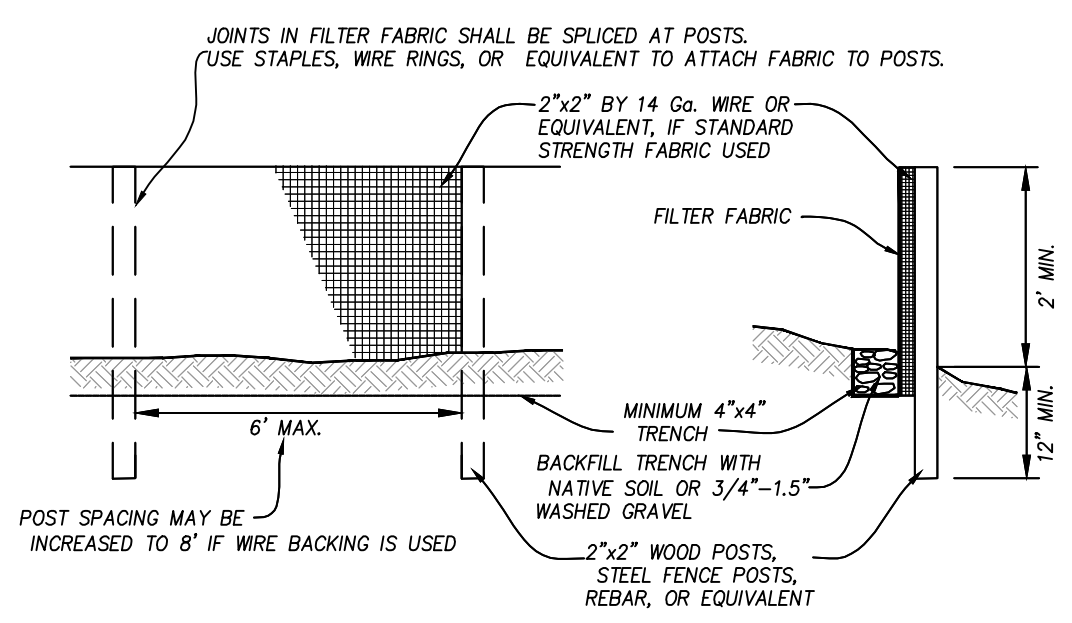
# APL PROPERTIES

A PORTION OF THE NW 1/4 OF NW 1/4 OF SECTION 22, T. 20 N., R. 04 E., W.M.  
CITY OF PUYALLUP, PIERCE COUNTY, STATE OF WASHINGTON



- MAINTENANCE PER 2016 KCSWDM**
1. QUARRY SPALLS (OR HOG FUEL) SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.
  2. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH. IF WASHING IS USED, IT SHALL BE DONE ON AN AREA COVERED WITH CRUSHED ROCK AND WASH WATER SHALL DRAIN TO A SEDIMENT TRAP OR POND.
  3. ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED IMMEDIATELY BY SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS, A SMALL SUMP MUST BE CONSTRUCTED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP WHERE IT CAN BE CONTROLLED. WASH WATER MUST BE PUMPED BACK ONTO THE SITE AND CAN NOT DISCHARGE TO SYSTEMS TRIBUTARY TO SURFACE WATERS.
  4. ANY QUARRY SPALLS THAT ARE LOOSENED FROM THE PAD AND END UP ON THE ROADWAY SHALL BE REMOVED IMMEDIATELY.
  5. IF VEHICLES ARE ENTERING OR EXITING THE SITE AT POINTS OTHER THAN THE CONSTRUCTION ENTRANCE(S), FENCING SHALL BE INSTALLED TO CONTROL TRAFFIC.

CONSTRUCTION ENTRANCE DETAIL  
NTS



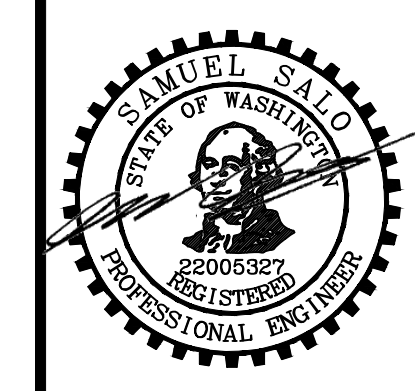
- SILT FENCE MAINTENANCE PER 2016 KCSWDM**
1. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
  2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND.
  3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
  4. SEDIMENT MUST BE REMOVED WHEN THE SEDIMENT IS 6 INCHES HIGH.
  5. IF THE FILTER FABRIC (GEOTEXTILE) HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

SILT FENCE DETAIL  
NTS

### SURVEY LEGEND:

- WATER VALVE
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER VALVE BOX
- WATER METER
- IRRIGATION CONTROL VALVE
- STORM MANHOLE
- CATCH BASIN
- MAILBOX
- JUNCTION BOX
- LIGHT POLE
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- HEDGE LINE
- EVERGREEN TREE
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- CONCRETE
- ASPHALT
- GRAVEL

REVISIONS	DESCRIPTION	BY	DATE



1/10/2023

APL PROPERTIES  
AMERICAN PRIDE LENDING, LLC  
TESC PLAN & DETAILS



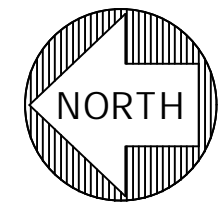
JOB NO.	21715
DATE	1/10/2023
SCALE	1"=20'
DESIGNED	SRS
DRAWN	PMS
CHECKED	CJA
APPROVED	CJA

SHEET 3 of 5



Know what's below.  
Call before you dig.

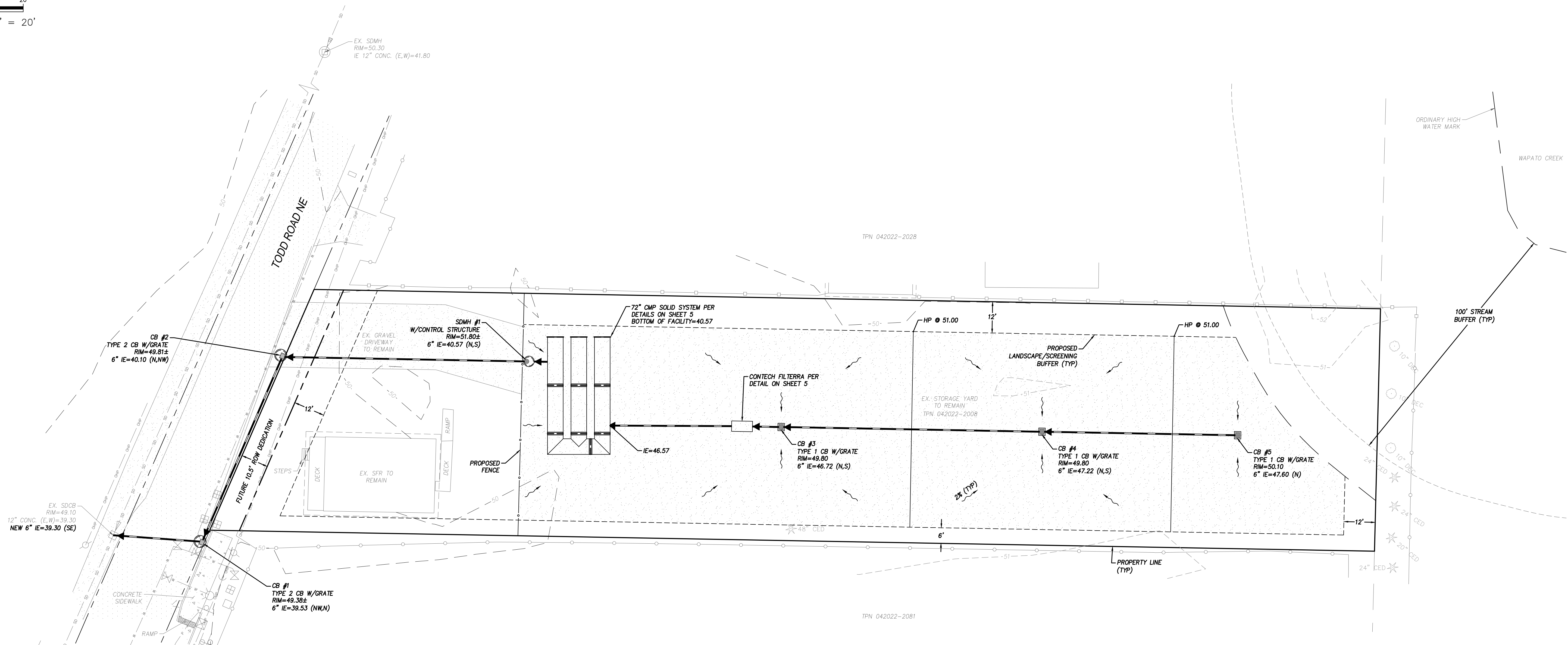
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SCALE 1" = 20'

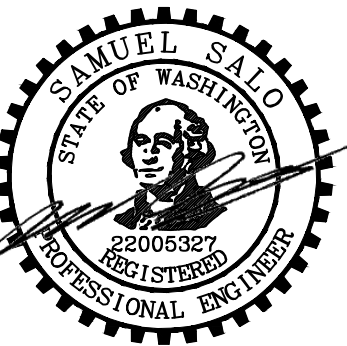
# APL PROPERTIES

A PORTION OF THE NW 1/4 OF NW 1/4 OF SECTION 22, T. 20 N., R. 04 E., W.M.  
CITY OF PUYALLUP, PIERCE COUNTY, STATE OF WASHINGTON



### SURVEY LEGEND:

- WATER VALVE
- FIRE HYDRANT
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- GRAVEL



1/10/2023

APL PROPERTIES  
AMERICAN PRIDE LENDING, LLC  
GRADING & DRAINAGE PLAN



JOB NO.	21715
DATE	1/10/2023
SCALE	1"=20'
DESIGNED	SRS
DRAWN	PMS
CHECKED	CJA
APPROVED	CJA

SHEET 4 of 5



Know what's below.  
Call before you dig.

FILENAME: J:\21715 - NW PUYALLUP\ENGINEERING\PLAN SHEETS\PRELIM\21715 - GRADING

# APL PROPERTIES

A PORTION OF THE NW 1/4 OF NW 1/4 OF SECTION 22, T. 20 N., R. 04 E., W.M.  
CITY OF PUYALLUP, PIERCE COUNTY, STATE OF WASHINGTON

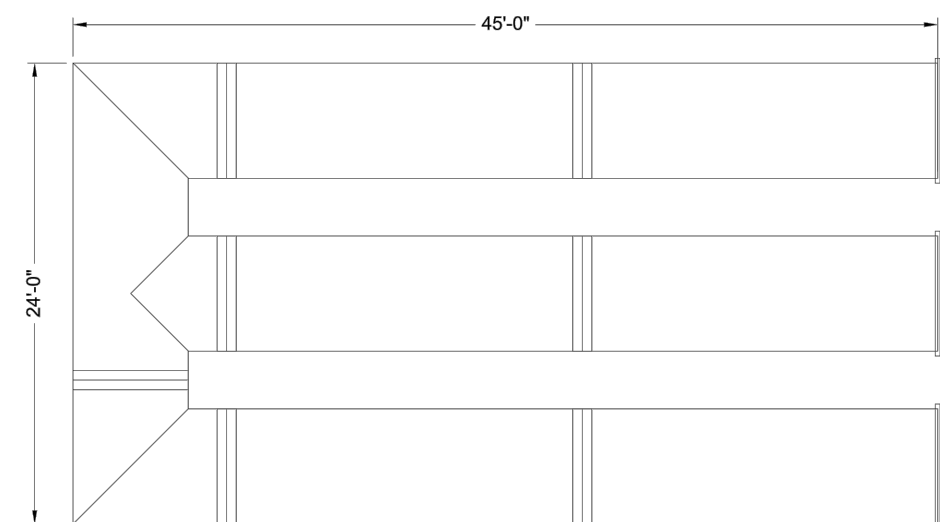
## PROJECT SUMMARY

**CALCULATION DETAILS**  
 • LOADING = HS20HS25  
 • APPROX. LINEAR FOOTAGE = 141 LF

**STORAGE SUMMARY**  
 • STORAGE VOLUME REQUIRED = 3,964 CF  
 • PIPE STORAGE VOLUME = 3,967 CF  
 • BACKFILL STORAGE VOLUME = 0 CF  
 • TOTAL STORAGE PROVIDED = 3,967 CF

**PIPE DETAILS**  
 • DIAMETER = 72"  
 • CORRUGATION = 5x1  
 • GAGE = 16  
 • COATING = ALZ  
 • WALL TYPE = SOLID  
 • BARREL SPACING = 36"

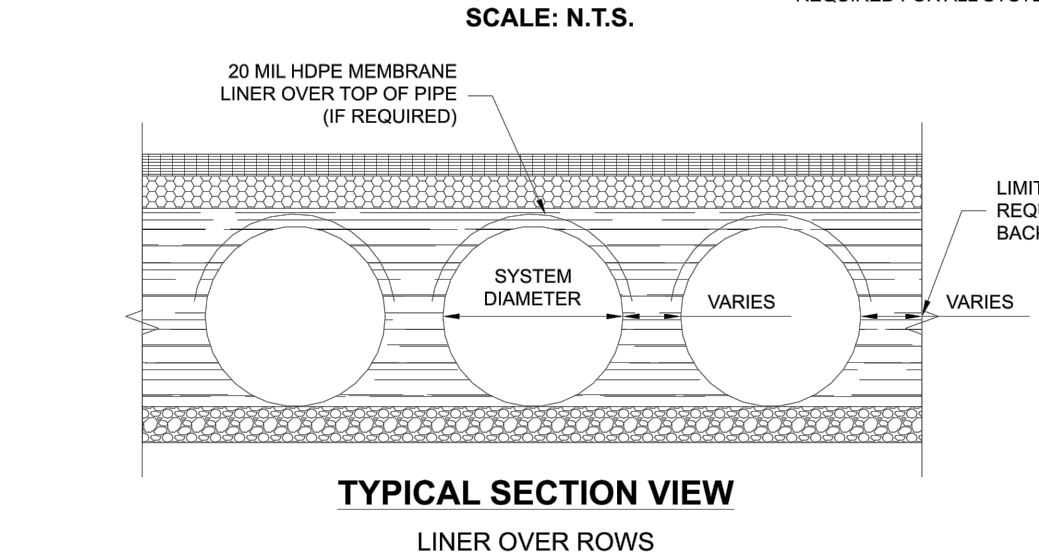
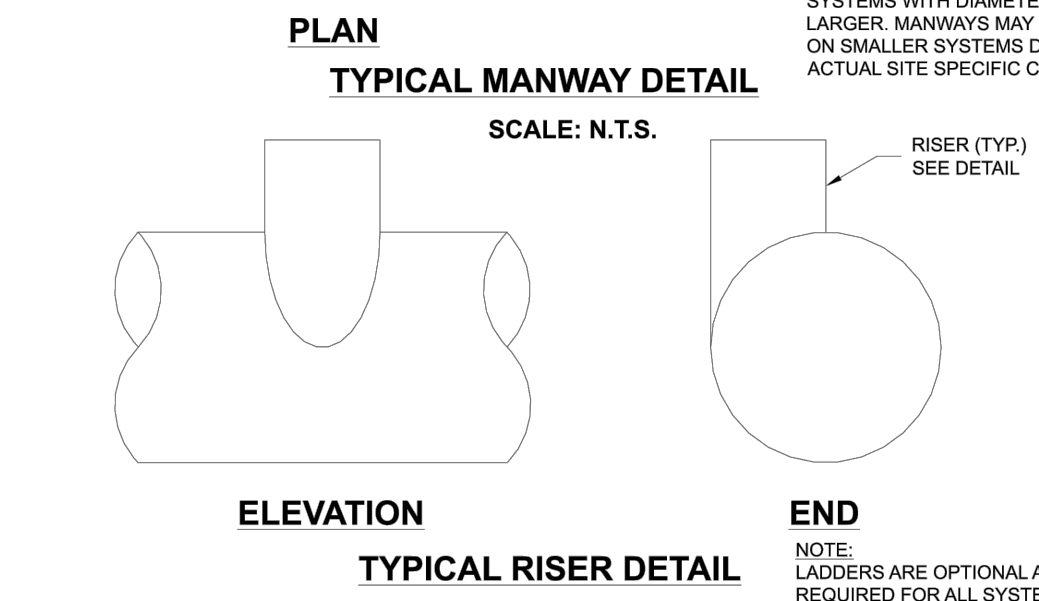
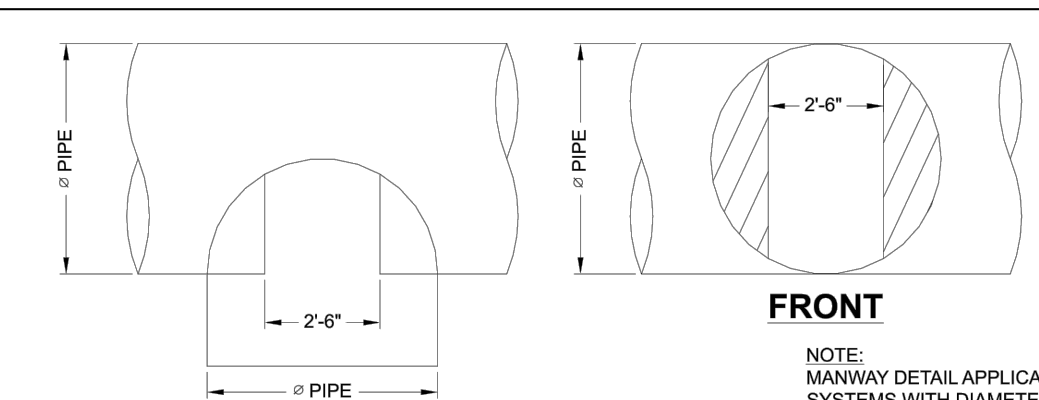
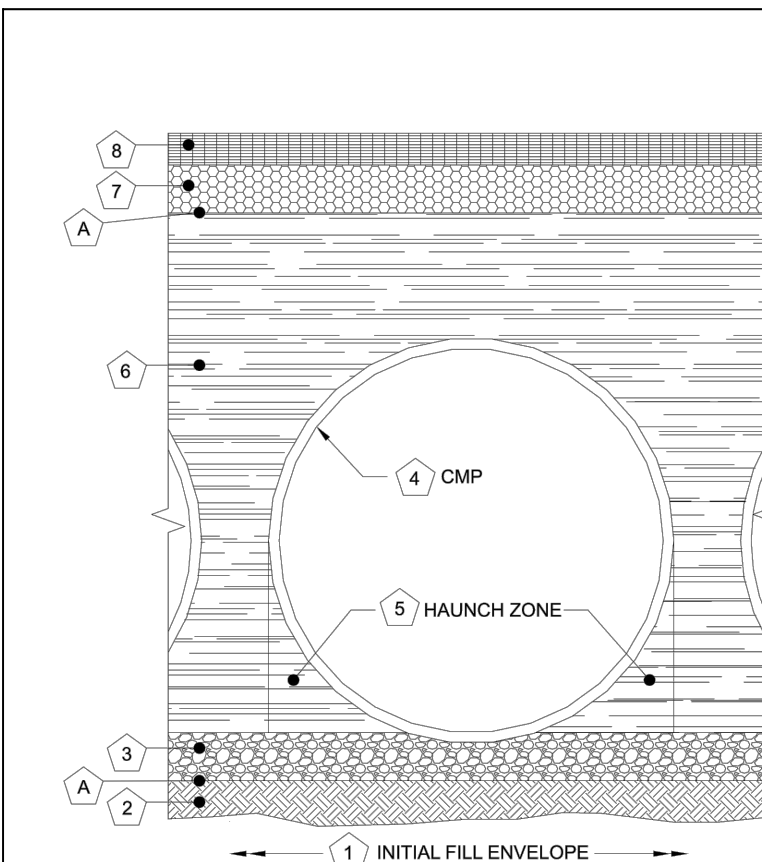
**BACKFILL DETAILS**  
 • WIDTH AT ENDS = 12"  
 • ABOVE PIPE = 0"  
 • WIDTH AT SIDES = 12"  
 • BELOW PIPE = 0"



**ASSEMBLY**  
SCALE: 1" = 10'

### NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A996.
- ALL RISERS AND STUBS ARE 2 1/2" x 1/2" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAIL PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYCOS DESIGN. QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



**DETENTION SYSTEMS - CMP DETENTION / CMP DRAINAGE**

Material Location	Description	Material Designation	Designation
8	Ridge or Flexible Pavement (if applicable)		
7	Road Base (if applicable)		
6	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45
6	Backfill	Well graded granular material which may contain small amounts of silt or clay.	AAASHTO M 145-A-1, A-2, A-3
5	Bedding Stone	Well graded granular bedding material maximum particle size of 3"	AAASHTO M 81, 3.587, 4.467, 5, 56, 57
4	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45

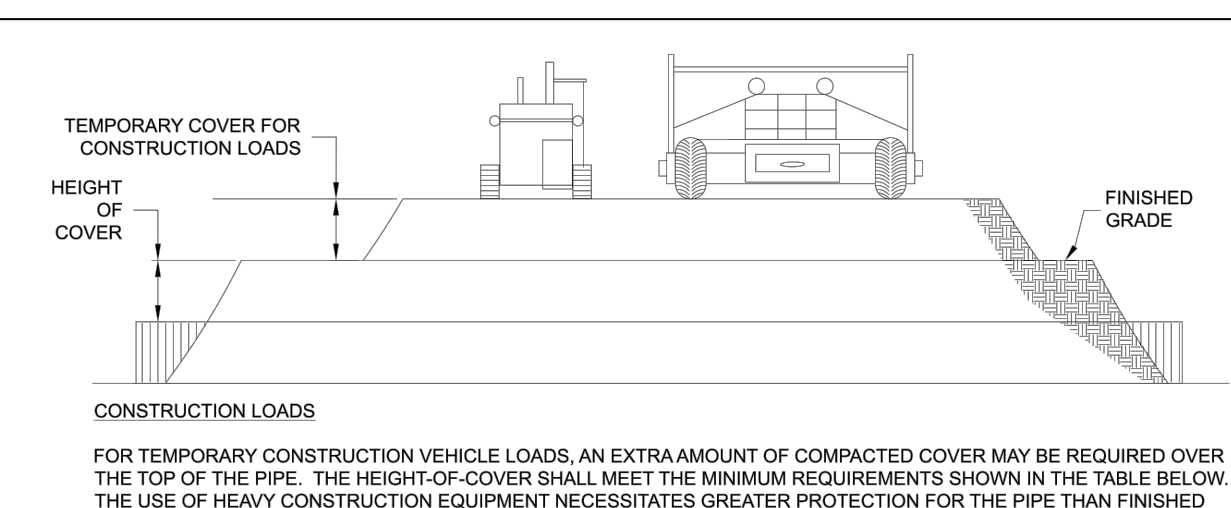
NOTE: Backfill using controlled low-strength material (CLSM "trash 60" or "flowable 10") when the spacing between the pipes will not allow for placement and adequate compaction of the backfill.

1 MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT  
 FOUNDATION/BEDDING PREPARATION  
 2 PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER.  
 3 HAUNCH ZONE MATERIAL SHALL BE PLACED AND UNIFORMLY COMPACTED WITHOUT SOFT SPOTS.  
 4 BACKFILL  
 WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (10") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE.  
 5 OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.

NOTE: MANWAY DETAIL APPLICABLE FOR CMP SYSTEMS WITH DIAMETERS 48" AND LARGER. MANWAYS MAY BE REQUIRED ON SMALLER SYSTEMS DEPENDING ON ACTUAL SITE SPECIFIC CONDITIONS.

NOTE: RISER (TYP.) SEE DETAIL.

NOTE: LADDERS ARE OPTIONAL AND ARE NOT REQUIRED FOR ALL SYSTEMS.



PIPE SPAN, INCHES	AXLE LOADS (kips)			
	16-50	55-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

\*MINIMUM COVER MAY VARY DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

**CONSTRUCTION LOADING DIAGRAM**  
SCALE: N.T.S.

**SPECIFICATION FOR DESIGNED DETENTION SYSTEM:**

SCOPE  
 THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL  
 THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW.

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-829.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS  
 CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSIPA GUIDELINES.

NOTE:  
 THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

PIPE  
 THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW.

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760  
 GALVANIZED: AASHTO M-36 OR ASTM A-760

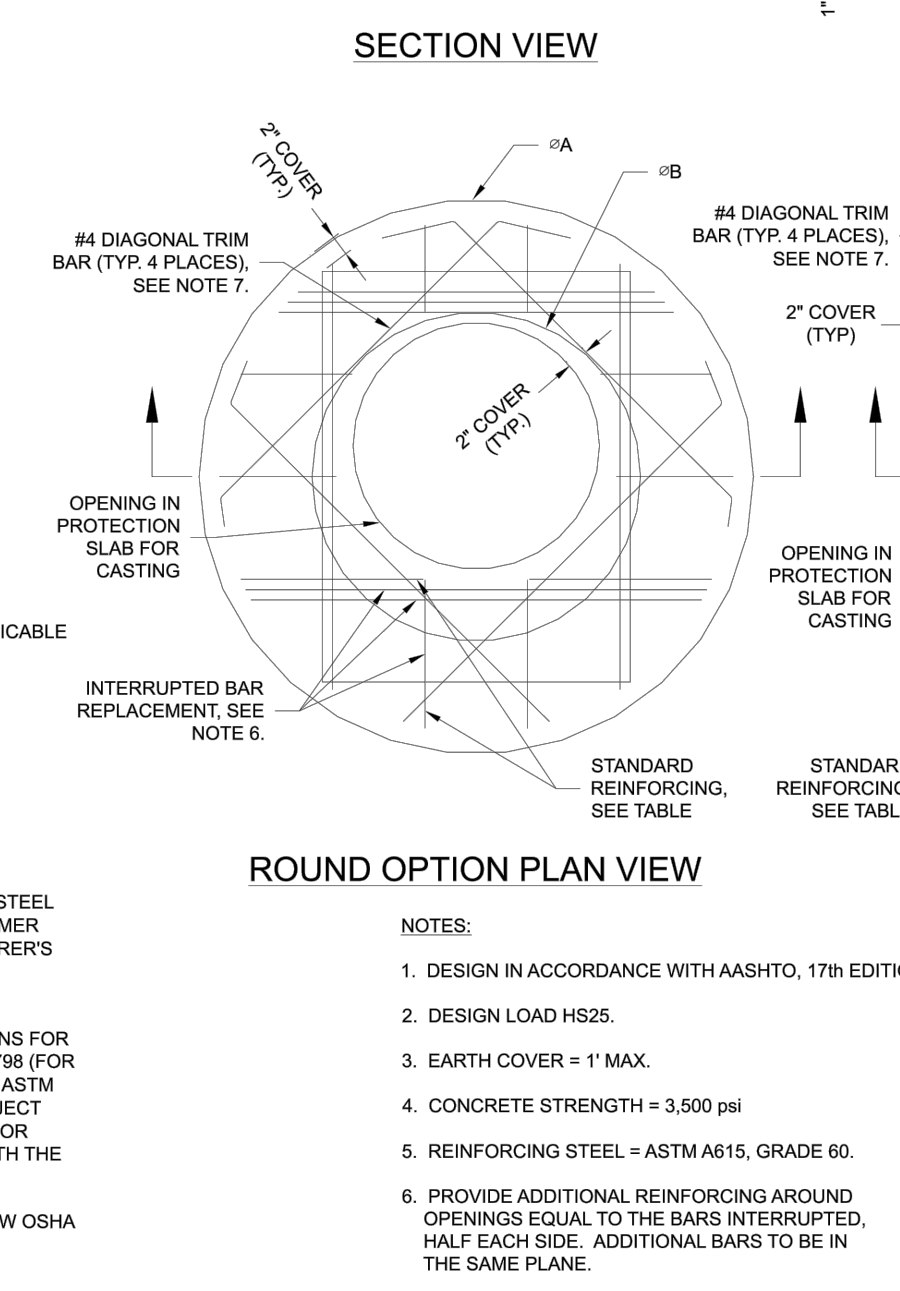
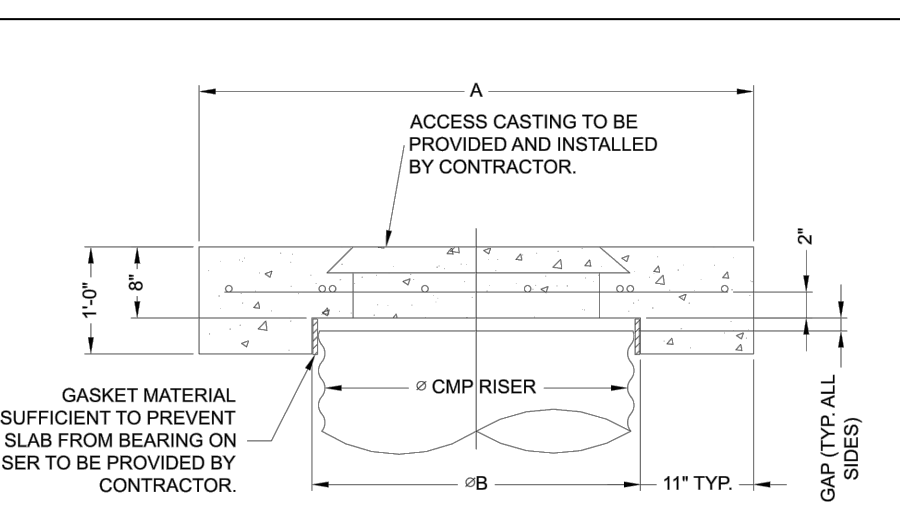
POLYMER COATED: AASHTO M-246 OR ASTM A-742

ALUMINUM: AASHTO M-196 OR ASTM B-745

APPLICABLE  
 HANDLING AND ASSEMBLY SHALL BE IN ACCORDANCE WITH NCSIPA (NATIONAL CORRUGATED STEEL ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

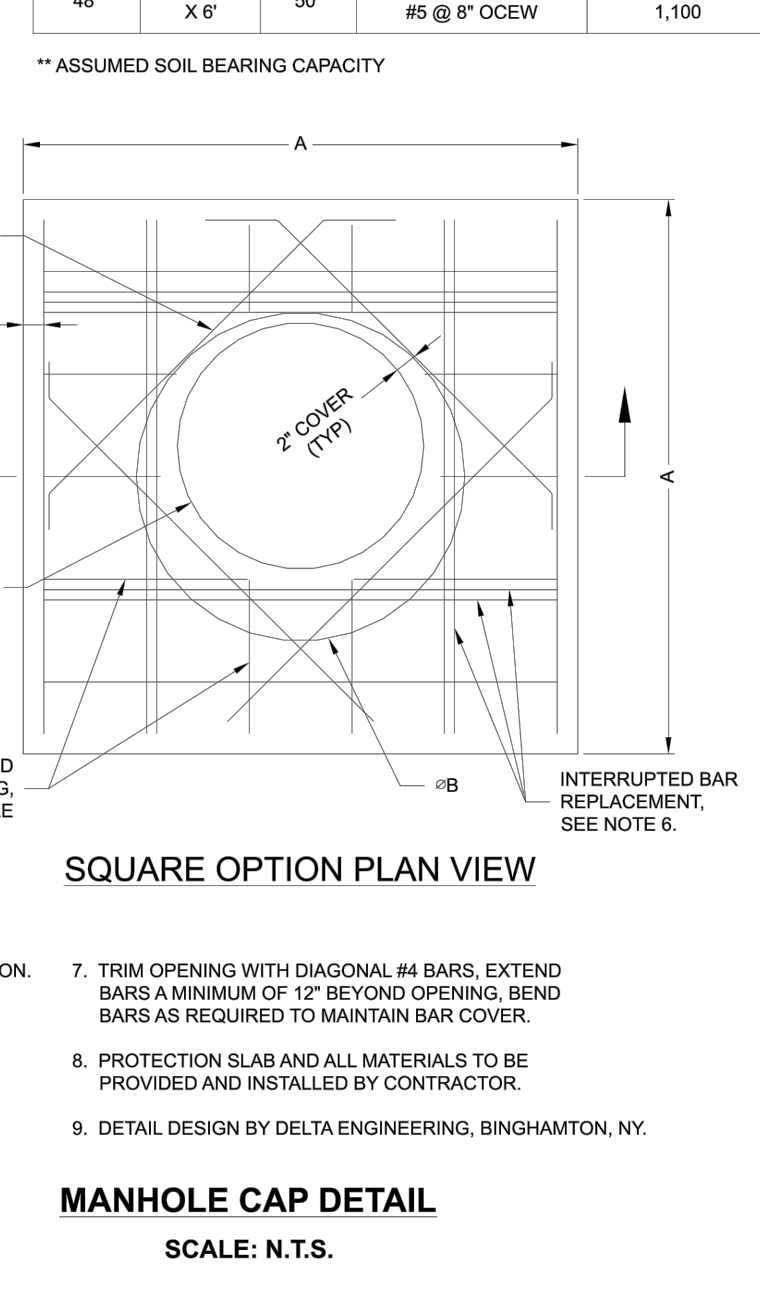
INSTALLATION  
 SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.



REINFORCING TABLE				
Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	4"	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	4'-4"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	5"	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	5'-5"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	6"	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

\*\* ASSUMED SOIL BEARING CAPACITY



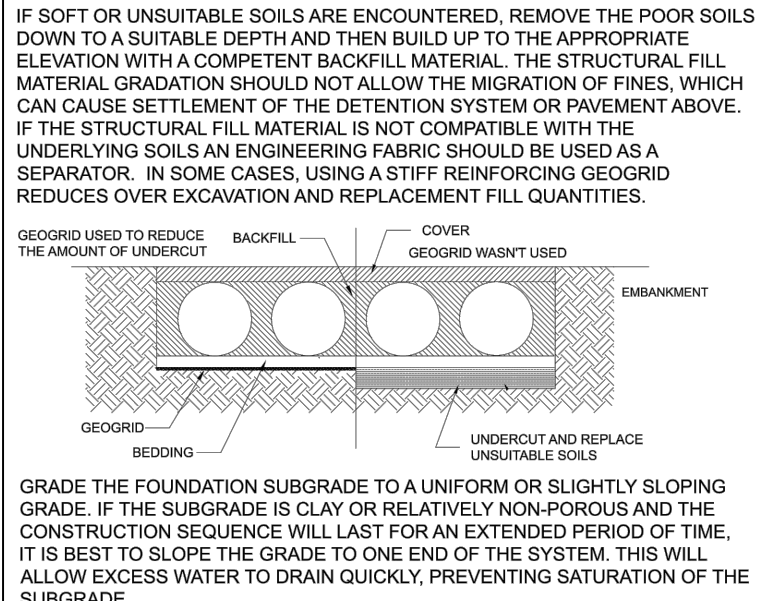
**MANHOLE CAP DETAIL**  
SCALE: N.T.S.

### CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

### FOUNDATION

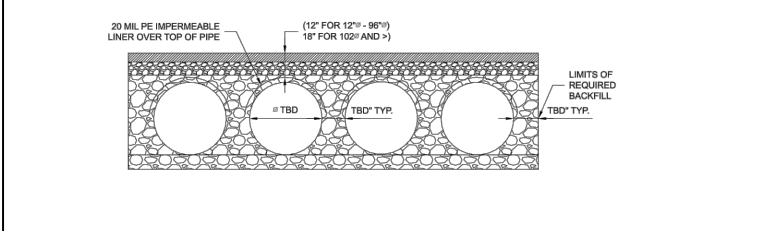
CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.



### GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

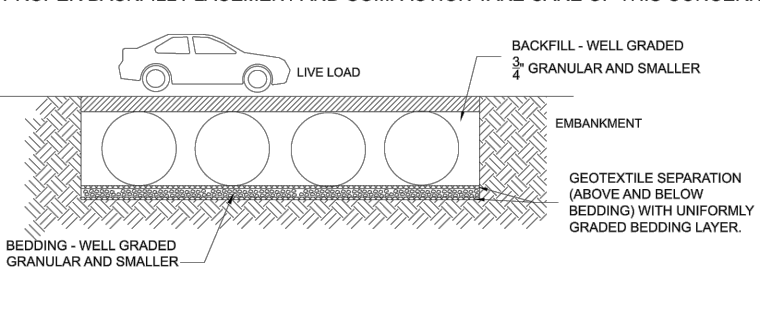
THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF AN ADDITIONAL PROTECTIVE MEASURE IS REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.



### IN-SITU TRENCH WALL

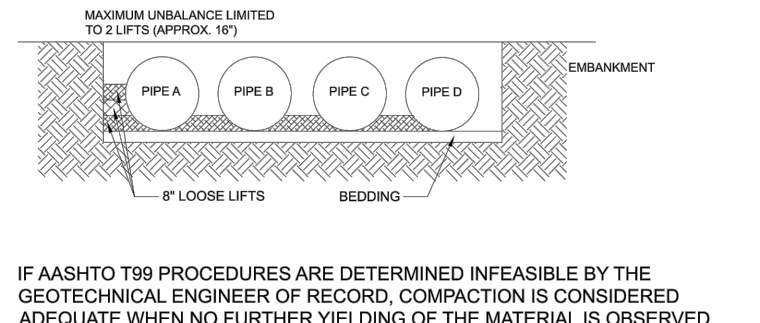
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT, PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



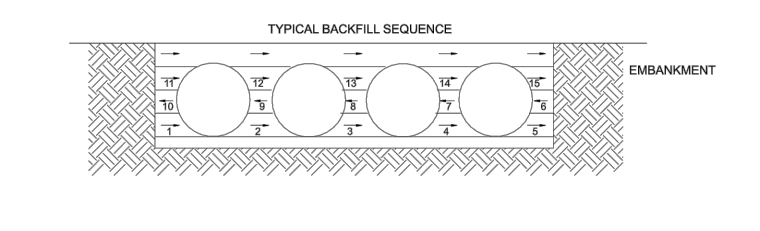
### BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.



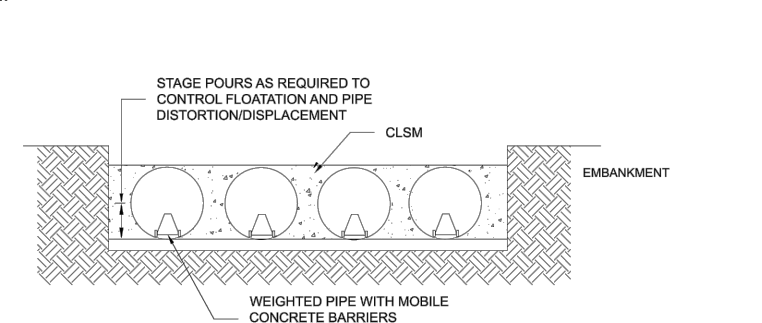
### CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.



### ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION, POTENTIALLY CAUSING FLOATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.

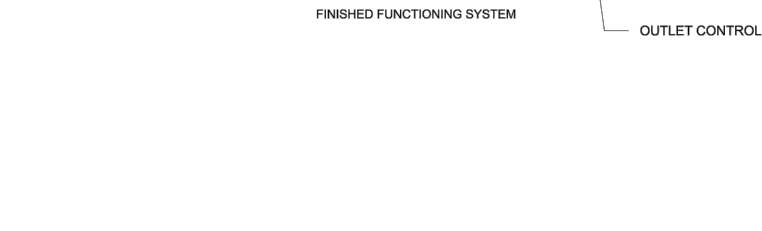


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### CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

### INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS ARE PLACED, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM.

### MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

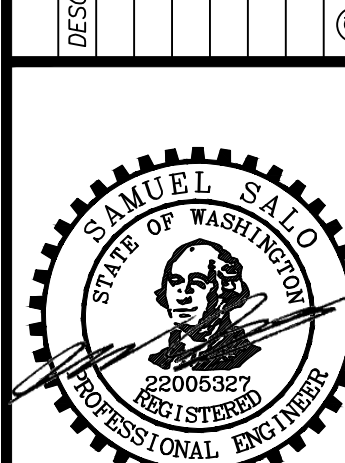
ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVALUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS FOLLOWED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVER SHOULD BE SECURELY SEALED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/ICEING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

REVISIONS	DESCRIPTION	BY	DATE



1/10/2023

**APL PROPERTIES**  
 AMERICAN PRIDE LENDING, LLC  
 CONSTRUCTION DETAILS

**Encompass**  
 ENGINEERING & SURVEYING  
 Western Washington Division  
 165 NE Juniper Street, Suite 201, Issaquah, WA 98027  
 Eastern Washington Division  
 407 S. Water Street, East Wenatchee, WA 98822  
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JOB NO.	21715
DATE	1/10/2023
SCALE	N.T.S.
DESIGNED	SRS
DRAWN	PMS
CHECKED	CJA
APPROVED	CJA
SHEET	5 of 5

