

PROJECT INFORMATION

APPLICANT
PT LAND INVESTMENTS LLC
DEAN KLOEWER
600 LASALLE AVE
PANAMA, IA 51562
PHONE: (712) 489-2020

PROPERTY OWNER
PT LAND INVESTMENTS
DEAN KLOEWER
600 LASALLE AVE
PANAMA, IA 51562
PHONE: (712) 489-2020

ENGINEER
DGR ENGINEERING
CONTACT: KEVIN PUHL, P.E.
1605 N. ANKENY BLVD. SUITE 100
ANKENY, IA 50023
PHONE: (515) 963-3488
FAX: (515) 964-4707

PROPERTY ADDRESS
725 SE 54TH ST. ANKENY, IA 50021
& PARCEL DIRECTLY WEST OF 725 SE 54TH ST. ANKENY, IA 50021

DATE OF PREPARATION
JUNE 18, 2019

UTILITY SERVICES

- WATER - CITY OF ANKENY,
SHAWN BUCKNER, 515-963-3524, sbuckner@ankenyiowa.gov
- WASTEWATER - CITY OF ANKENY,
ROGER MCFARLAND, 515-965-6483, mcfarland@ankenyiowa.gov
- ELECTRIC & GAS - MIDAMERICAN ENERGY
KELLI FREW, 515-252-6744, KDFREW@MIDAMERICAN.COM
- COMMUNICATIONS - CENTURYLINK
RAY MONTOYA, 515-423-8958, RAYMOND.MONTOYA@CENTURYLINK.COM
AUSTIN FREESEMAN, 515-263-7390, AUSTIN.FREESEMAN@CENTURYLINK.COM
- COMMUNICATIONS - AUREON NETWORK SERVICES
JEFF KLOCKO, 515-8730-0445, JEFF.KLOCKO@AUREON.COM

PROPOSED BUILDING USES

- MAIN BUILDING (174'X60' = 10440 SF) - WAREHOUSING AND STORAGE
- MAINTENANCE BUILDING (80'X30' = 2400 SF) - FLEET MAINTENANCE (CHANGING TIRES, CHANGING LIGHT BULBS, AND SMALL REPAIRS. ANY LARGE REPAIRS & EQUIPMENT SERVICING WILL TAKE PLACE AT MAIN SHOP IN PANAMA, IA)

PARKING

- 25 EMPLOYEES ON LARGEST SHIFT
- REQUIRED = 13
1 SPACE FOR EVERY 2 EMPLOYEES ON THE MAXIMUM SHIFT BUT NOT LESS THAN 1 SPACE PER 5,000 SQ. FT. OF AREA DEVOTED TO STORAGE
- PROVIDED = 25

PROPERTY INFORMATION

EXISTING PARCELS

- 725 SE 54TH ST. ANKENY, IA 50021
- PARCEL DIRECTLY WEST OF 725 SE 54TH ST. ANKENY, IA 50021

EXISTING LEGAL DESCRIPTION

- LOTS 2 & 3 FRIENDLY HILLS
- EX W 50F - & -EX N 40F RD EASM- NE 1/4 LYING W OF FRIENDLY HILLS SEC 1-79-24 (FROM POLK COUNTY ASSESSOR)

PROPOSED LEGAL DESCRIPTION
LOT 1 PANAMA TRANSFER ADDITION

ZONING
M-1 LIGHT INDUSTRIAL DISTRICT

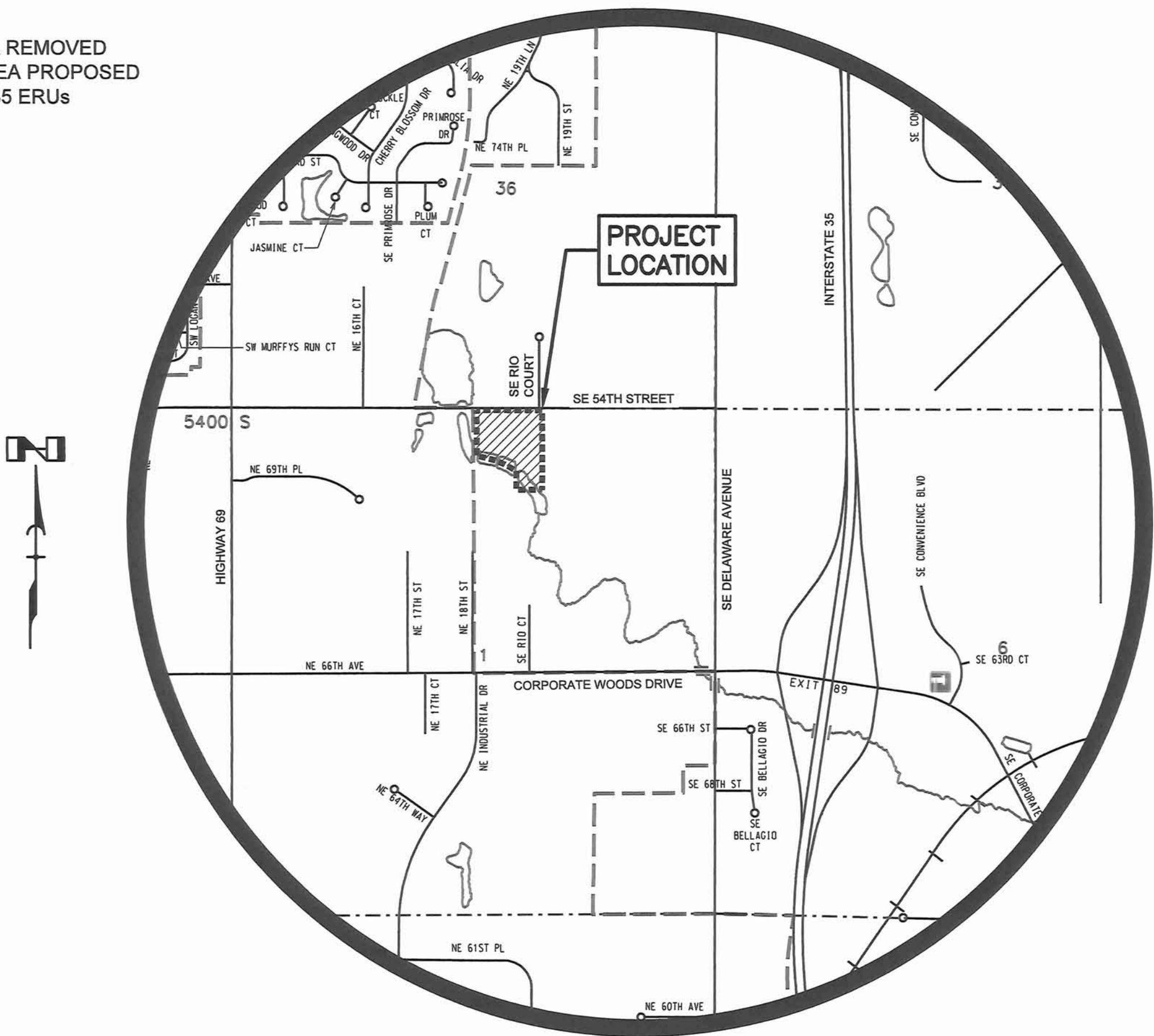
MINIMUM SETBACKS

- 50' FRONT
- 50' SIDE THAT ABUTS RESIDENTIAL DISTRICT (WEST & EAST)
- 40' REAR

ERU CALCULATIONS

- 7,849 SF - IMPERVIOUS AREA REMOVED
- 138,754 SF - IMPERVIOUS AREA PROPOSED
- 138,754 / 4000 = 34.7 ERUs = 35 ERUs

PANAMA TRANSFER
SITE IMPROVEMENTS
ANKENY, IOWA
2019



VICINITY MAP
NOT TO SCALE



STATE MAP

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
A.01	TITLE SHEET
D.01	REMOVAL PLAN
D.02	SITE PLAN - OVERALL
D.03	CONSTRUCTION DETAILS
D.04 - D.11	GRADING & UTILITY PLANS
D.12	SANITARY SEWER - PLAN & PROFILE
D.13	PAVING PLAN
D.14	EROSION CONTROL PLAN
D.15	LANDSCAPING PLAN
LS1-LS2	LIFT STATION DETAILS

NOTE:
ALL UTILITIES ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION WITH OWNER OF UTILITIES.

BENCHMARKS:

- CENTER OF SANITARY MANHOLE LOCATED IN SOUTH RADIUS OF DRIVEWAY TO 207 SE RIO COURT. ELEV.=947.95
- CENTER OF SANITARY MANHOLE LOCATED 15' EAST OF EAST CURB LINE OF SE RIO COURT & 610' NORTH OF NORTH CURB LINE OF SE 54TH STREET. ELEV.=946.85

CONTROL POINTS:

- CP MAG IN SE 54TH STREET, FOUND 203' WEST OF WEST CURB OF SE RIO COURT & 2.6' NORTH OF SOUTH EDGE OF PAVING OF SE 54TH STREET. NORTHING = 615153.093, EASTING = 1616075.087
- FOUND CUT X AT CENTERLINE OF SE 54TH STREET, FOUND 222' EAST OF EAST CURB LINE OF SE RIO COURT. NORTHING = 615157.798, EASTING = 1616531.393

I hereby certify that this engineering document was prepared by me or under my direct personal supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa

By KEVIN M. PUHL, P.E. (date)

License No. 24131

My license renewal date is December 31, 2020

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PANAMA TRANSFER
SITE IMPROVEMENTS
ANKENY, IOWA

TITLE SHEET
PRELIMINARY
FOR REVIEW ONLY 06/18/2019

Project Manager: K. PUHL
Designer: K. PUHL
Project Number: 568014
Phone: (712) 266-1554

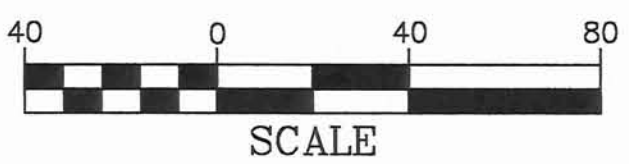
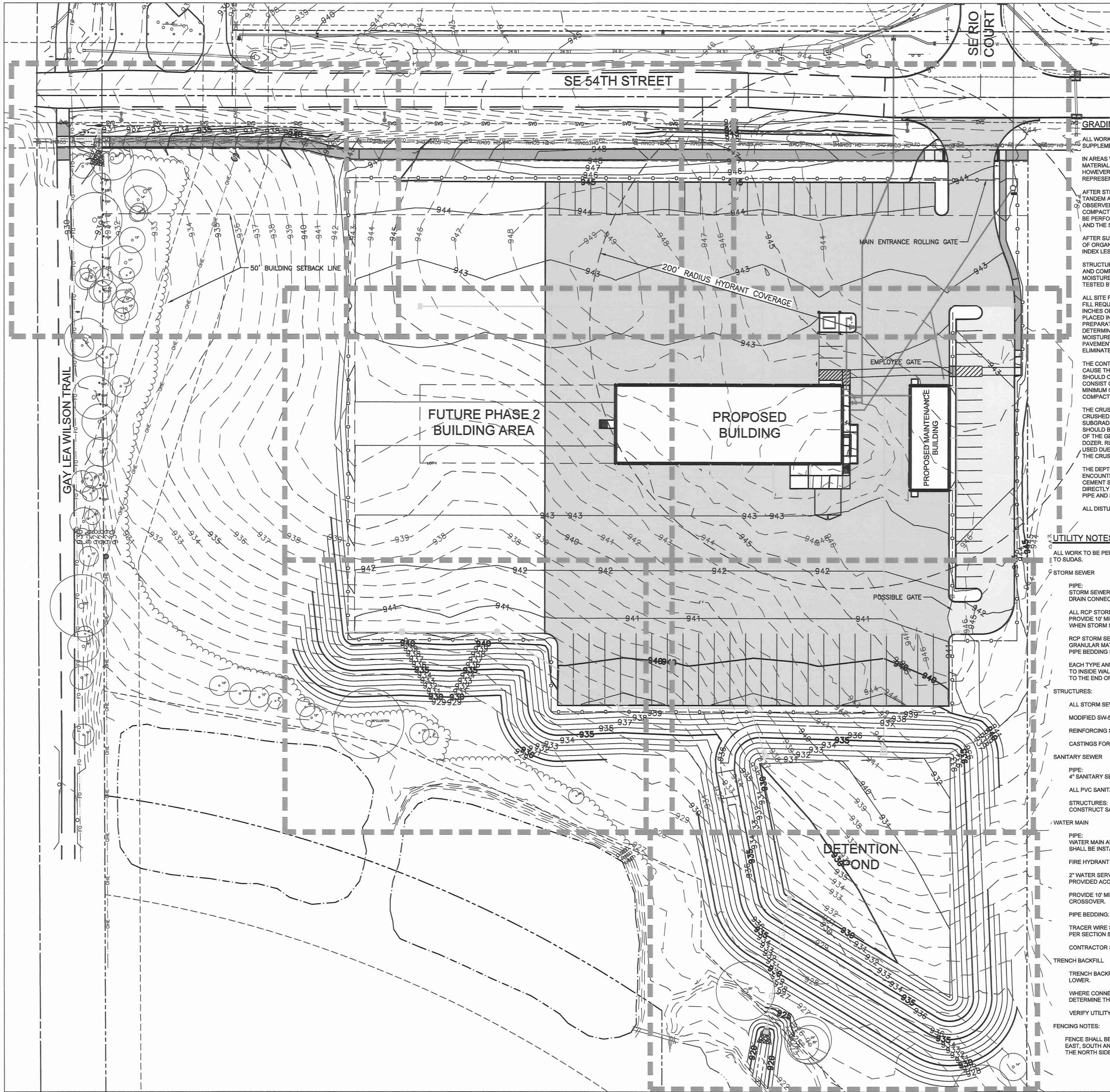
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GRADING NOTES:

ALL WORK TO BE PERFORMED ACCORDING TO THE 2019 SUDAS STANDARD SPECIFICATIONS (AVAILABLE AT WWW.IOWASUDAS.ORG) AND THE 2017 CITY OF ANKENY SUPPLEMENT SPECIFICATIONS TO SUDAS.

IN AREAS WHERE THE EXISTING PAVEMENT WILL BE REMOVED AND REPLACED, THE CONTRACTOR SHALL STRIP AND WASTE THE ASPHALT, SOFT MATERIAL, ORGANIC MATERIAL, UNSUITABLE SOILS, AND MATERIAL CONTAINING FROST IN THE CONSTRUCTION AREA. THE SITE SOILS ARE SUITABLE FOR USE AS STRUCTURAL FILL, HOWEVER, THE MATERIAL IS VERY MOIST IN SOME AREAS AND WILL NEED TO BE MOISTURE CONDITIONED, DRIED, IN ORDER TO OBTAIN PROPER COMPACTION. A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD DETERMINE THE DEPTH OF REMOVAL AT THE TIME OF CONSTRUCTION.

AFTER STRIPPING AND EXCAVATING THE SITE TO THE PROPOSED SUBGRADE LEVEL AS REQUIRED, THE PAVEMENT AREAS SHOULD BE PROOF ROLLED WITH A LOADED TANDEM AXLE DUMP TRUCK OR SIMILAR PIECE OF HEAVY RUBBER Tired VEHICLE (TYPICALLY WITH AN AXIAL LOAD GREATER THAN 9 TONS), MATERIALS THAT ARE OBSERVED TO RUT OR DEFLECT EXCESSIVELY (TYPICALLY GREATER THAN 1 INCH) UNDER THE MOVING LOAD SHOULD BE UNDERCUT AND REPLACED WITH PROPERLY COMPACTED FILL. THE PROOFROLLING AND UNDERCUTTING ACTIVITIES SHOULD BE WITNESSED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER AND SHOULD BE PERFORMED DURING A PERIOD OF DRY WEATHER. IF EXCESSIVE MOVEMENT IS OBSERVED DURING THE PROOFROLLING, THE PROOFROLLING SHOULD BE STOPPED, AND THE SUBGRADE EVALUATED BY THE GEOTECHNICAL ENGINEER.

AFTER SUBGRADE PREPARATION AND OBSERVATION HAVE BEEN COMPLETED, FILL PLACEMENT, IF ANY, MAY BEGIN. FILL MATERIALS SHOULD BE A SILT MATERIAL FREE OF ORGANIC OR OTHER DELETERIOUS MATERIALS, HAVE A MAXIMUM PARTICLE SIZE LESS THAN 3 INCHES, AND HAVE A LIQUID LIMIT LESS THAN 45 AND PLASTICITY INDEX LESS THAN 22. CLOSE MOISTURE CONTENT CONTROL WILL BE REQUIRED TO ACHIEVE THE RECOMMENDED DEGREE OF COMPACTION.

STRUCTURAL FILL SHOULD BE PLACED IN MAXIMUM LOOSE LIFTS OF 4 INCHES FOR HAND COMPACTION EQUIPMENT AND 8 INCHES FOR RIDING COMPACTION EQUIPMENT AND COMPACTED TO MEET SUDAS AND CITY OF SIOUX CITY SPECIAL PROVISIONS. SILT MATERIAL SHOULD BE COMPACTED TO WITHIN $\pm 2\%$ OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED IN GENERAL ACCORDANCE WITH ASTM D 698 PROCEDURES. EVERY OTHER LIFT OF COMPACTED ENGINEERED FILL SHOULD BE TESTED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF SUBSEQUENT LIFTS.

ALL SITE PAVING AND SIDEWALKS SHALL BE PLACED ON A MINIMUM OF 12" OF NEW STRUCTURAL FILL MATERIAL OR EXISTING FILL MATERIAL MEETING THE STRUCTURAL FILL REQUIREMENTS LISTED ABOVE. THE 12 INCHES OF STRUCTURAL FILL MAY BE CREATED BY SCARIFYING, MOISTURE CONDITIONING AND COMPACTING THE TOP 12 INCHES OF EXISTING MATERIAL. HOWEVER, IF THE CONTRACTOR DOES NOT HAVE THE CAPABILITY TO COMPACT 12 INCHES OF MATERIAL, THE MATERIAL SHOULD BE PLACED IN 6 INCH LIFTS. THE STRUCTURAL FILL SHALL EXTEND 2 FEET BEYOND THE EDGE OF THE SIDEWALKS AND PAVING. IF THERE IS A DELAY BETWEEN SUBGRADE PREPARATION AND PAVING, MOISTURE CONTENT OF THE PAVEMENT SUBGRADE SHALL BE CHECKED THE DAY OF OR DAY BEFORE PAVEMENT PLACEMENT TO DETERMINE IF THE MOISTURE CONTENT OF THE PREPARED SUBGRADE MEETS THE REQUIREMENTS FOR STRUCTURAL FILL MATERIAL THAT DOES NOT MEET THE MOISTURE REQUIREMENTS WILL NEED TO BE SCARIFIED, MOISTURE CONDITIONED AND RECOMPACTED TO MEET THE REQUIREMENTS FOR STRUCTURAL FILL PRIOR TO PAVEMENT PLACEMENT. THE EXPOSED EDGES OF THE CONCRETE OR CURB AND GUTTER SHALL BE BACKFILLED WITHIN 7 DAYS OF PAVEMENT PLACEMENT TO ELIMINATE AREAS OF WATER PONDING ALONG THE PAVEMENT AND REDUCE THE POTENTIAL FOR FUTURE FROST HEAVE ISSUES.

THE CONTRACTOR SHOULD BE AWARE THAT VERY MOIST SOIL CONDITIONS EXIST IN SOME AREAS, AND IT IS ANTICIPATED THAT NORMAL CONSTRUCTION ACTIVITY MAY CAUSE THE SUBGRADE SOILS TO BECOME UNSTABLE AND PUMP. BASED ON THIS, IT IS RECOMMENDED THAT LOW BEARING TRACK EQUIPMENT BE USED. IF PUMPING SHOULD OCCUR, THE SOILS MAY BECOME UNSTABLE, AND THE UNSTABLE AREAS WILL NEED TO BE REMOVED OR STABILIZED. METHODS OF STABILIZATION MAY CONSIST OF TREATING THE TOP 18 INCHES OF THE SUBGRADE SOILS BY MIXING FLY ASH OR CEMENT INTO THE SUBGRADE MATERIAL WITH A ROTARY PULVIZER IN A MINIMUM OF TWO 9-INCH LIFTS USING UP TO 20 PERCENT BY DRY WEIGHT OF FLY ASH OR 5 PERCENT OF CEMENT OR PLACING A GEOGRID ON THE SUBGRADE AND COMPACTING A MINIMUM OF 12 INCHES OF CRUSHED STONE ON TOP OF THE GEOGRID.

THE CRUSHED STONE SHOULD MEET IDOT GRADATION 14 AND SHOULD NOT BE DELIVERED TO THE SITE PRIOR TO APPROVAL BY THE GEOTECHNICAL ENGINEER. IF CRUSHED STONE IS APPROVED FOR USE, THE STONE SHOULD NOT BE PLACED MORE THAN ONE DAY BEFORE PAVING AND AFTER THE MOISTURE CONTENT OF THE SUBGRADE HAS BEEN CHECKED TO MINIMIZE THE POTENTIAL FOR RAINFALL MOISTURE TO BE TRAPPED UNDER THE LAYER OF CRUSHED STONE. THE CRUSHED STONE SHOULD BE COMPACTED IN 6-INCH TO 8-INCH LAYERS WITH A SHEEP FOOT ROLLER OR SMOOTH DRUM ROLLER UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER'S REPRESENTATIVE. THE CRUSHED STONE SHOULD BE PLACED BY PUSHING THE STONE ONTO THE GEOGRID WITH A LOW BEARING DOZER. RUBBER Tired EQUIPMENT SHOULD NOT BE USED UNTIL THE SUBGRADE IS STABILIZED. SHEEP FOOT ROLLERS WITH LONG NARROW TEETH SHOULD NOT BE USED DUE TO THE LONG AND NARROW TEETH CAUSING DISTURBANCE OF THE GRANULAR MATERIAL AND PUNCTURING OF THE GEOGRID. IN VERY SOFT CONDITIONS THE CRUSHED STONE SHOULD NOT BE PLACED WITH VIBRATORY COMPACTION. THE GEOGRID SHOULD BE TENSAR BX1100 OR MIRAFI BX1100 OR EQUIVALENT.

THE DEPTH OF STABILIZATION MATERIAL NEEDED, INCLUDING CRUSHED STONE AND THE PERCENTAGE OF CEMENT, WILL DEPEND ON ACTUAL SUBGRADE CONDITIONS ENCOUNTERED IN THE FIELD AT THE TIME OF CONSTRUCTION AND THE AMOUNT OF DISTURBANCE THAT OCCURS DURING THE EXCAVATION PROCESS. C-STONE AND CEMENT SHOULD NOT BE USED IN COLD WEATHER OR WHERE WATER IS PRESENT. SUBDRAINS SHOULD BE PROVIDED IN AREAS WHERE THE PAVEMENT WILL BE DIRECTLY SUPPORTED BY GEOGRID AND ROCK IN ORDER TO MINIMIZE THE POTENTIAL FOR FROST HEAVE. SUBDRAINS SHOULD CONSIST OF A 4" OR 6" PERFORATED PIPE AND SHOULD BE CONNECTED TO A SUITABLE MEANS OF DISPOSAL.

ALL DISTURBED AREAS WHICH ARE TO BE SEEDED OR SODDED SHALL RECEIVE A MINIMUM OF 6" OF CLEAN TOPSOIL AS PART OF THE FINAL GRADING.

UTILITY NOTES

ALL WORK TO BE PERFORMED ACCORDING TO THE 2019 SUDAS STANDARD SPECIFICATIONS (AVAILABLE AT WWW.IOWASUDAS.ORG) AND THE 2017 CITY OF ANKENY SUPPLEMENT TO SUDAS.

STORM SEWER

PIPE:
STORM SEWER PIPE SHALL BE CLASS III RCP OR POLYPROPYLENE (HPPP) PIPE AT THE CONTRACTOR'S OPTION, EXCEPT FOR PIPES P1, P2, P3, P101, P201, AND P301. ROOF DRAIN CONNECTION PIPES SHALL BE SCHEDULE 40 PVC.

ALL RCP STORM SEWER SHALL BE INSTALLED WITH JOINTS COMPLYING WITH THE 2017 CITY OF ANKENY SUDAS SUPPLEMENT. HPPP PIPE SHALL HAVE WATER TIGHT JOINTS. PROVIDE 10' MIN HORIZONTAL SEPARATION OF PARALLEL STORM SEWER AND WATER MAIN. PROVIDE 18" MIN CLEARANCE AT STORM SEWER AND WATER MAIN CROSSOVER. WHEN STORM SEWER CROSSES OVER OR LESS THAN 18" BELOW A WATER MAIN, CONSTRUCT STORM SEWER OF RCP WITH RUBBER PROFILE GASKET JOINTS.

RCP STORM SEWER DOES NOT REQUIRE PIPE BEDDING UNLESS SOFT TRENCH SUBGRADE SOILS ARE ENCOUNTERED IN WHICH CASE THE PIPE SHALL BE BEDDED WITH GRANULAR MATERIAL WITH A CLASS R-1 BEDDING PER FIGURE 3010.102. HPPP AND PVC PIPE SHALL BE BEDDED WITH A F-2 PIPE BEDDING PER FIGURE 3010.103. ADDITIONAL PIPE BEDDING SHALL BE PROVIDED AS NECESSARY TO PROVIDE ADEQUATE PIPE SUPPORT. CRUSHED CONCRETE SHALL NOT BE USED FOR CLASS I PIPE BEDDING.

EACH TYPE AND SIZE OF PIPE INSTALLED IN A TRENCH WILL BE MEASURED IN LINEAR FEET ALONG THE CENTERLINE OF THE PIPE FROM INSIDE WALL OF INTAKE OR MANHOLE TO INSIDE WALL OF INTAKE OR MANHOLE. WHERE THE END OF THE PIPE DISCHARGES TO A DITCH OR WATERWAY, MEASUREMENT LENGTH SHOWN ON UTILITY PLANS WILL BE TO THE END OF THE PIPE, INCLUDING THE APRON. LENGTHS OF ELBOWS AND TEES WILL BE INCLUDED IN THE LENGTH OF PIPE MEASURED.

STRUCTURES:

ALL STORM SEWER INTAKES AND MANHOLES SHALL BE CONSTRUCTED ACCORDING TO THE CORRESPONDING SUDAS STANDARD DETAIL.

MODIFIED SW-502 INTAKE SHALL BE A STANDARD SW-502 INTAKE STRUCTURE, WITH A SW-604 TYPE 6 GRATE.

REINFORCING STEEL IN ALL CAST IN PLACE STRUCTURES SHALL BE EPOXY COATED.

CASTINGS FOR THE SW-501 AND SW-505 INTAKES SHALL BE A TYPE-R VANE STYLE GRATE PER FIGURE 6010.603.

SANITARY SEWER

PIPE:
4" SANITARY SEWER SERVICE PIPE SHALL BE TRUSS-TYPE PVC COMPLYING WITH SUDAS SECTION 4010 2.01 E.

ALL PVC SANITARY SEWER PIPE BEDDING SHALL BE CLASS F-3 PER FIGURE 3010.103. CRUSHED CONCRETE SHALL NOT BE USED FOR CLASS I PIPE BEDDING.

STRUCTURES:
CONSTRUCT SANITARY CLEANOUT ACCORDING TO THE CORRESPONDING SUDAS STANDARD DETAIL.

WATER MAIN

PIPE:
WATER MAIN AND WATER SERVICE LINES 8" OR LARGER SHALL BE AWWA C900 CLASS 200 DR14 PVC WITH GRAY IRON PIPE EQUIVALENT OUTSIDE DIAMETER. WATER MAIN SHALL BE INSTALLED WITH A 6" DEPTH OF BURY TO TOP OF PIPE.

FIRE HYDRANT ASSEMBLIES AND APPURTENANCES SHALL COMPLY WITH THE CITY OF ANKENY SUDAS SUPPLEMENT.

2" WATER SERVICE LINE SHALL BE POLYETHYLENE PIPE COMPLYING WITH THE CITY OF ANKENY SUPPLEMENT. SERVICE SADDLES, CURB STOPS AND STOP BOXES SHALL BE PROVIDED ACCORDING TO SECTION 5010 2.07 C OF THE ANKENY SUPPLEMENT.

PROVIDE 10' MIN HORIZONTAL SEPARATION OF PARALLEL STORM AND SANITARY SEWER AND WATER MAIN. PROVIDE 18" MIN CLEARANCE AT SEWER PIPE AND WATER MAIN CROSSOVER.

PIPE BEDDING: PIPE SHALL BE BEDDED WITH MANUFACTURED SAND MATERIAL WITH BELL SHAPING PER FIGURE 3010.104. PROVIDE 6" MINIMUM COVER OVER PIPE.

TRACER WIRE SHALL BE SUPPLIED WITH ALL WATER LINE ACCORDING TO CITY REQUIREMENTS. ALL DIP WATER MAIN AND FIXTURES SHALL BE ENCASED IN POLYETHYLENE PER SECTION 6010 3.05.

CONTRACTOR SHALL CONTACT THE CITY WATER DEPARTMENT TO COORDINATE ALL WATER MAIN CONNECTIONS AND SHUTDOWNS.

TRENCH BACKFILL

TRENCH BACKFILL MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF STANDARD PROCTOR DENSITY WITH A MOISTURE CONTENT OF $\pm 2\%$ OF OPTIMUM OR LOWER.

WHERE CONNECTION ELEVATIONS TO EXISTING OR PROPOSED UTILITIES ARE NOTED AS VERIFY, THE CONTRACTOR SHALL EXPOSE THE UTILITY AND HAVE THE SURVEYOR DETERMINE THE ELEVATION OF THE UTILITY PRIOR TO BEGINNING WORK SUCH THAT ADJUSTMENT TO GRADES CAN BE MADE WHEN NEEDED.

VERIFY UTILITY LOCATIONS AND ELEVATIONS AT CONNECTIONS TO THE BUILDING WITH MECHANICAL PLANS.

FENCING NOTES:

FENCE SHALL BE 6' HIGH CHAIN LINK CONSTRUCTED ACCORDING TO SUDAS SECTION 9060. FENCE SHALL INCLUDE 3 STRANDS OF BARBED WIRE AT TOP OF THE FENCE ON THE EAST, SOUTH AND WEST SIDES OF THE SITE. THE BARBED WIRE SHALL ANGLE OUT AT A 45° ANGLE ON THE OUTSIDE OF THE FENCE. NO BARBED WIRE WILL BE INSTALLED ON THE NORTH SIDE OF THE SITE. THE FENCE CONTRACTOR SHALL SUBMIT PLANS FOR THE ROLLING GATE AND GATE OPERATOR FOR APPROVAL PRIOR TO INSTALLATION.

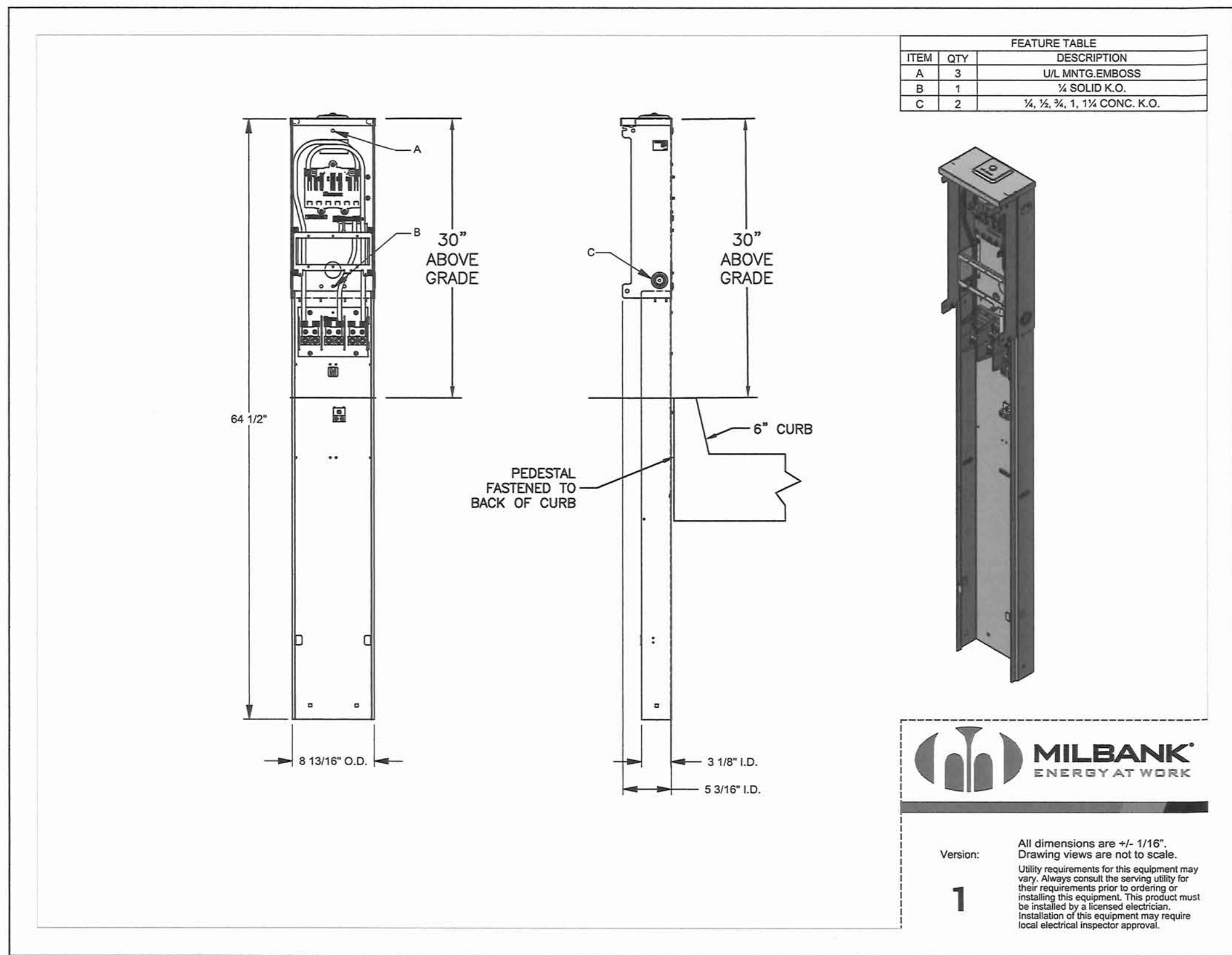
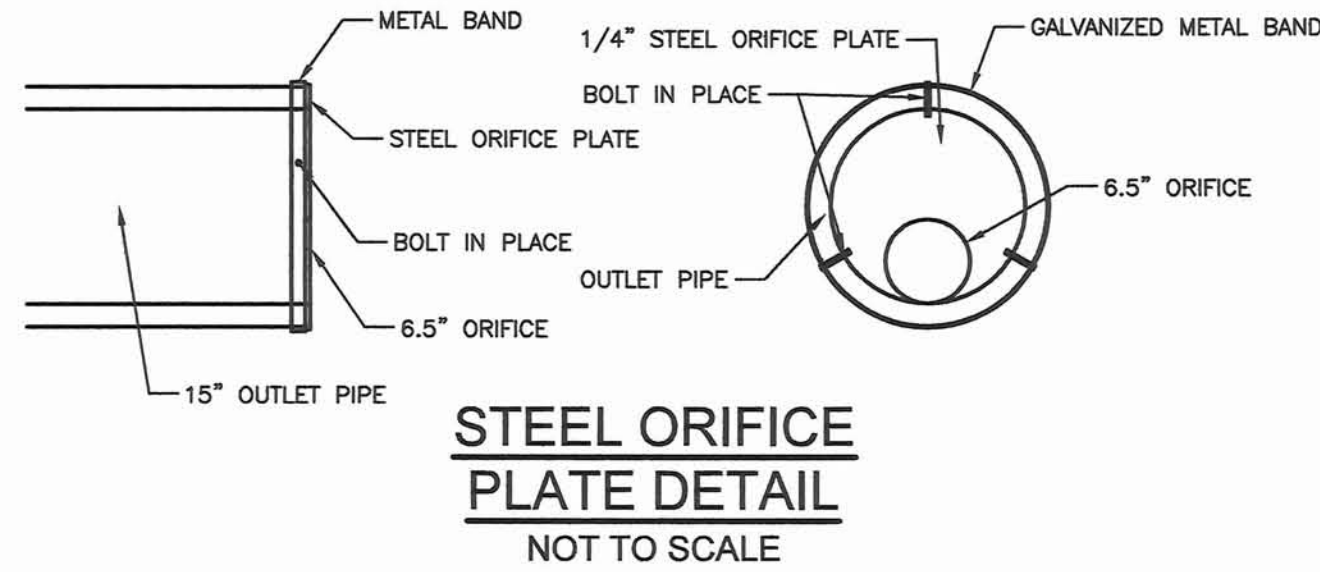
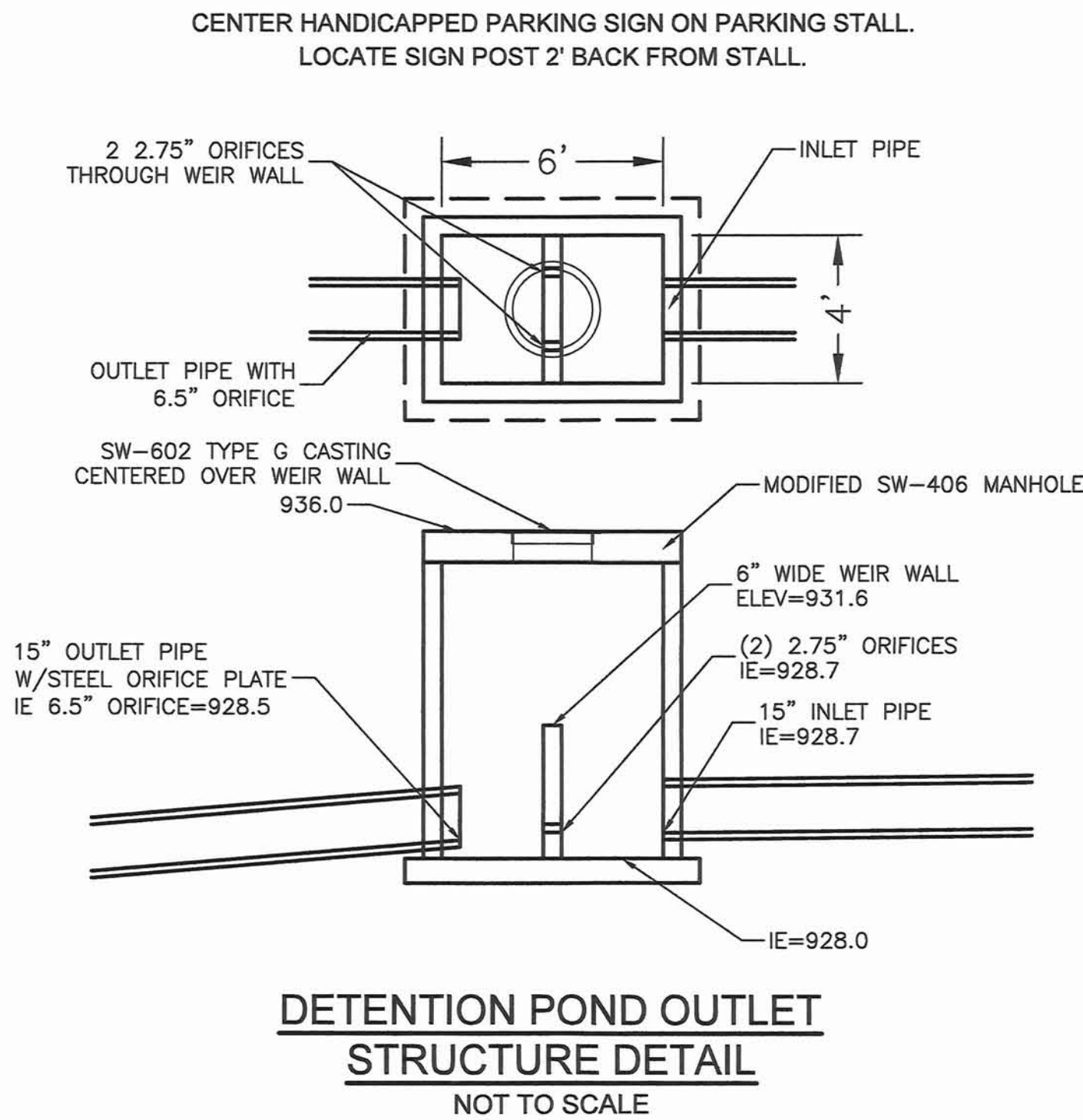
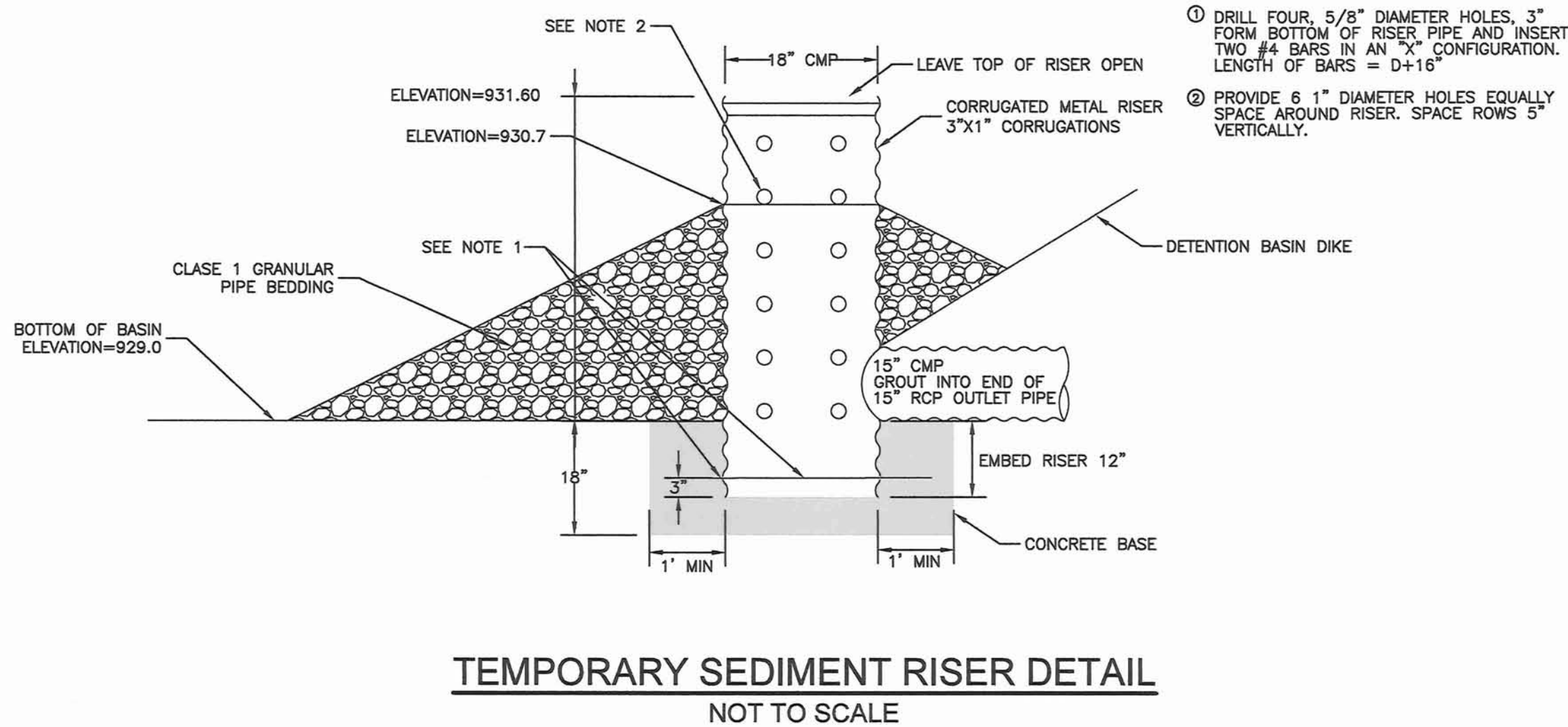
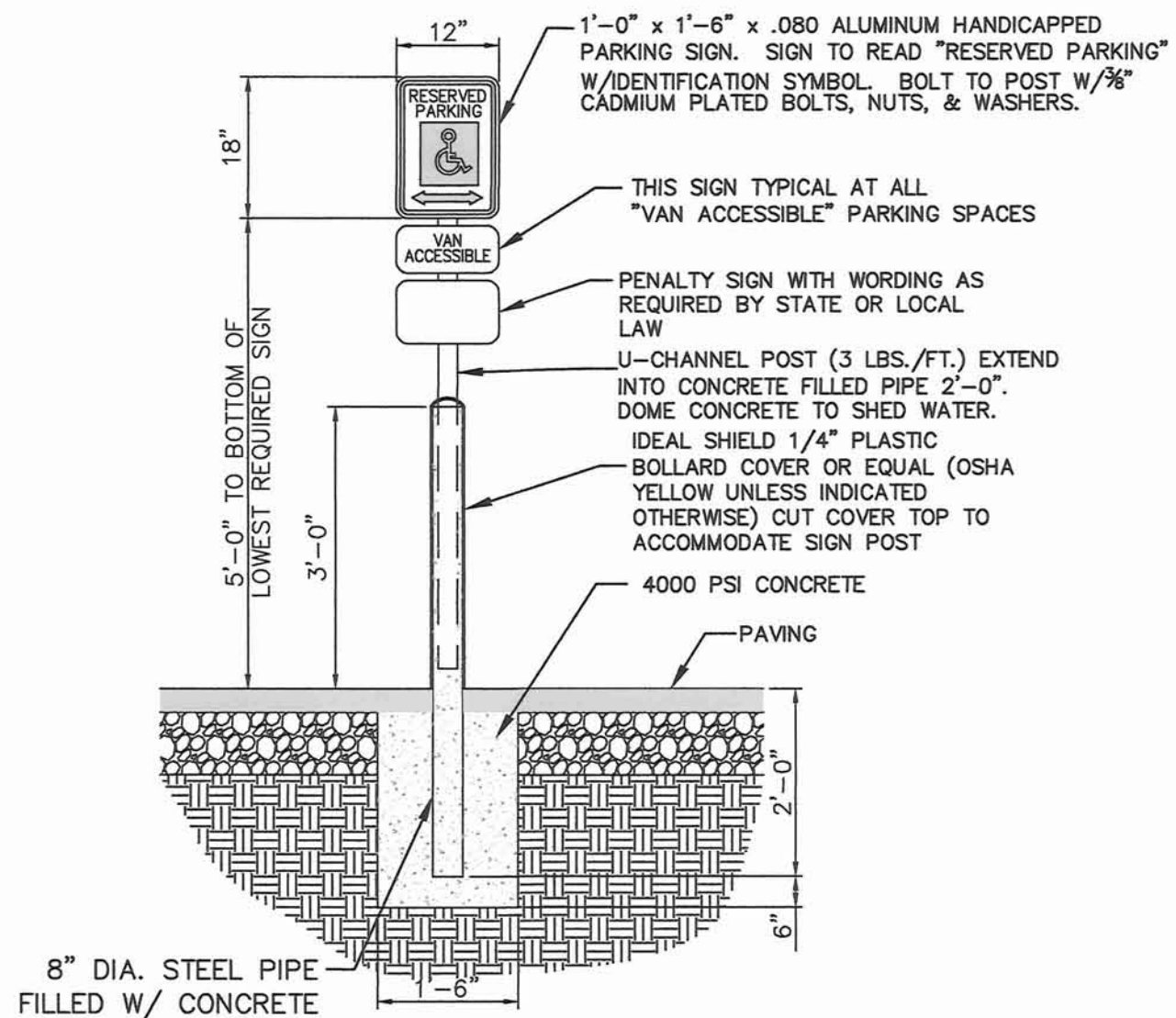
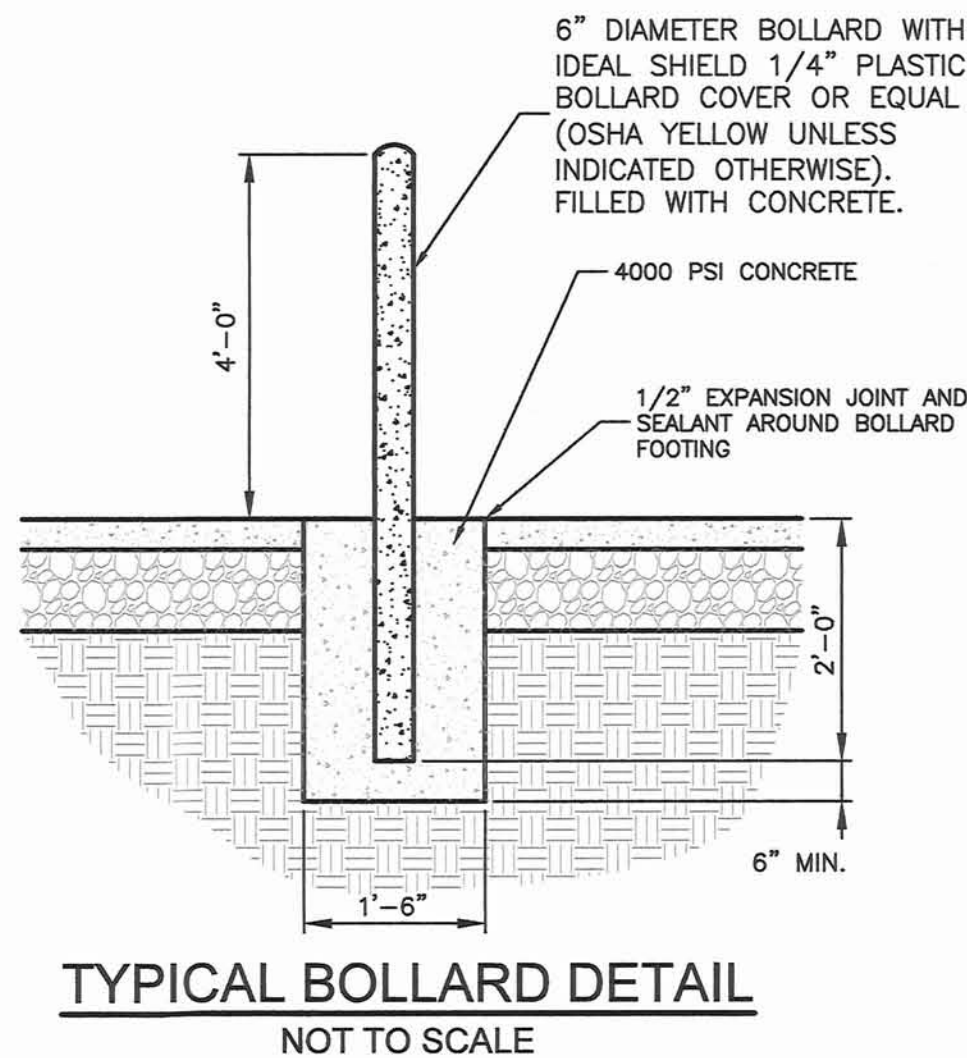
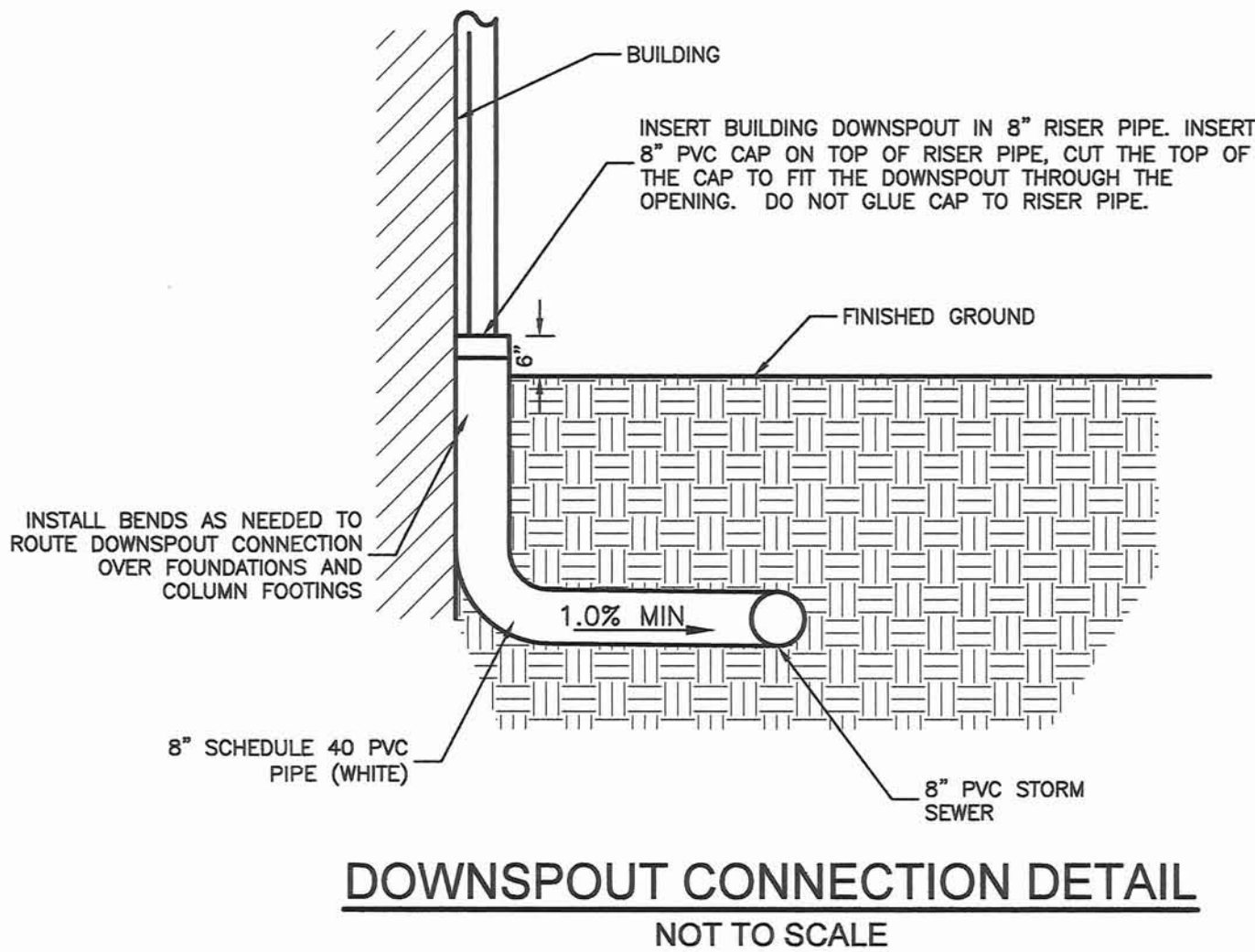
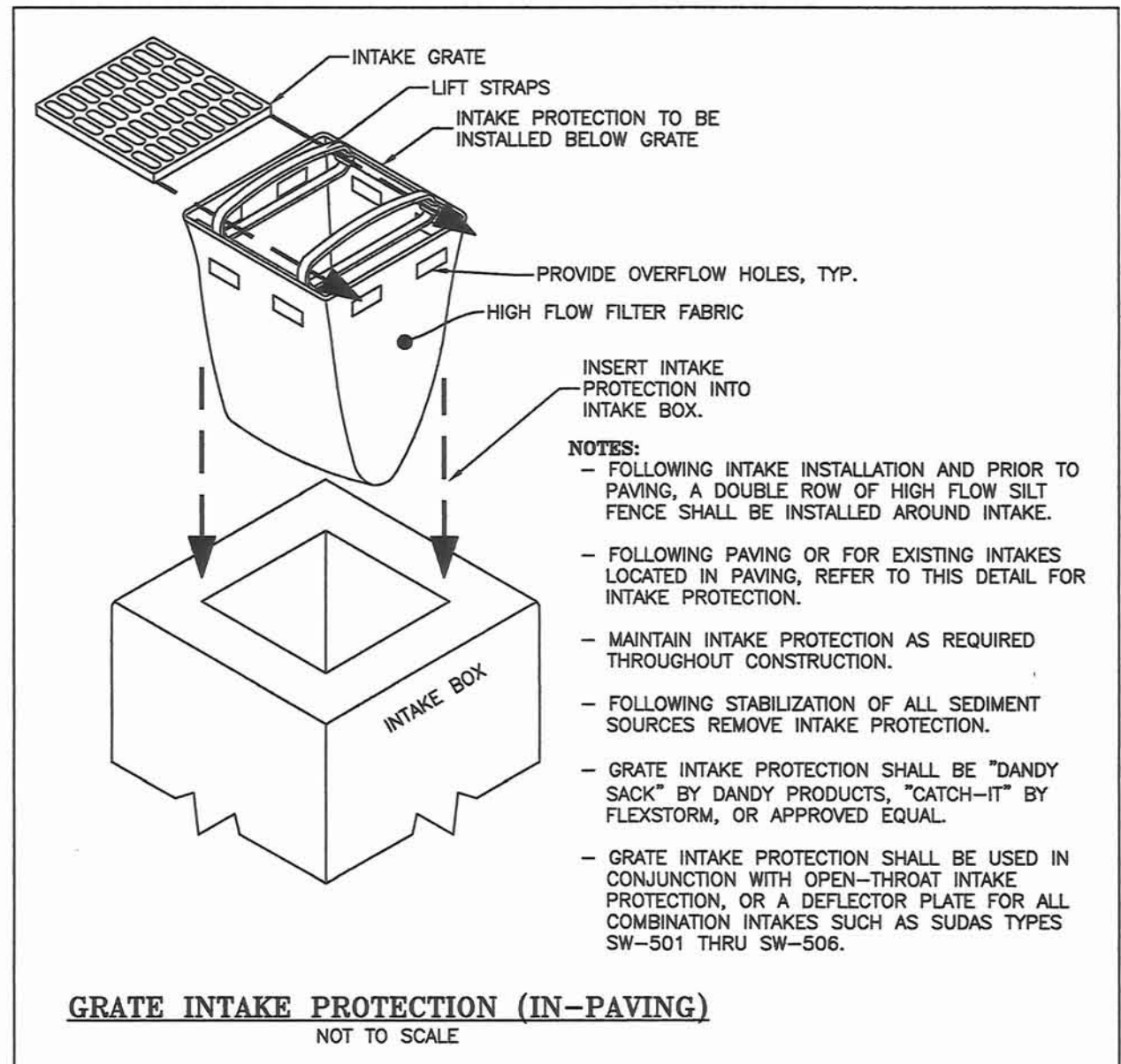
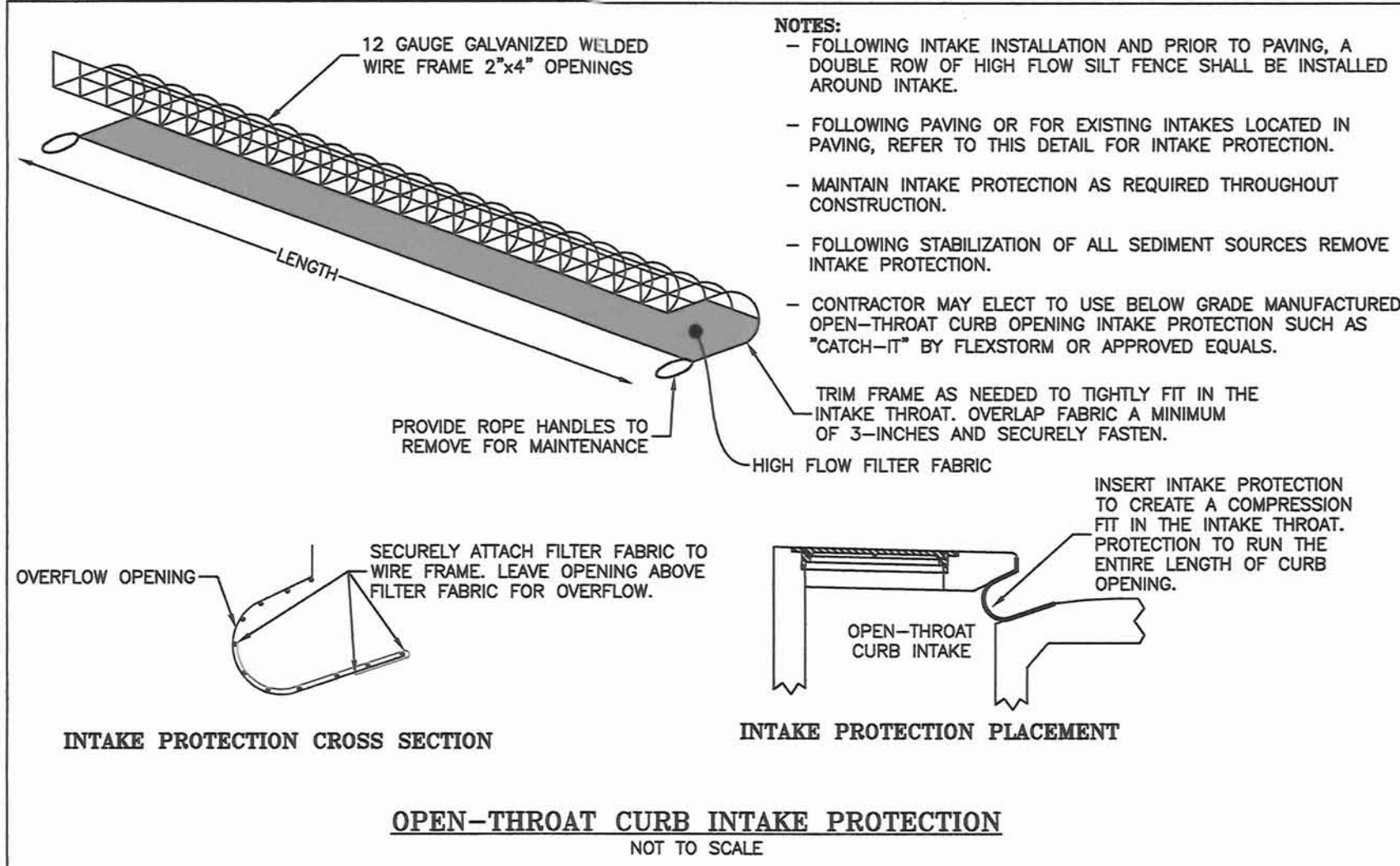
PANAMA TRANSFER
SITE IMPROVEMENTS
ANKENY, IOWA

SITE PLAN
OVERALL
PRELIMINARY
FOR REVIEW ONLY 05/08/2019

Project Manager: K. PUHL
Designer: K. PUHL
Project Number: 568014
Phone: (712) 266-1554

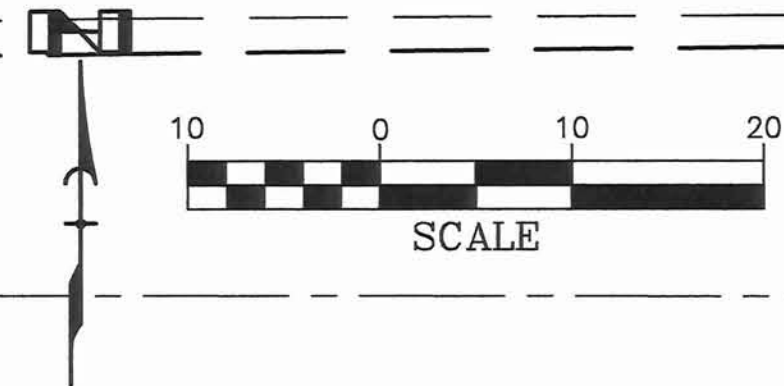


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ABBREVIATION LEGEND

BW = BOTTOM OF WALL ELEVATION
ER = END RADIUS ELEVATION
FG = FINISHED GROUND ELEVATION
GB = GRADE BREAK ELEVATION
GRATE = INTAKE GRATE ELEVATION
GT = GUTTER ELEVATION
HC = HANDICAP STALL CRITICAL ELEVATION
HP = HIGH POINT ELEVATION
LP = LOW POINT ELEVATION
MATCH EX. = MATCH EXISTING ELEVATION
MR = MID RADIUS ELEVATION
RIM = MANHOLE RIME ELEVATION
SW = SIDEWALK ELEVATION
TC-GT = TOP OF CURB & GUTTER ELEVATION
TC = TOP OF CURB ELEVATION
TW = TOP OF WALL ELEVATION

ALL PAVEMENT ELEVATIONS ARE GUTTER ELEVATIONS UNLESS OTHERWISE NOTED.

**PANAMA TRANSFER
SITE IMPROVEMENTS
ANKENY, IOWA**

GRADING & UTILITY PLAN
NORTH-CENTER

PRELIMINARY
NORTH-CENTER
FOR REVIEW ONLY 06/18/2019

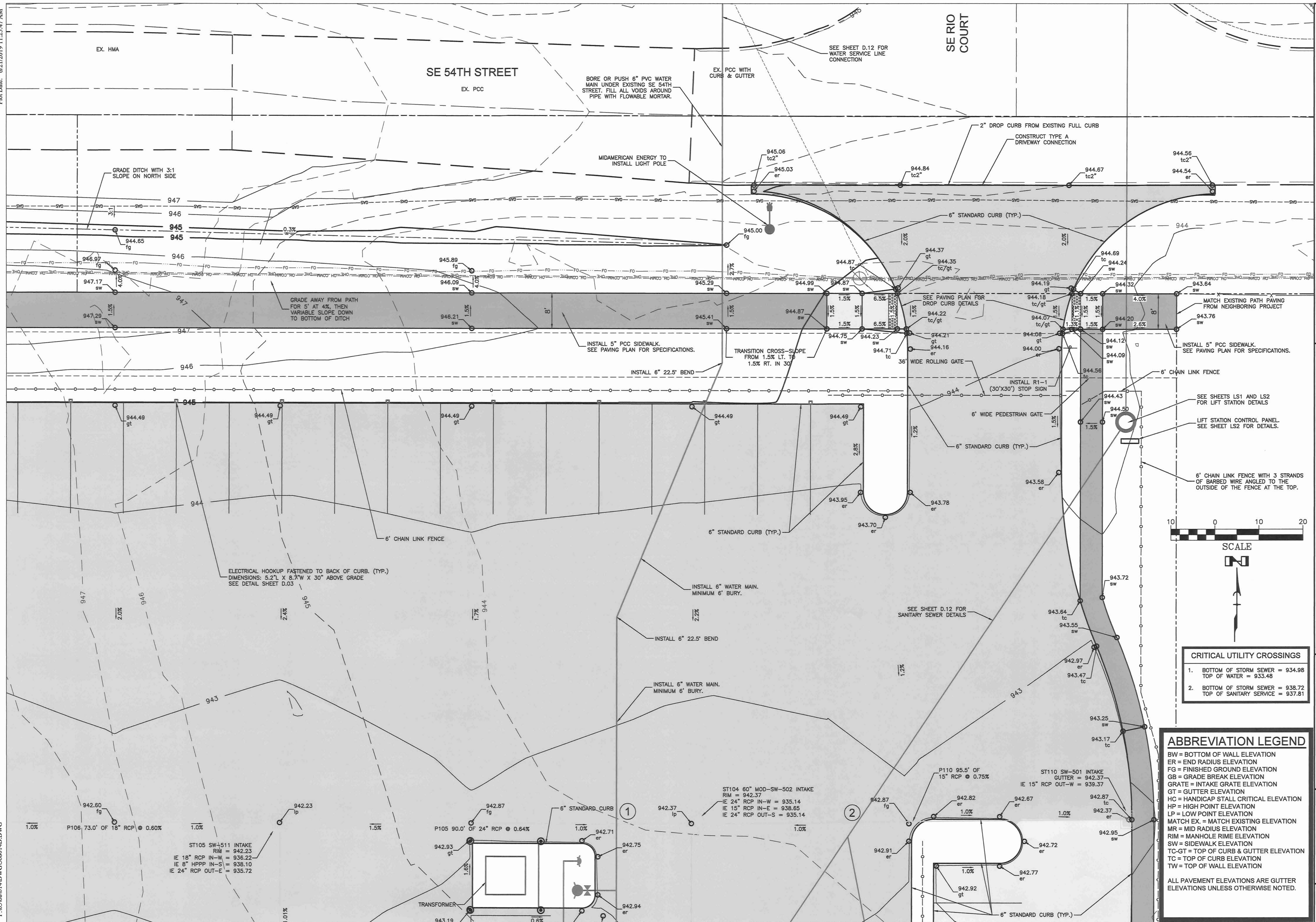
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Project Manager: K. PUHL
Designer: K. PUHL
Project Number: 568014
Phone: (712) 266-1554



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NORTH-EAST
PRELIMINARY
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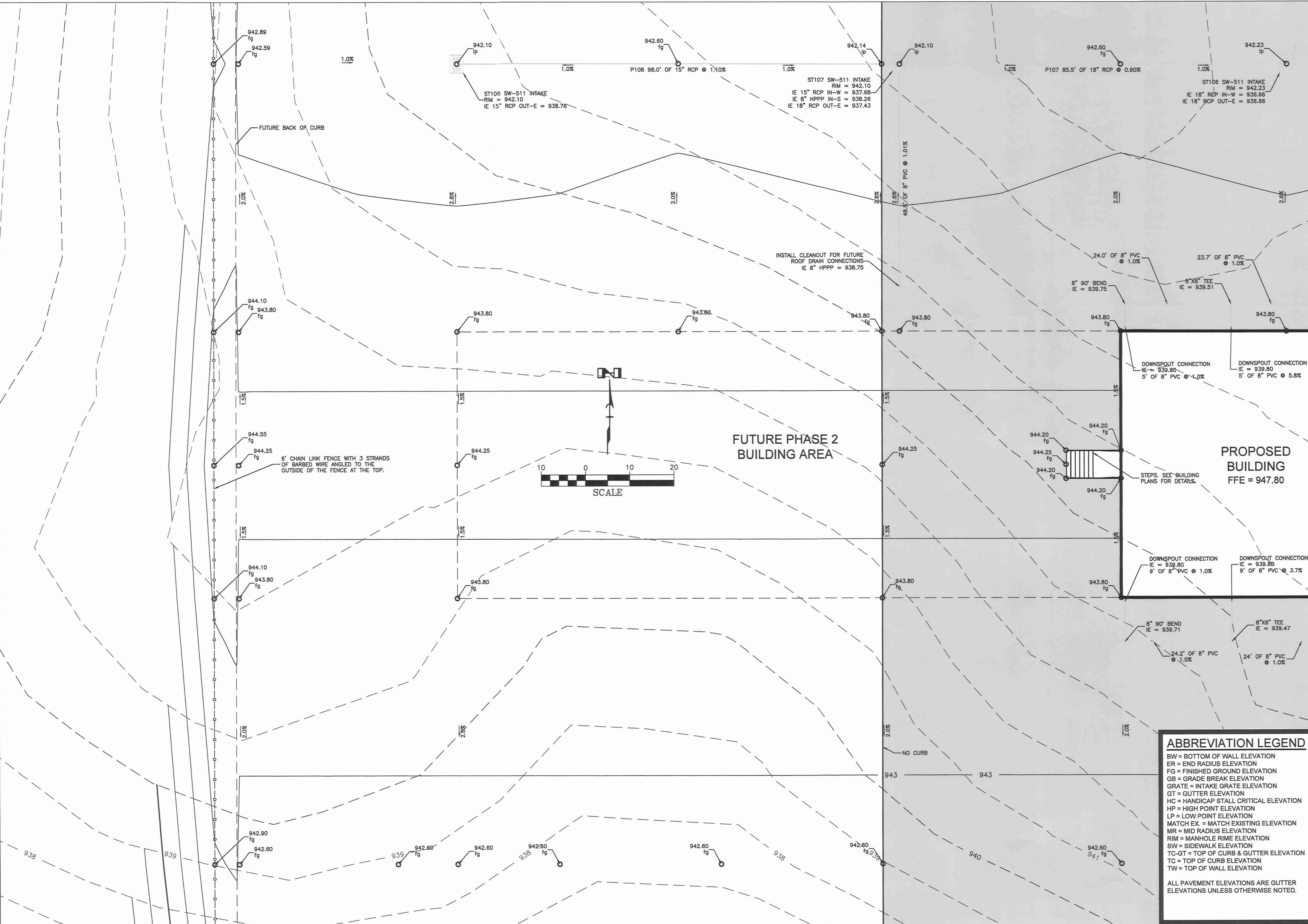


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PANAMA TRANSFER
SITE IMPROVEMENTS
ANKENY, IOWA

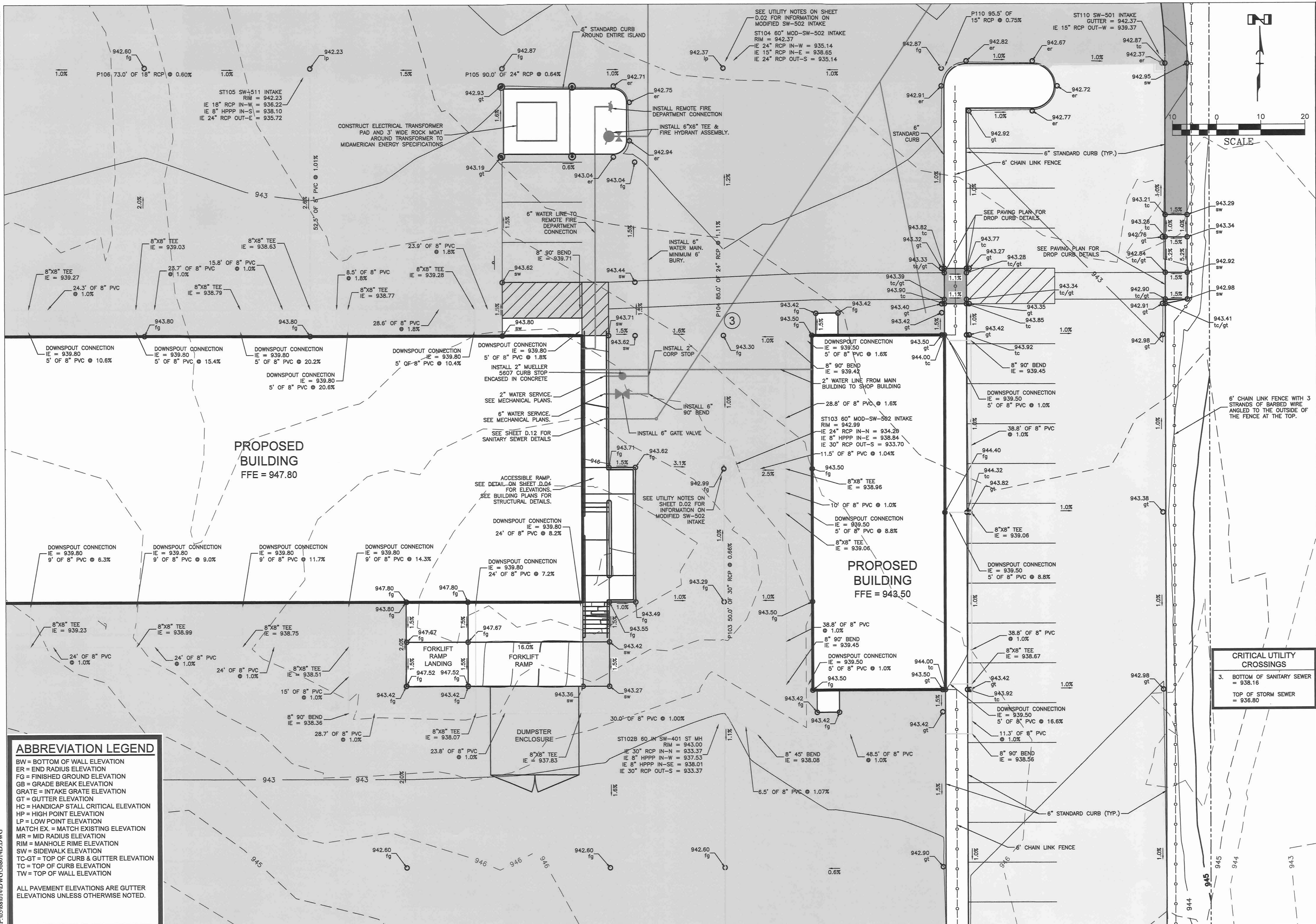
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CENTER-WEST

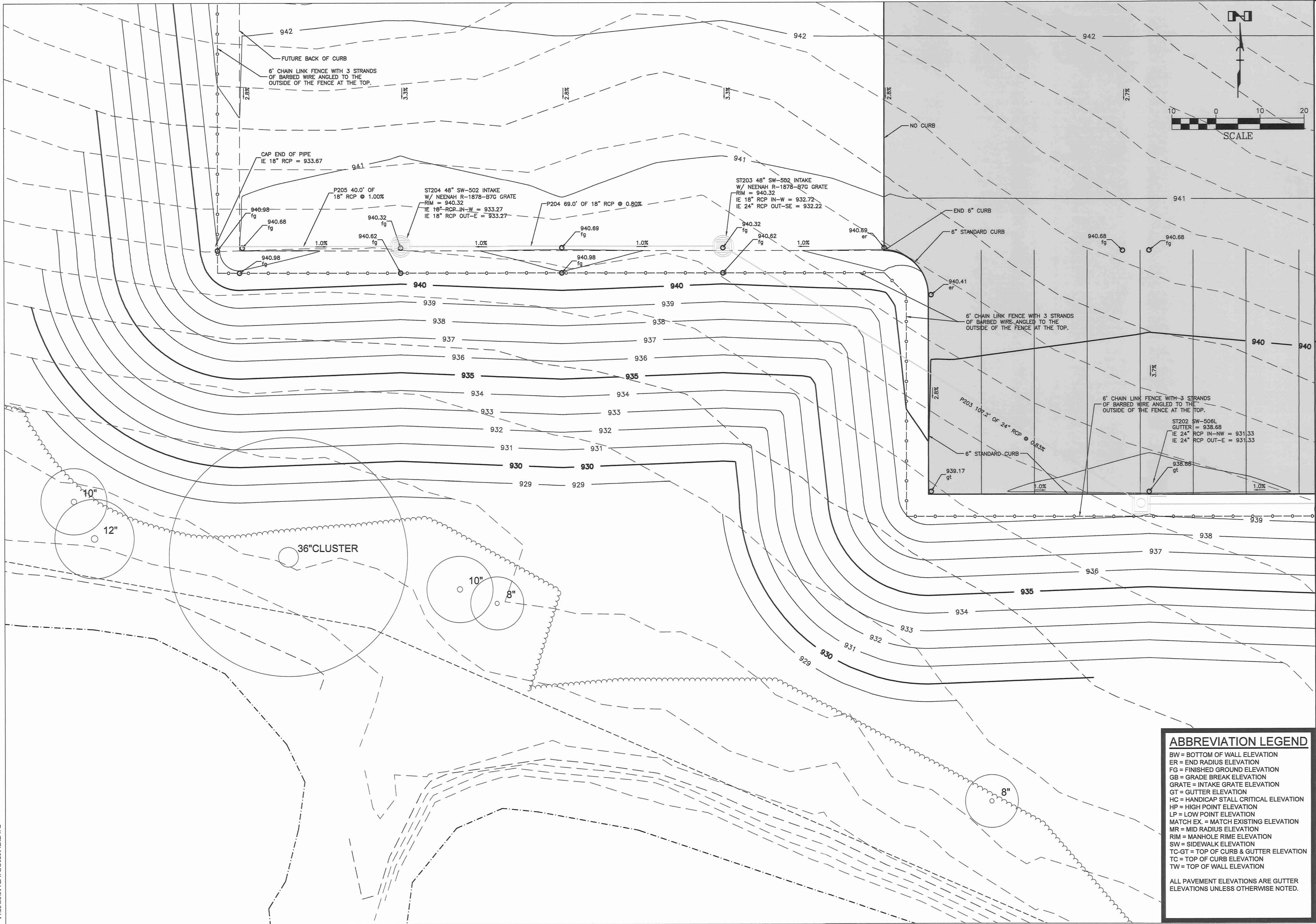
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Project Manager: K. PUHL
Designer: K. PUHL
Project Number: 568014
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ENGINEERING

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PANAMA TRANSFER
SITE IMPROVEMENTS
ANKENY, IOWA

GRADING & UTILITY PLAN

SOUTH-WEST

PRELIMINARY

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06/18/2019

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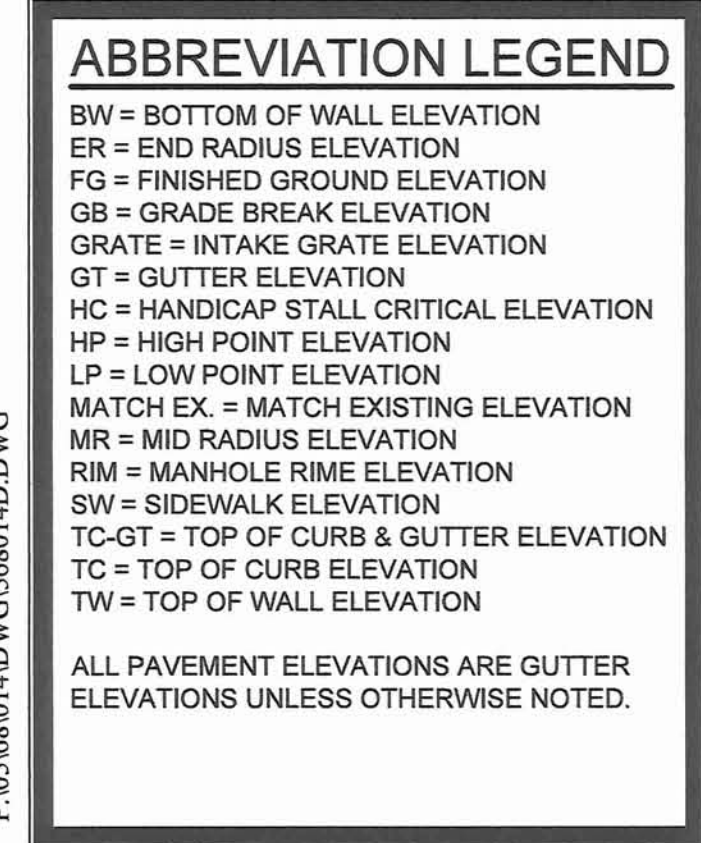


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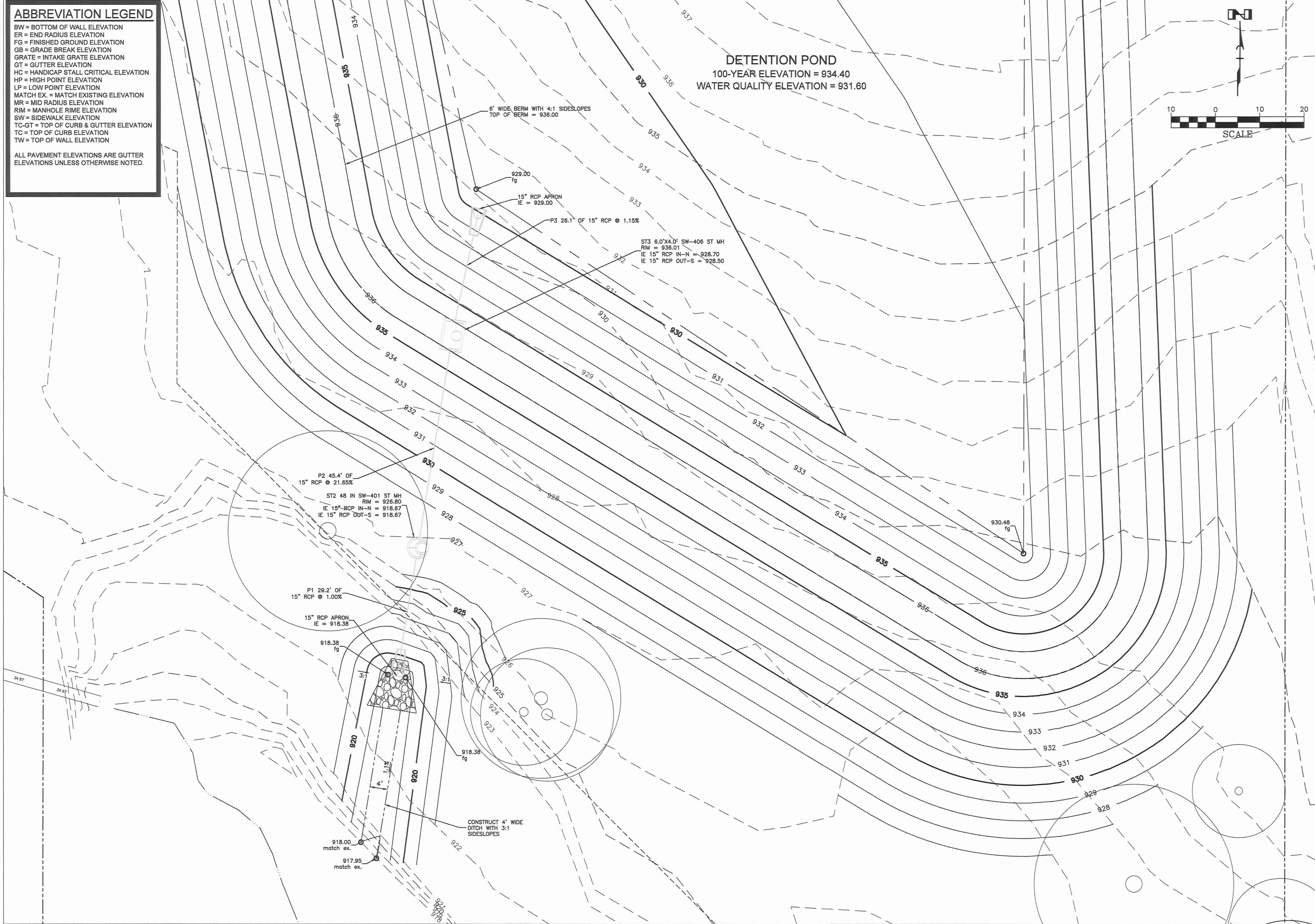
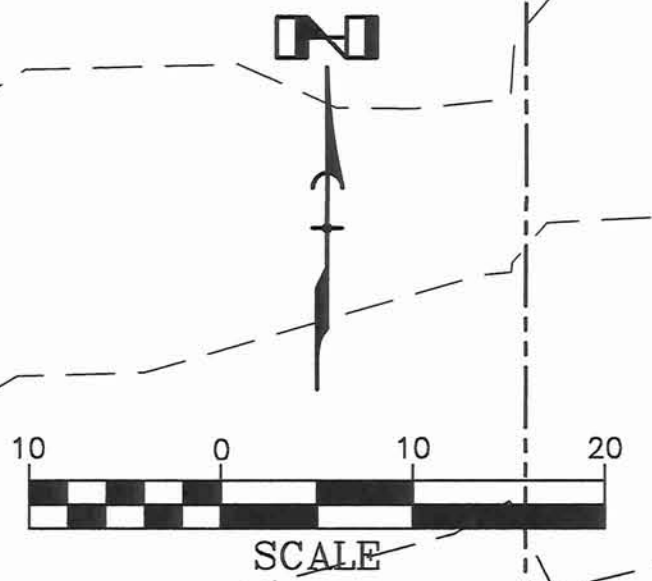
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ER = END RADIUS ELEVATION
FG = FINISHED GROUND ELEVATION
GB = GRADE BREAK ELEVATION
GRATE = INTAKE GRATE ELEVATION
GT = GUTTER ELEVATION
HC = HANDICAP STALL CRITICAL ELEVATION
HP = HIGH POINT ELEVATION
LP = LOW POINT ELEVATION
MATCH EX. = MATCH EXISTING ELEVATION
MR = MID RADIUS ELEVATION
RIM = MANHOLE RIME ELEVATION
SW = SIDEWALK ELEVATION
TC-GT = TOP OF CURB & GUTTER ELEVATION
TC = TOP OF CURB ELEVATION
TW = TOP OF WALL ELEVATION

ALL PAVEMENT ELEVATIONS ARE GUTTER
ELEVATIONS UNLESS OTHERWISE NOTED.

DETENTION POND
100-YEAR ELEVATION = 934.40
WATER QUALITY ELEVATION = 931.60



PANAMA TRANSFER
SITE IMPROVEMENTS
ANKENY, IOWA

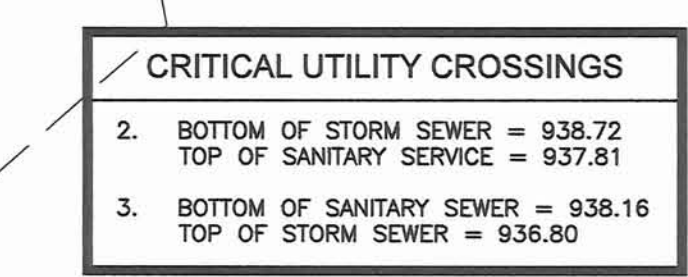
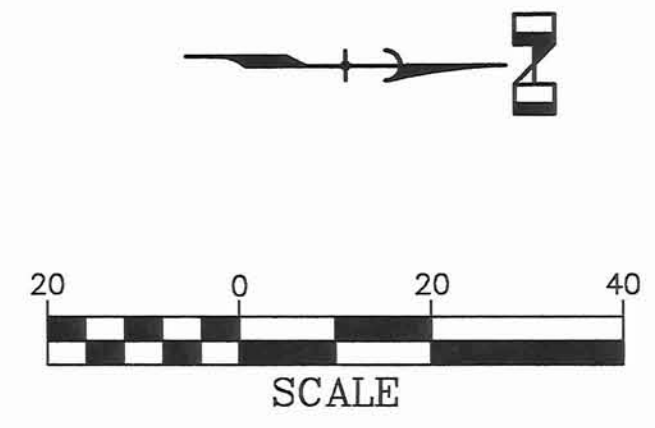
GRADING & UTILITY PLAN
DETENTION POND
PRELIMINARY
FOR REVIEW ONLY 06/18/2019

Project Manager: K. PUHL
Designer: K. PUHL
Project Number: 568014
Phone: (712) 266-1554

DGR
ENGINEERING

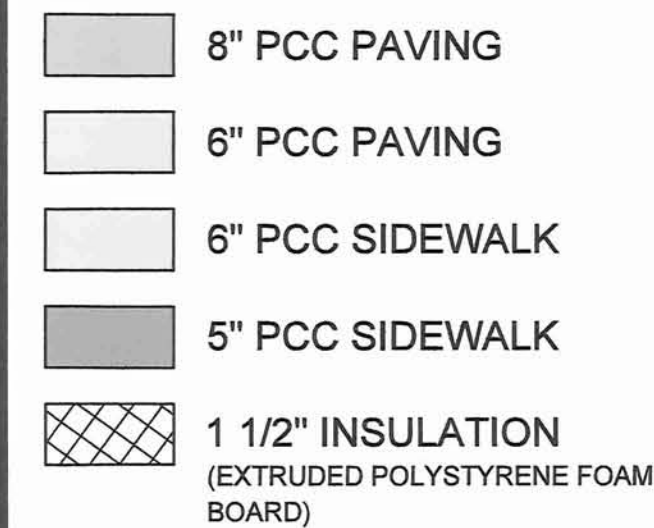
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ALL PARKING STALL LINES SHALL BE 4" WIDE YELLOW STRIPING, UNLESS OTHERWISE NOTED.





1. GRADE DETENTION AREA TO PLAN DIMENSIONS AND ELEVATIONS
2. INSTALL DETENTION BASIN OUTLET PIPE.
3. INSTALL TEMPORARY SEDIMENT RISER WITH GRANULAR FILTER AT INLET OF OUTLET PIPE.
4. INSTALL STORM SEWER PIPES OUTLETTING INTO DETENTION AREA. DO NOT INSTALL TURF REINFORCEMENT MAT OR FLOW TRANSITION MAT AT PIPE OUTLETS AT THIS TIME.
5. INSTALL TURF REINFORCEMENT MAT AND FLOW TRANSITION MAT FOR EMERGENCY SPILLWAY PROTECTION
6. SEED FERTILIZE AND MULCH DETENTION AREA.
7. COMPLETE SITE CONSTRUCTION ON PAVING STABILIZE ALL NON-HARD SURFACE AREAS AS CONSTRUCTION IS COMPLETED IN THOSE AREAS.
8. UPON FINAL STABILIZATION OF THE SITE, REMOVE THE TEMPORARY SEDIMENT RISER, REMOVE SEDIMENT FROM DETENTION AREA AND REGRADE DETENTION AREA TO DESIGN ELEVATIONS.
9. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING AS-BUILT SURVEY OF THE DETENTION AREA TO DOCUMENT THE EMBANKMENT BERM AND EMERGENCY SPILLWAY ARE CONSTRUCTED TO PLAN ELEVATIONS AND THAT A MINIMUM OF 108,108 CU. FT. OF DETENTION STORAGE IS PROVIDED AT ELEVATION 935. DOCUMENTATION SHALL BE PROVIDED TO THE PROJECT ENGINEER.
10. INSTALL TURF REINFORCEMENT MAT AND FLOW TRANSITION MAT AT THE ENDS OF STORM SEWERs DISCHARGING INTO THE DETENTION AREA. FLOW TRANSITION MAT SHALL BE RESEEDED UPSTREAM AND FLOW TRANSITION MAT SHALL BE RESEEDED AT THE DOWNSTREAM END OF FLOW TRANSITION MAT TO BE SECURELY FASTENED TO THE FLOW LINE OF THE PIPE APRON.
11. RESEED, FERTILIZE AND MULCH ALL DISTURBED AREAS IN THE DETENTION BASIN.

PLANT SCHEDULE:

CODE	QTY.	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	HEIGHT	SPREAD	SIZE
AG	05	AMELANCHIER x GRANDIFLORA	AUTUMN BRILLIANCE SERVICEBERRY	25'	20'	2" CAL
AP	09	ACER PSEUDOSIEBOLDIANUM	JACK FROST ARCTIC JADE MAPLE	20'	15'	2" CAL
AR	20	ACER RUBRUM 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	50'	30'	2" CAL
MS	04	MALUS 'SPRING SNOW'	SPRING SNOW FLOWERING CRAB	25'	15'	2" CAL
PT	22	POPULUS TREMULOIDES	TREMBLING ASPEN	50'	30'	2" CAL
PG	09	PICEA GLAUCA 'DENSATA'	BLACK HILLS SPRUCE	40'	20'	2" CAL
TC	18	TILIA CORDATA	LITTLE-LEAF LINDEN	50'	30'	2" CAL
CA	102	CALAMAGROSTIS ACUTIFLORA	FEATHER REED GRASS	4'	2'	#1 CONT
CS	30	CORNUS SERICEA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	4'	4'	#1 CONT.
SJ	31	SPIRAEA JAPONICA 'GOLD MOUND'	JAPANESE SPIREA	3'	3'	#1 CONT.

NOTES:

- ALL WORK TO BE PERFORMED ACCORDING TO THE 2019 SUDAS STANDARD SPECIFICATIONS (AVAILABLE AT www.iowasudas.org) AND THE 2017 CITY OF ANKENY SUPPLEMENT SPECIFICATIONS TO SUDAS.
- CONTRACTOR SHALL LOCATE ALL UTILITIES BEFORE ANY PLANTING BEGINS.
- ALL NEW AND EXISTING STRUCTURES AND UTILITY SERVICES SHALL BE PROTECTED DURING INSTALLATION OF ALL PLANT MATERIAL. NOTIFY ENGINEER UPON CONFLICT.
- TYPE, SIZE, AND QUALITY OF PLANT MATERIAL SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK - ANSI Z60.1.
- CONTRACTOR SHALL LAY OUT ALL PLANT MATERIAL IN THE FIELD FOR PLANTING. SHRUBS ARE NOT TO BE LOCATED CLOSER THAN 2' FROM ADJACENT WALKS.
- ANY REPLACEMENTS OF PLANT MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL MAINTAIN ALL LANDSCAPING ON SITE FOR THE DURATION OF THE PROJECT AND WARRANTY PERIOD.
- CONTRACTOR IS RESPONSIBLE FOR ALL PLANTS WAITING TO BE INSTALLED AND SHALL PROTECT THEM FROM DAMAGE AND INJURY. PLANTS THAT HAVE BEEN DAMAGED OR NOT PROPERLY MAINTAINED WILL BE REJECTED. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPLACEMENTS AT NO ADDITIONAL COST TO THE OWNER.
- TREES AND SHRUBS SHALL STAND PLUMB. TREES SHALL BE STAKED AS SPECIFIED.
- SHREDDED HARDWOOD MULCH SHALL BE PLACED AROUND ALL TREES, SHRUBS, AND IN ALL PLANTING BEDS TO A MINIMUM DEPTH OF 3".
- CONTRACTOR SHALL COORDINATE WITH OWNER AND ENGINEER, AND SUBMIT AN IRRIGATION DESIGN FOR APPROVAL FOR ALL AREAS TO BE SEEDED. SEE UTILITY PLAN FOR PROPOSED SLEEVE LOCATIONS.

LANDSCAPE REQUIREMENTS AND CALCULATIONS:

OPEN SPACE REQUIREMENTS:
20% OPEN SPACE REQUIRED
479,812 SF (LOT AREA) x 20% = 95,963 SF MINIMUM OPEN SPACE REQUIRED
479,812 SF (LOT AREA) - 125,494 SF (PROPOSED PAVEMENT) = 354,318 SF OPEN SPACE

OPEN SPACE PLANTINGS:
95,963 SF / 3,000 SF = 31.98 PLANT UNITS
32 PLANT UNITS x 3 TREES = 96 TREES REQUIRED
OPEN SPACE TREE CALCULATIONS:

EXISTING TREES 41 TREES x 1 41 TREES
PROPOSED TREES 56 TREES x 1 56 TREES
SHADING TREES (5 Shade/5 Open Space) 32 TREES x 5 16 TREES
113 TREES PROVIDED

32 PLANT UNITS x 3 SHRUBS = 96 SHRUBS REQUIRED (114 PROVIDED)

SHADING TREE REQUIREMENTS:
125,494 SF PAVEMENT x 20% = 25,099 SF
25,099 SF / 706 SF = 36 TREES REQUIRED

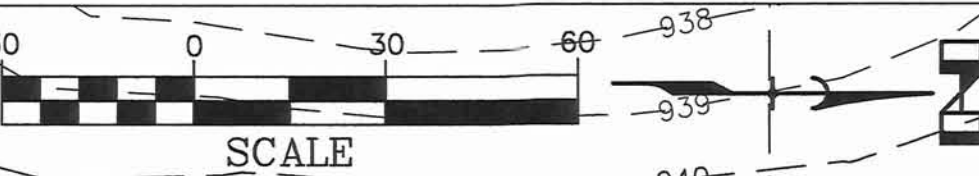
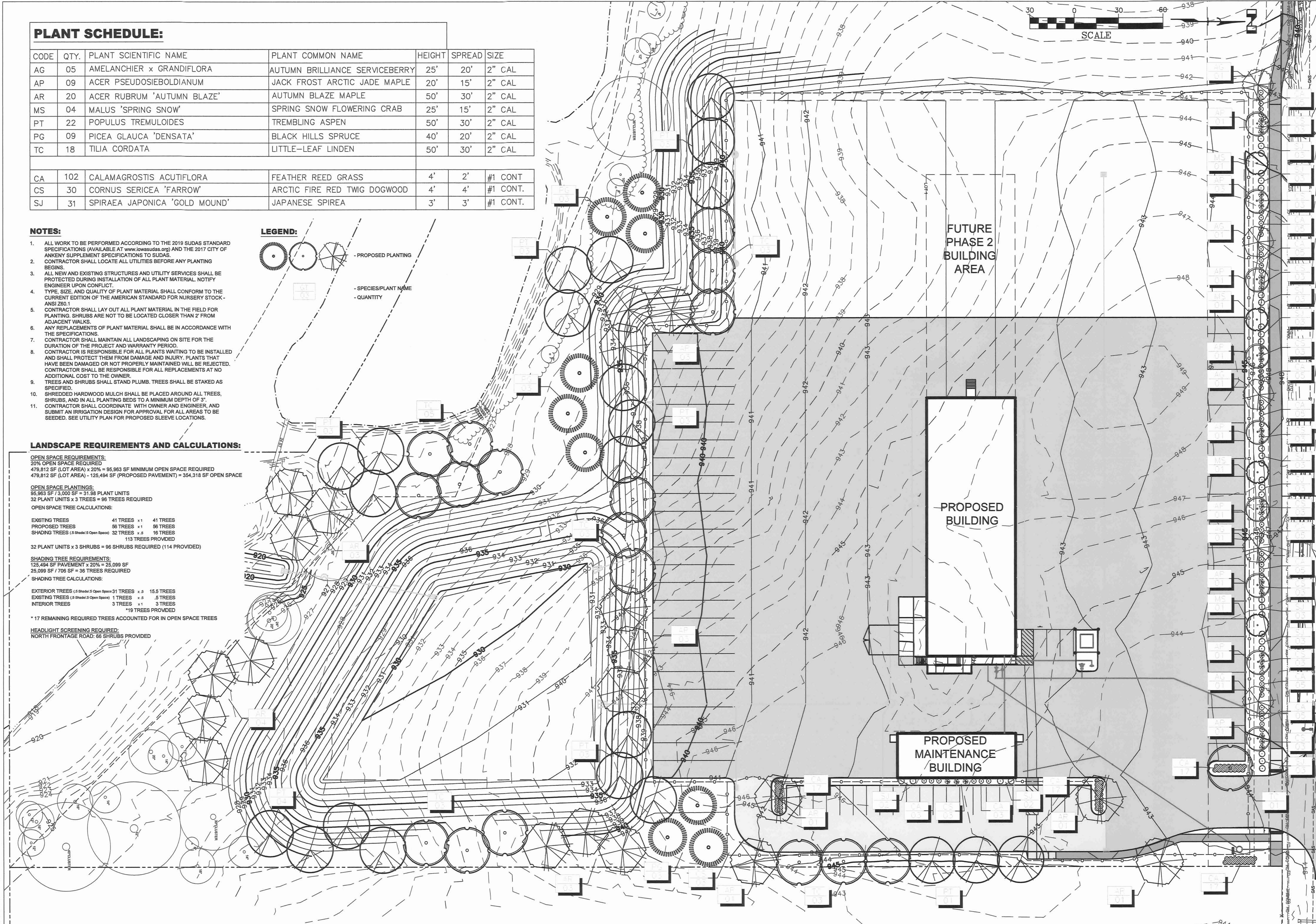
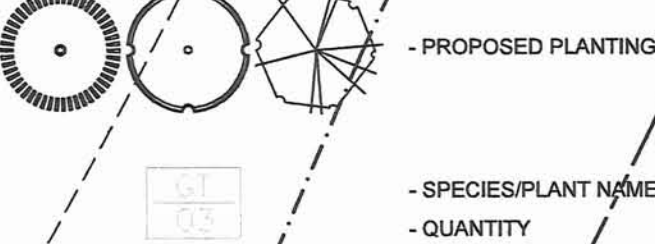
SHADING TREE CALCULATIONS:

EXTERIOR TREES (5 Shade/5 Open Space) 31 TREES x 5 15.5 TREES
EXISTING TREES (5 Shade/5 Open Space) 1 TREES x 5 .5 TREES
INTERIOR TREES 3 TREES x 1 3 TREES
*19 TREES PROVIDED

* 17 REMAINING REQUIRED TREES ACCOUNTED FOR IN OPEN SPACE TREES

HEADLIGHT SCREENING REQUIRED:
NORTH FRONTAGE ROAD: 66 SHRUBS PROVIDED

LEGEND:



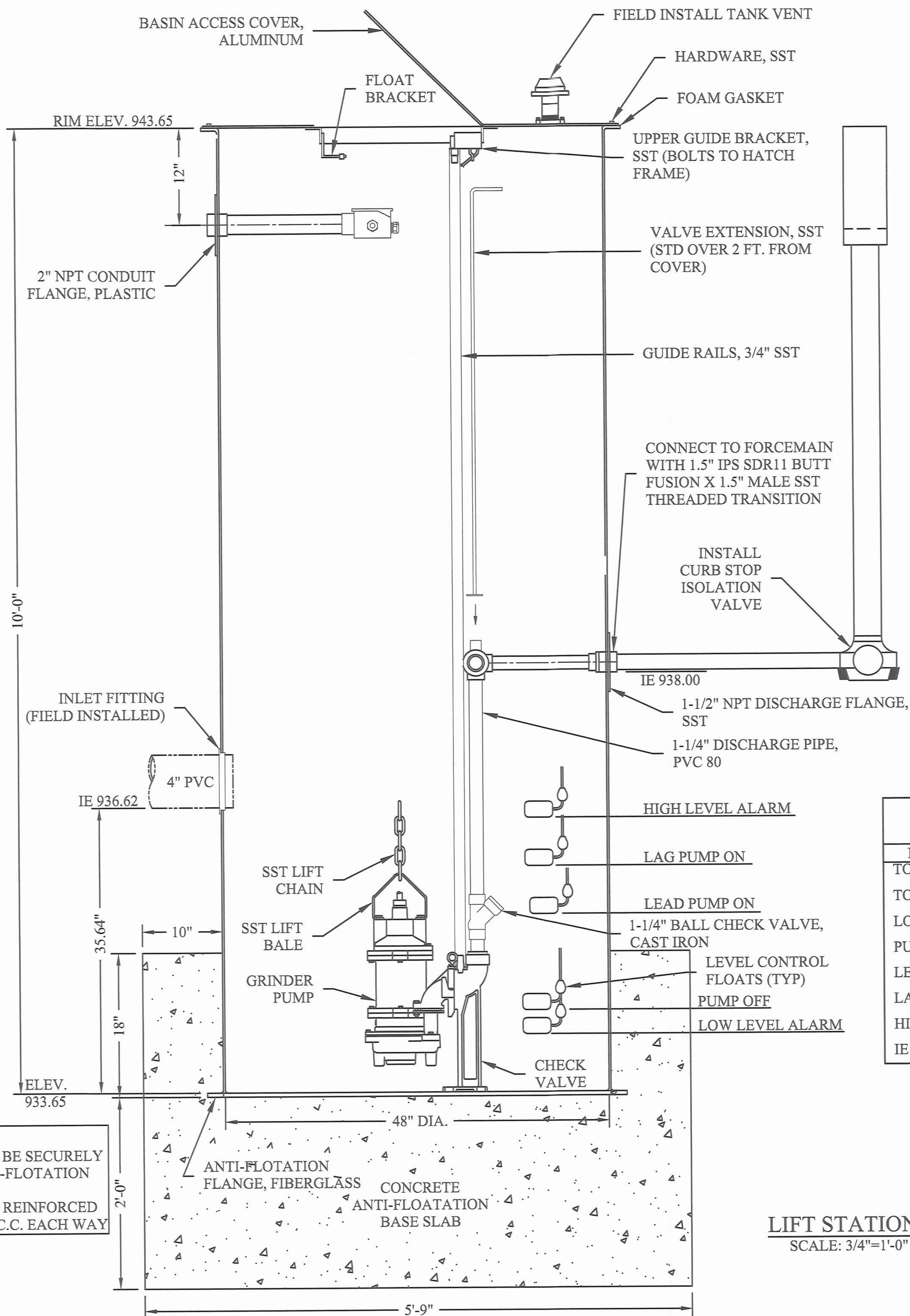
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LANDSCAPING PLAN
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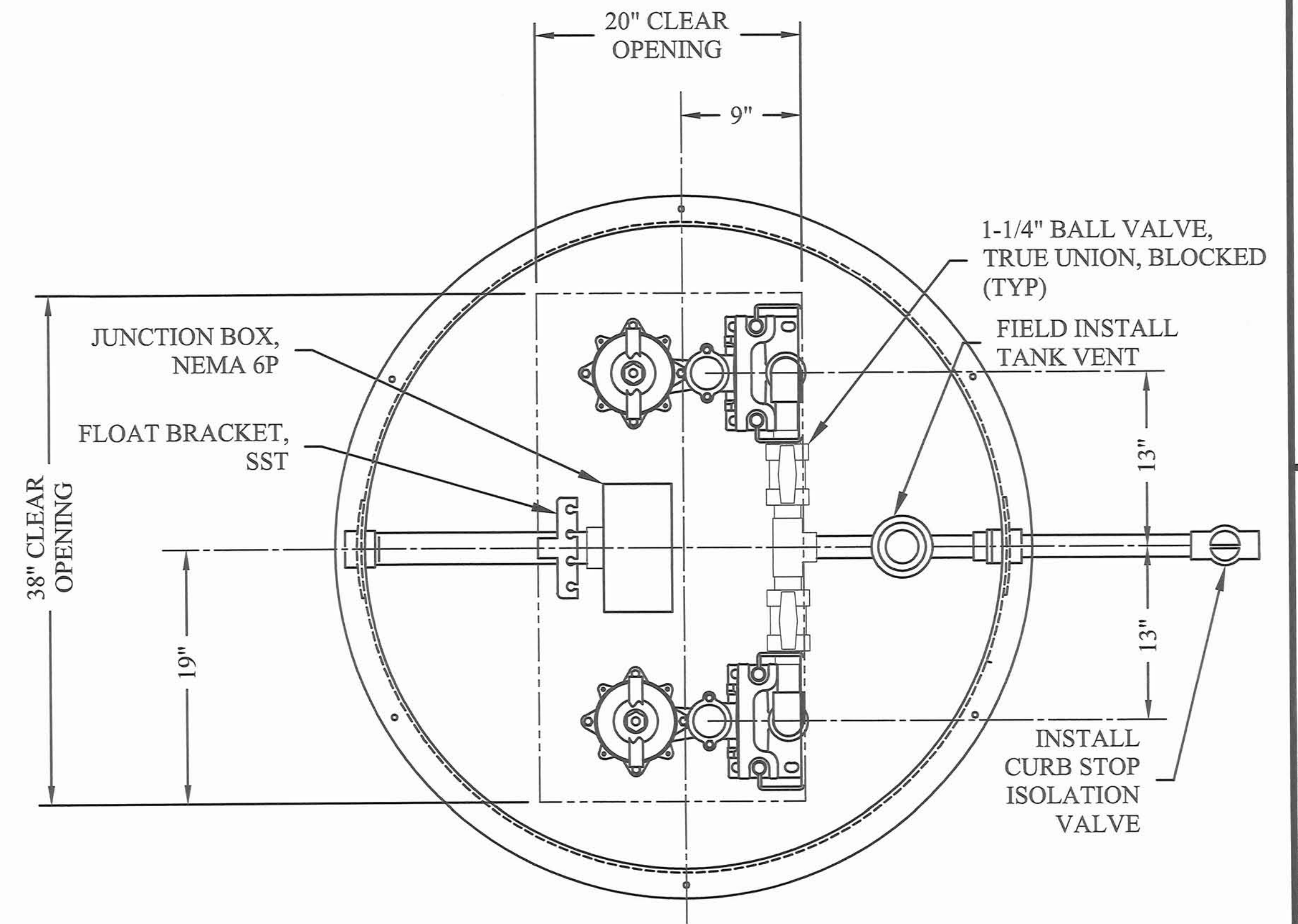


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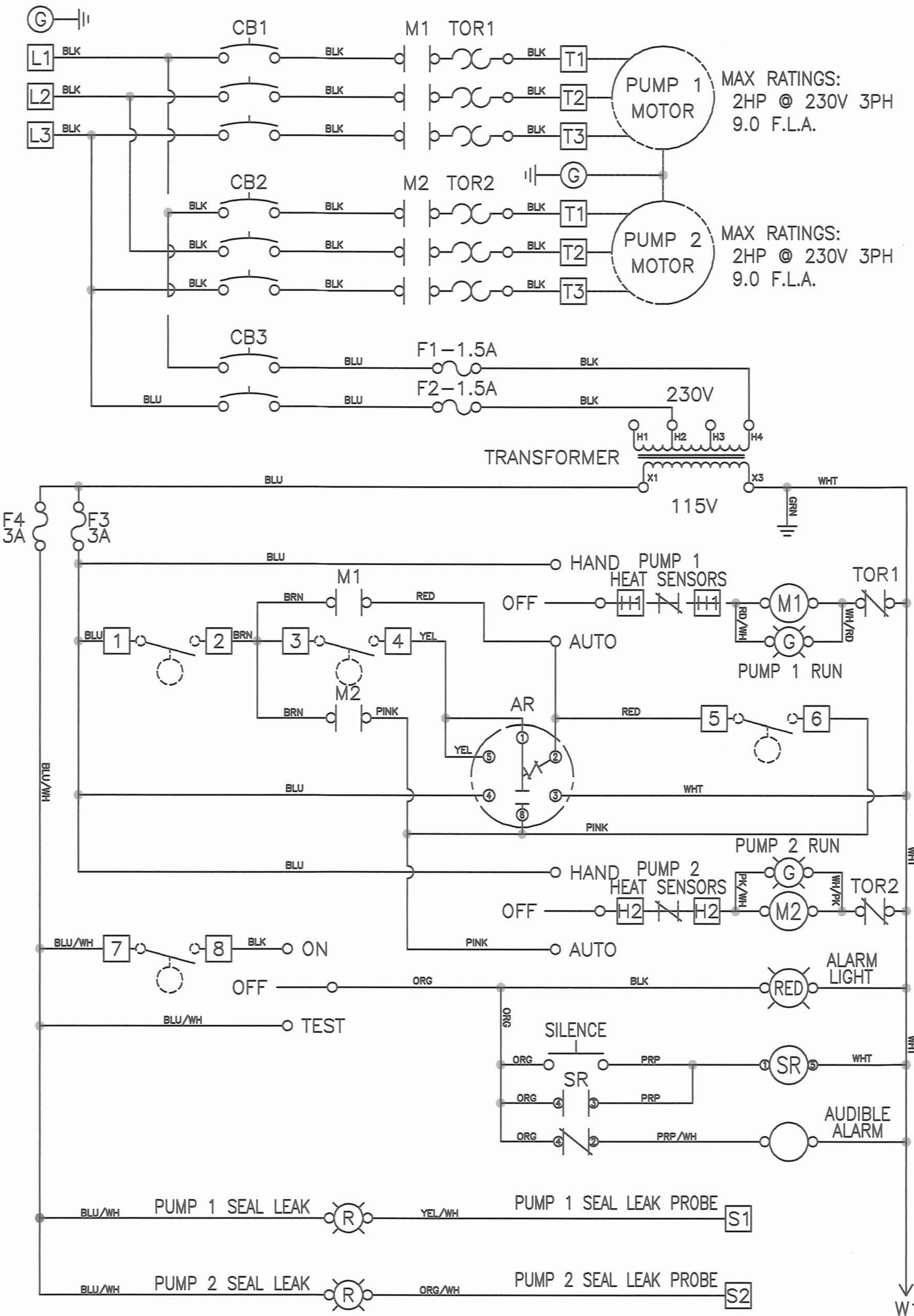
NOTE:
STATION BASE TO BE SECURELY FASTENED TO ANI-FLOTATION BASE SLAB.
CONCRETE BASE - REINFORCED W/ #4 BARS @ 12" C.C. EACH WAY

LIFT STATION - ELEVATIONS -	
DESCRIPTION	ELEVATION
TOP/STRUCTURE	943.65
TOP/BASE	933.65
LOW LEVEL ALARM	934.25
PUMP OFF	934.50
LEAD PUMP ON	935.50
LAG PUMP ON	936.00
HIGH LEVEL ALARM	936.50
IE	936.62



LIFT STATION DETAIL
SCALE: 3/4"=1'-0"

POWER CIRCUIT (3 WIRE SERVICE)
230V - 3PH - 60Hz



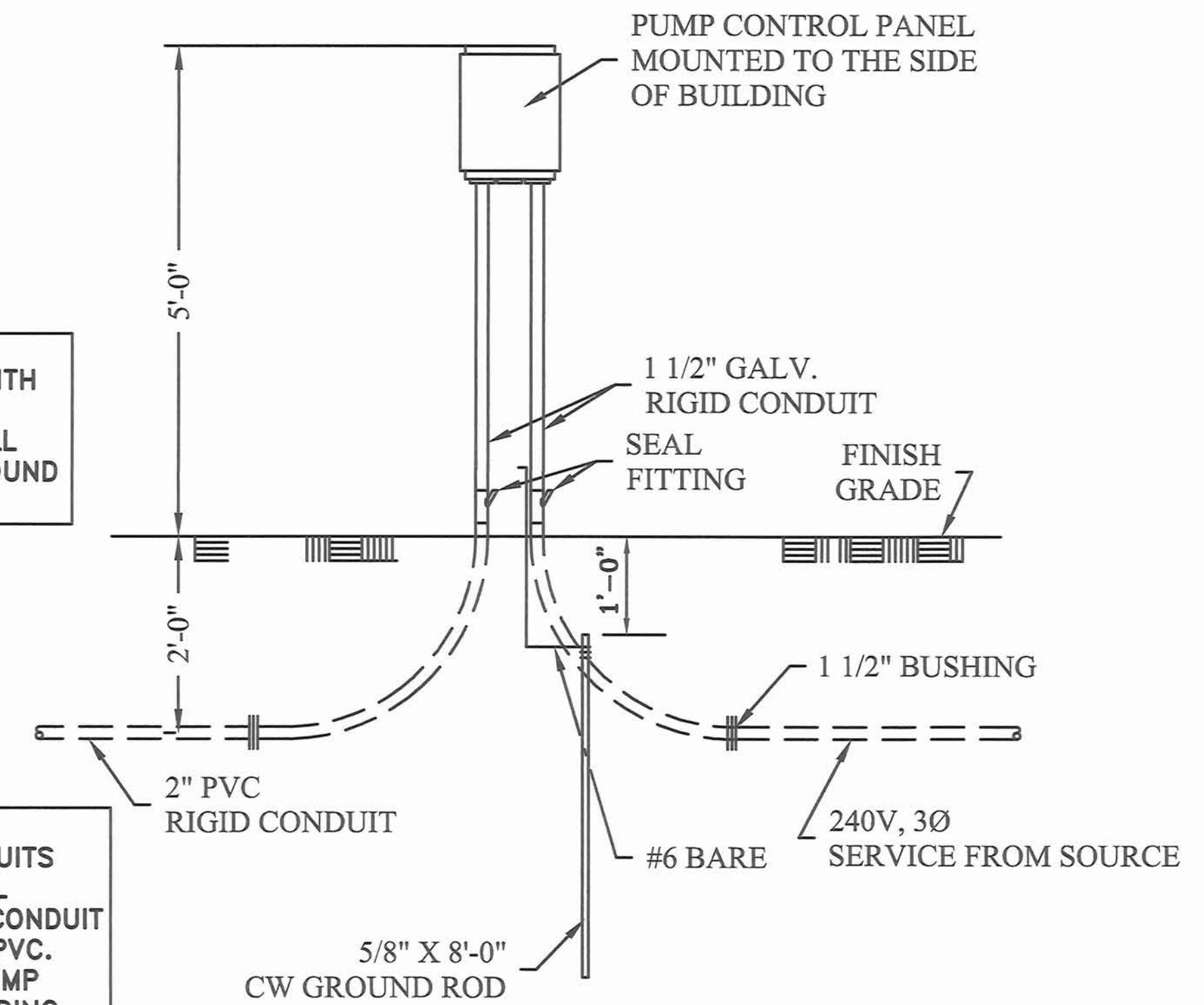
NOTES: FLOAT SWITCH TO BE RATED 2 AMP AT 120V MINIMUM.
MAIN PANEL DISCONNECT MUST BE PROVIDED BY INSTALLER.
DASHED LINES INDICATE ITEMS NOT CONTAINED IN THE PANEL.
REQUIRED TORQUE FOR TERMINAL BLOCK SCREWS IS 16 in-lbs.
FIELD WIRING MUST BE A MINIMUM OF 60°C COPPER WIRE.

CONTROL PANEL WIRING DIAGRAM

NOT TO SCALE

NOTE:
CONDUCTORS SHALL BE MARKED WITH VINYL TAPE AT ALL CONNECTIONS.
NEUTRAL SHALL BE WHITE. INSTALL BUSHINGS ON ALL CONDUITS. GROUND NEUTRAL IN DISCONNECT.

NOTE:
PUMP POWER AND CONTROL CONDUITS SHALL BE RIGID GALVANIZED STEEL ABOVE GROUND. UNDERGROUND CONDUIT TO PUMP STATION MAY BE RIGID PVC. CONDUITS CONNECTING TO THE PUMP STATION SHALL BE SEALED ACCORDING TO NEC HAZARDOUS AREA GUIDELINES BEFORE ENTERING PUMP CONTROL PANEL.



POWER SUPPLY
SIMPLEX LIFT STATION

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