



# CITY OF TACOMA

## PUBLIC WORKS DEPARTMENT

### ASPHALT BATCH PLANT STORAGE TANKS

CITY OF TACOMA PUBLIC WORKS DEPARTMENT  
JOSH LAUER, PM  
747 MARKET STREET  
TACOMA, WA 98402

CIVIL ENGINEER  
BILL ARMOUR, PE  
KPFF CONSULTING ENGINEERS  
2407 N 31ST STREET SUITE 100  
TACOMA, WA 98407  
(253) 396-0150

ELECTRICAL ENGINEER  
BEN HEDIN, PE  
BCE ENGINEERS, INC.  
6021 12TH STREET E SUITE 200  
FIFE, WA 98424  
(253) 922-0446

ASSOCIATED PERMITS  
CITY OF TACOMA COMMERCIAL NEW BUILDING PERMIT, BLDN23-0004  
  
CITY OF TACOMA SITE DEVELOPMENT PERMIT, SDVE23-0026

DEFERRED SUBMITTALS  
THE STAIRS, LANDING, AND ASPHALT STORAGE TANKS SHALL BE SUBMITTED AS A DEFERRED SUBMITTAL TO THE CITY OF TACOMA PLANNING AND DEVELOPMENT SERVICES.

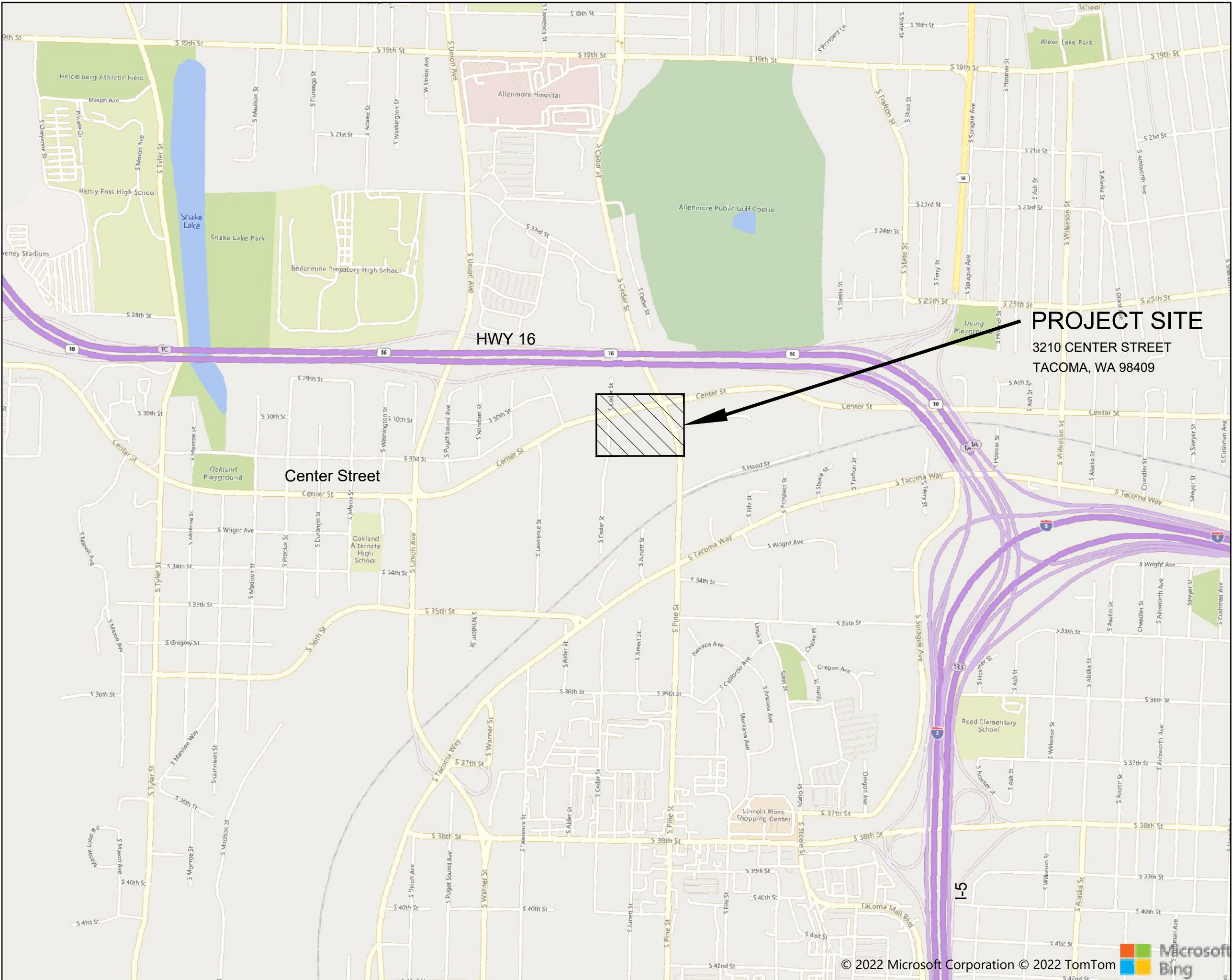
NOTE  
THE FOLLOWING WORK ASSOCIATED WITH THIS PROJECT ARE BIDDER DESIGNED. DESIGN SHALL BE PREPARED BY THE CONTRACTOR AND SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF WASHINGTON. DESIGN OF THESE ITEMS SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC) 2018, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), WASHINGTON INDUSTRIAL SAFETY AND HEALTH ADMINISTRATION, INDUSTRY STANDARDS, AND THE REQUIREMENTS OF ALL FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, PERMITTING, FABRICATION, INSTALLATION, AND TESTING OF A FULLY FUNCTIONAL ASPHALT STORAGE AND HANDLING SYSTEM INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- ASPHALT STORAGE TANKS AND APPURTENANCES
- ASPHALT STORAGE TANK TO CONCRETE FOUNDATION CONNECTIONS
- ASPHALT HANDLING EQUIPMENT INCLUDING PUMPS, PIPING, FITTINGS, VALVES, ELECTRICAL CONTROLS AND ENCLOSURES, FITTINGS, EQUIPMENT AND PIPING SUPPORTS AND ASSOCIATED CONNECTIONS,
- EQUIPMENT AND STORAGE TANK INSULATION AND HEAT TRACING
- ACCESS STAIRS, LANDINGS, LADDERS, CATWALKS, HANDRAILS, AND ALL ASSOCIATED CONNECTIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEFERRED SUBMITTALS RELATED TO THESE ITEMS INCLUDING DRAWINGS, CALCULATIONS, AND OTHER INFORMATION AS REQUIRED BY THE CITY OF TACOMA AND ALL OTHER REVIEWING AGENCIES AS APPLICABLE.

STRUCTURAL ENGINEER  
IAN FRANK, PE  
KPFF CONSULTING ENGINEERS  
2407 N 31ST STREET SUITE 100  
TACOMA, WA 98407  
(253) 396-0150

GEOTECHNICAL ENGINEER  
LYLE J. STONE, PE  
GEOENGINEERS INC.  
1101 FAWCETT AVENUE SUITE 200  
TACOMA, WA 98402  
(253) 383-4940



PROJECT SITE  
Scale: NTS

#### SHEET INDEX

Sheet No.	Sheet Title
G1	COVER SHEET
G2	KEY PLAN
D1	DEMOLITION PLAN
C1	SITE PLAN - DOUBLE TANK
C2	PROFILE - DOUBLE TANK
C3	CIVIL DETAILS
S1	STRUCTURAL NOTES
S2	FOUNDATION PLAN
S3	SECTIONS AND DETAILS
E1	ELECTRICAL LEGEND AND DETAILS - DOUBLE TANK
E2	ELECTRICAL SITE PLAN - DOUBLE TANK
E3	ONE LINE DIAGRAM - DOUBLE TANK
E4	PANEL SCHEDULES - DOUBLE TANK
E5	PANEL SCHEDULES - DOUBLE TANK

#### PARCEL INFORMATION

PARCEL NO. 0320073067  
PARCEL AREA: 155,629 SF, 3.57 AC  
SITE AREA: 928.17 SF, 0.02 AC

LEGAL DESCRIPTION PER AVAILABLE PIERCE COUNTY ASSESSOR INFORMATION:  
SECTION 07 TOWNSHIP 20 RANGE 03 QUARTER 31 : COM NE COR OF SW OF 07-20-03E TH S 840 FT M/L ALG E LI OF SUBD TH S 58 DEG 35 MIN 16 SEC W 42.73 FT TH S 57 DEG 23 MIN W 100 FT M/L TO W LI PINE ST TH NWLY 16.12 FT ALG W LI PINE ST TO POB TH ON A NON-TANGENT LI S 65 DEG 33 MIN 18 SEC W 31.19 FT TH S 31 DEG 01 MIN 04 SEC E 3.55 FT TH S 61 DEG 00 MIN 36 SEC W 292.26 FT TH W 254 FT TO E LI VAC CEDAR ST TH S 200 FT ALG SD E LI CEDAR ST TH S 57 DEG 03 MIN 28 SEC W 160 FT M/L TO NE COR OF SHORT PLAT 75-303 TH NELY 199.43 FT TO W LI VAC CEDAR ST TH NELY 55 FT M/L TO C/L VAC CEDAR ST TH NELY 330 FT M/L TO A PT ON SLY LI CENTER ST 52 FT M/L NELY OF W LI CEDAR ST TH NELY ALG S LI CENTER ST 480 FT M/L TO INTER OF S LI CENTER ST & W LI PINE ST TH SELY ALG W LI PINE ST TO POB OUT OF POR 3-007 & 3-066 SEG U-0894 CA ES

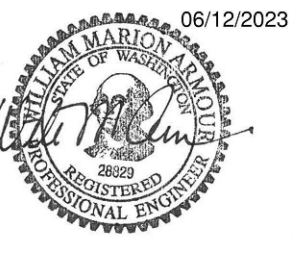
#### DATUM

HORIZONTAL: NAD83-91  
VERTICAL: NGVD 1929



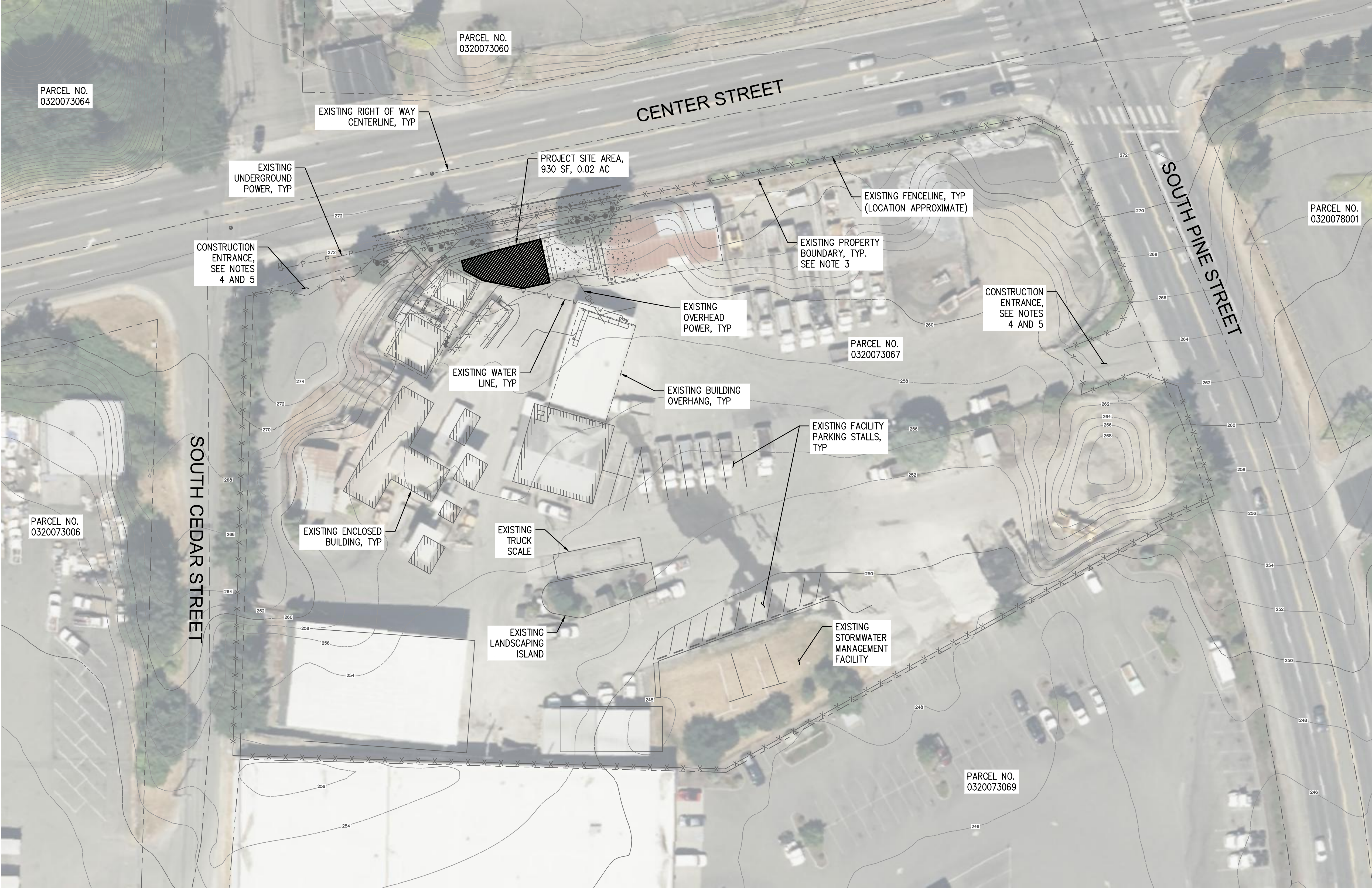
NO	REVISION	DATE	APPD

FINAL CONSTRUCTION CHECKED	DATE JUNE 2023	SCALE AS SHOWN
BY JPO	CHECKED WMA	
DATE	DRAWN JPO	PROJECT NAME
FIELD BOOKS	DRAWING NAME COVER SHEET	



CITY OF TACOMA PUBLIC WORKS DEPARTMENT ASPHALT BATCH PLANT STORAGE TANKS COVER SHEET	SPEC. NO. WBS NO. SHEET NO. SHEET 1 OF 14
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- NOTES
1.

TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY, PREPARED BY KPFF CONSULTING ENGINEERS, DATED MARCH 3, 2022 AND CITY OF TACOMA LIDAR DATA.
2.

SEE SHEET C1 FOR DETAILED EXISTING UTILITIES.
3.

PROPERTY BOUNDARY LINES TAKEN FROM PIERCE COUNTY GIS DATA.
4.

CONTRACTOR SHALL COORDINATE CONSTRUCTION TRAFFIC WITH CITY OF TACOMA PUBLIC WORKS DEPARTMENT.
5.

SEE EROSION AND SEDIMENT CONTROL NOTES 4 AND 9 ON SHEET D1 FOR CONSTRUCTION ENTRANCE REQUIREMENTS.

- CONSTRUCTION SEQUENCING
1.

CONTRACTOR TO MOBILIZE.
2.

PAVEMENT DEMOLITON TO OCCUR – SEE DEMOLITION PLAN FOR PAVEMENT DEMOLITION EXTENTS.
3.

ELECTRICAL INSTALLATION TO OCCUR.
4.

CONTRACTOR TO INSTALL FOUNDATION AND CONTAINMENT STRUCTURE.
5.

CONTRACTOR TO SET TANKS.
6.

CONTRACTOR TO INSTALL PUMPS, CONTROLLERS, AND PIPING.
7.

CONTRACTOR TO INSTALL STAIRS, LADDERS, CATWALKS, AND HANDRAILS.
8.

CONTRACTOR TO INSTALL LIGHTS.
9.

ASPHALT PAVING TO OCCUR.
10.

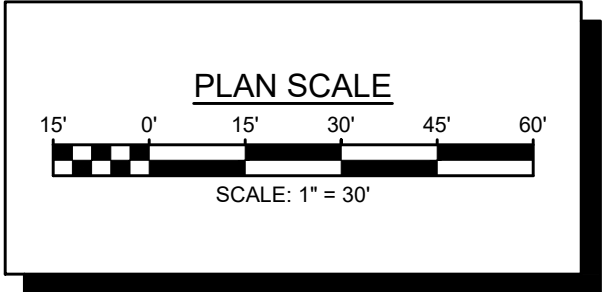
COMMISSIONING TO OCCUR.
11.

PUNCHLIST TO OCCUR.

KEY PLAN

SCALE: 1" = 30'

1



kpff

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(253) 396-0150 Fax (253) 396-0162



NO

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CONSTRUCTION  
CHECKED

BY

DATE

FIELD BOOKS

DATE

JUNE 2023

DESIGNED

JPO

DRAWN

JPO

SCALE

AS SHOWN

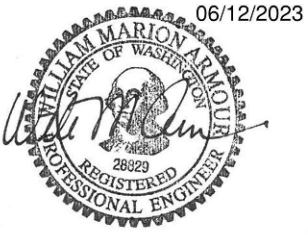
CHECKED

WMA

PROJECT NAME

DRAWING NAME

KEY PLAN



CITY OF TACOMA  
PUBLIC WORKS DEPARTMENT  
ASPHALT BATCH PLANT STORAGE TANKS  
KEY PLAN

SPEC. NO.

WBS NO.

SHEET NO.

SHEET

G2

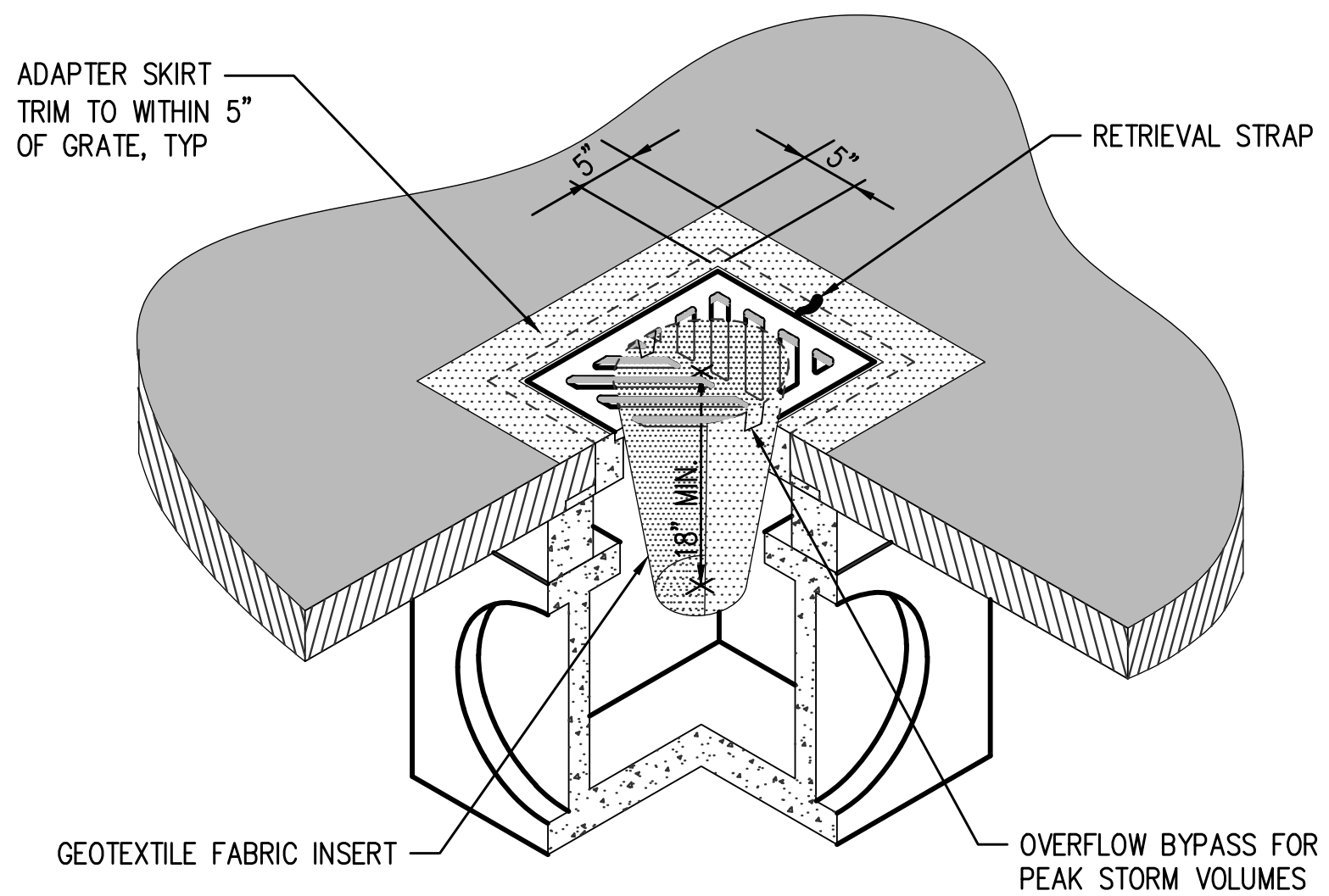
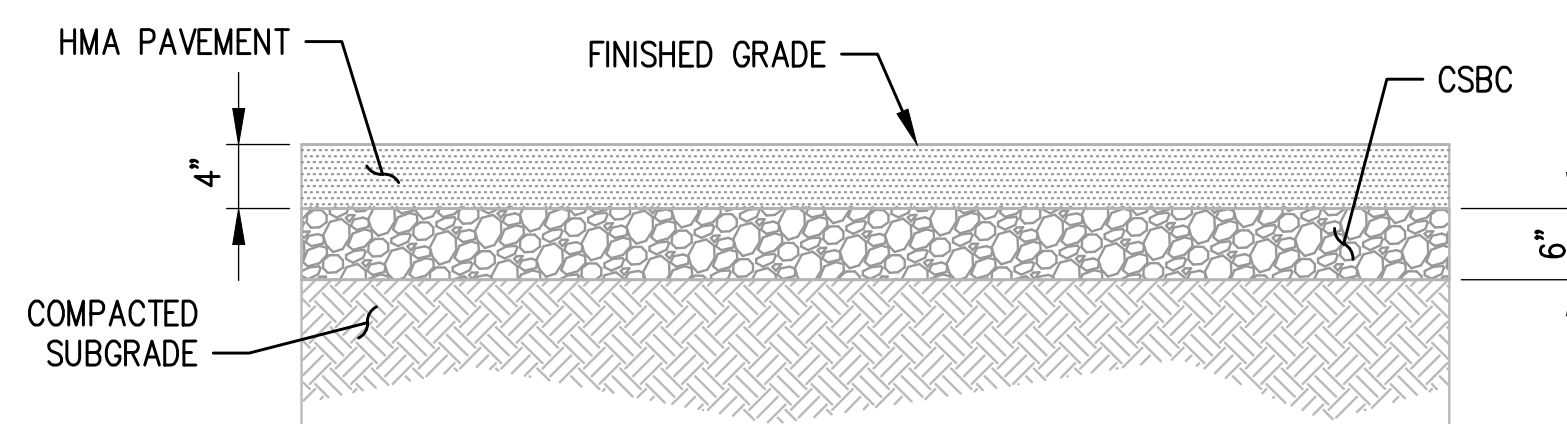
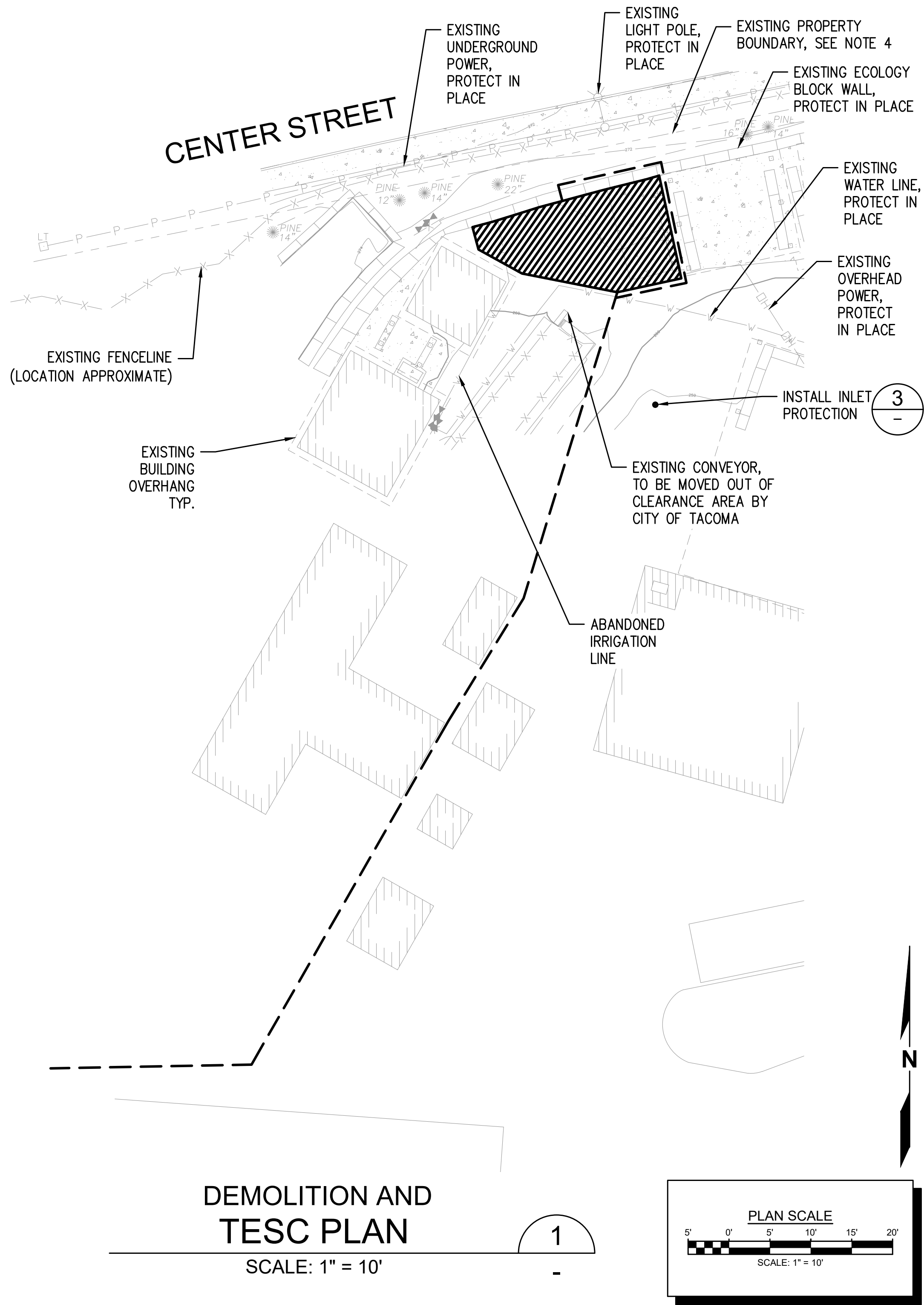
2

OF

14

BID SET





- LEGEND**
- DEMOLISH EXISTING PAVEMENT, 930 SF 2
  - ELECTRICAL TRENCHING, APPROX. 290 LF, SEE BLDN23-0004

- GENERAL NOTES**
- THE EXISTENCE, LOCATION AND CHARACTERISTICS OF UNDERGROUND AND OVERHEAD UTILITIES IS APPROXIMATE AND SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
  - TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY, PREPARED BY KPFF CONSULTING ENGINEERS, DATED MARCH 3, 2022.
  - ECOLOGY BLOCK WALL CONSTRUCTION IS UNKNOWN.
  - PROPERTY BOUNDARY LINES TAKEN FROM PIERCE COUNTY GIS DATA.
  - REFER TO SHEET G2 FOR FACILITY/CONSTRUCTION ENTRANCE LOCATIONS AND CONSTRUCTION SEQUENCING.

- EROSION AND SEDIMENT CONTROL NOTES**
- APPROVAL OF THIS EROSION/SEDIMENTATION 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.).
  - THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
  - THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
  - THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM OR ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
  - 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 AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
  - THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
  - THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
  - AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN SEDIMENT TRAP. 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.
  - STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

**kpff**  
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NO			REVISION			DATE	APPD	FINAL CONSTRUCTION CHECKED	DATE JUNE 2023	SCALE AS SHOWN	
								BY JPO	DESIGNED JPO	CHECKED WMA	
								DATE	DRAWN JPO	PROJECT NAME	
								FIELD BOOKS	DRAWING NAME D1		

CITY OF TACOMA PUBLIC WORKS DEPARTMENT		SPEC. NO.
ASPHALT BATCH PLANT STORAGE TANKS DEMOLITION PLAN		WBS NO.
		SHEET NO. D1
		SHEET 3 OF 14

BID SET

CENTER STREET

EXISTING FENCELINE  
(LOCATION APPROXIMATE)

EXISTING ECOLOGY  
BLOCK WALL

LIGHT FIXTURE, TYP.

VERTICAL ASPHALT  
STORAGE TANK,  
8' ID, TYP. OF 2

CONTAINMENT WALL,  
APPROX. 650 SF  
CONTAINMENT AREA,  
SEE NOTE 5

EXISTING PROPERTY  
BOUNDARY, SEE NOTE 6

REMOTE  
SUPPLY  
PIPE, TYP.

STAIRS LEADING  
DOWN TO  
CONTAINMENT

3" DRAIN/INTAKE,  
TYP.  
20" MANWAY,  
TYP.

CAGED  
LADDER  
TYP.

LANDING

REMOTE TANK  
FILL PORT, TYP.  
SEE 5

STAIRS LEADING UP  
TO LANDING, SEE  
GENERAL NOTE 1

EXISTING CONVEYOR,  
TO BE MOVED OUT OF  
CLEARANCE AREA BY  
CITY OF TACOMA

ABANDONED  
IRRIGATION  
LINE

EXISTING  
BUILDING  
OVERHANG

HOSE  
TROUGH,  
MOUNTED

PUMP AND  
CONTROL  
PANEL, TYP.

CONCRETE PEDESTAL  
FOR PUMP AND  
CONTROL PANEL, MIN  
12" THICKNESS, TYP.

TANK CONNECTION PIPE  
W/ (2) 2-WAY VALVES

HEAT CONTROL PANEL, TYP.

HOUSEKEEPING PAD,  
MIN 12" THICKNESS,  
TYP.  
SEE NOTE 5

CATWALK W/  
HANDRAILS

#3 - 3-WAY  
VALVE, TYP.

SUPPLY PIPE, TYP.

RECIRCULATION PIPE, TYP.

#2 - 3-WAY  
VALVE, TYP.

#1 - 3-WAY  
VALVE, TYP.

OUTLET  
STRAINER, TYP.

APPROX. LIMIT OF  
VEHICLE ACCESS AISLE

EXISTING  
OVERHEAD  
POWER

EXISTING  
WATER LINE

HANGER  
STAND,  
TYP.

STORM DRAINAGE  
PIPE AND  
CONCRETE SLAB

SITE PLAN

SCALE: 1" = 5'

1

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NO

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DATE

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FINAL  
CONSTRUCTION  
CHECKED

DATE  
JUNE 2023

SCALE  
AS SHOWN

DESIGNED  
JPO

CHECKED  
WMA

DATE

PROJECT NAME

DRAWN  
JPO

PROJECT NAME

FIELD BOOKS

DRAWING NAME

SITE PLAN



CITY OF TACOMA  
PUBLIC WORKS DEPARTMENT  
ASPHALT BATCH PLANT STORAGE TANKS  
SITE PLAN  
DOUBLE TANK

SPEC. NO.

WBS NO.

SHEET NO.

4

OF

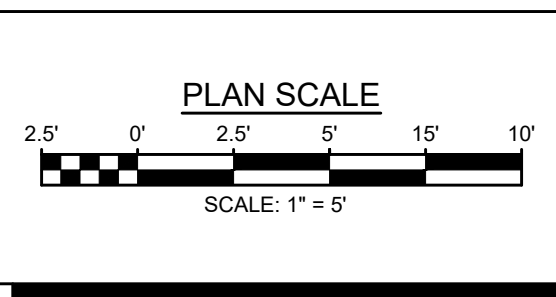
14

## NOTES

1. THE EXISTENCE, LOCATION AND CHARACTERISTICS OF UNDERGROUND AND OVERHEAD UTILITIES IS APPROXIMATE AND SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
2. TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY, PREPARED BY KPFF CONSULTING ENGINEERS, DATED MARCH 3, 2022.
3. ECOLOGY BLOCK WALL CONSTRUCTION IS UNKNOWN.
4. ALLOWANCE OF 7' CLEAR DISTANCE PROVIDED FOR SKIDSTER/FORKLIFT ACCESS AND 10' FOR TRUCK ACCESS TO EXISTING FACILITIES.
5. DESIGN INFORMATION FOR CONTAINMENT WALL AND FOUNDATIONS CONTAINED WITHIN BLDGN23-0004.
6. PROPERTY BOUNDARY LINES TAKEN FROM PIERCE COUNTY GIS DATA.

## GENERAL NOTES

1. DETAILS SHOWN ON THIS PLAN ARE FOR INFORMATION PURPOSES ONLY AND INDICATE ANTICIPATED MINIMUM LEVEL OF DETAILING REQUIRED FOR THE DESIGN OF THE ASPHALT STORAGE AND HANDLING SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ASPHALT STORAGE AND HANDLING SYSTEM DESIGN, PERMITTING, FABRICATION, INSTALLATION, AND TESTING AS NOTED ON SHEET G1.

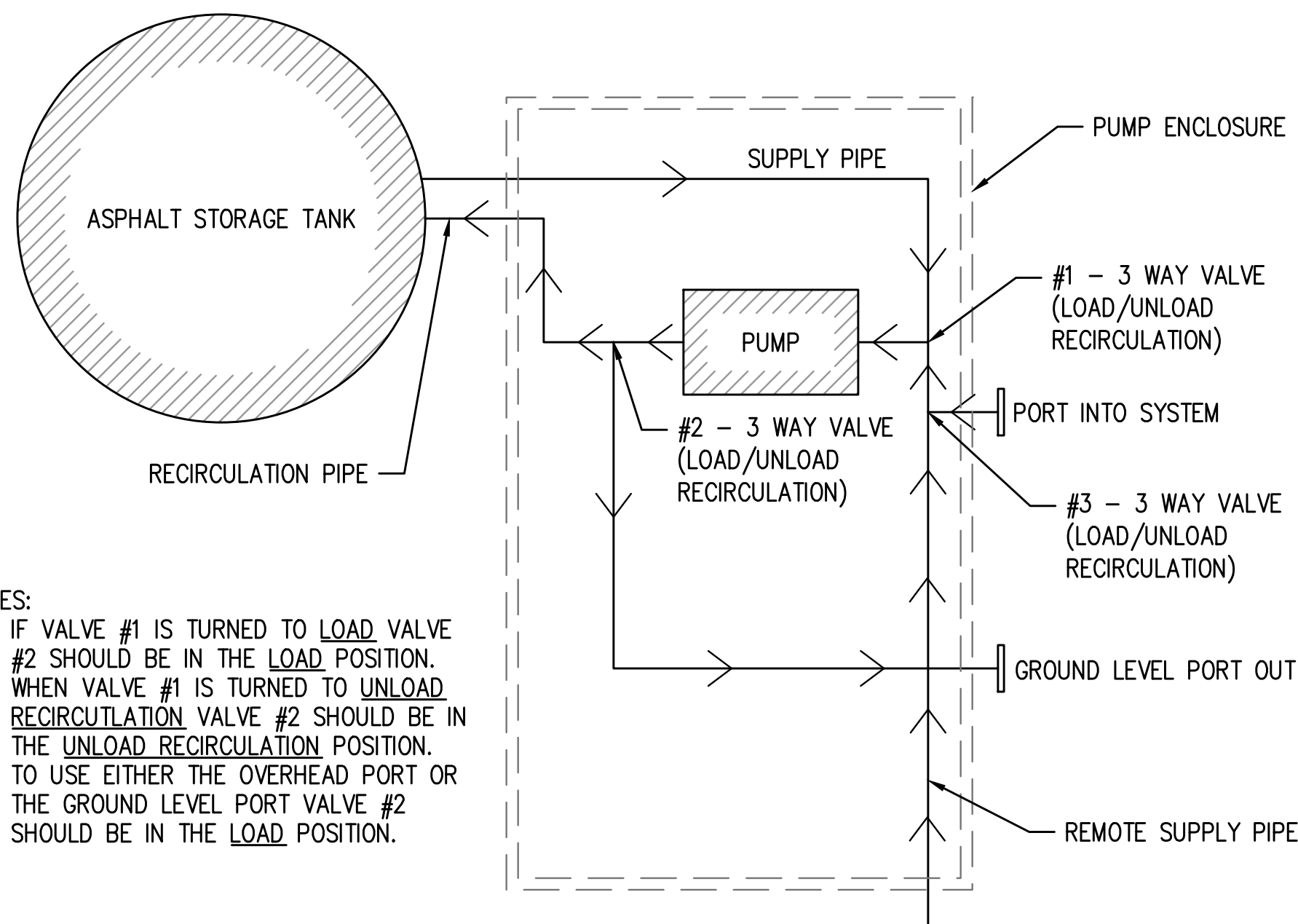


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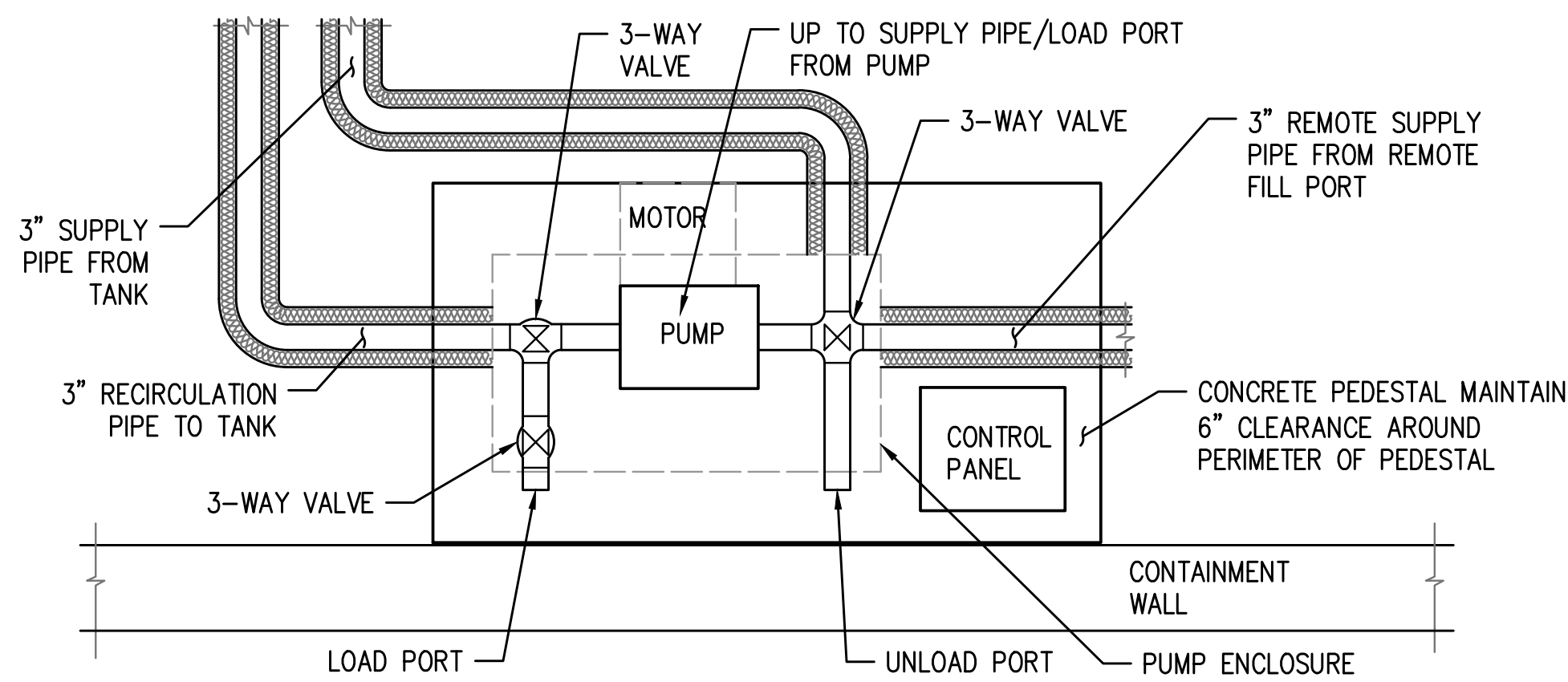




- NOTES:
1. IF VALVE #1 IS TURNED TO LOAD VALVE #2 SHOULD BE IN THE LOAD POSITION.
  2. WHEN VALVE #1 IS TURNED TO UNLOAD RECIRCULATION VALVE #2 SHOULD BE IN THE UNLOAD RECIRCULATION POSITION.
  3. TO USE EITHER THE OVERHEAD PORT OR THE GROUND LEVEL PORT VALVE #2 SHOULD BE IN THE LOAD POSITION.

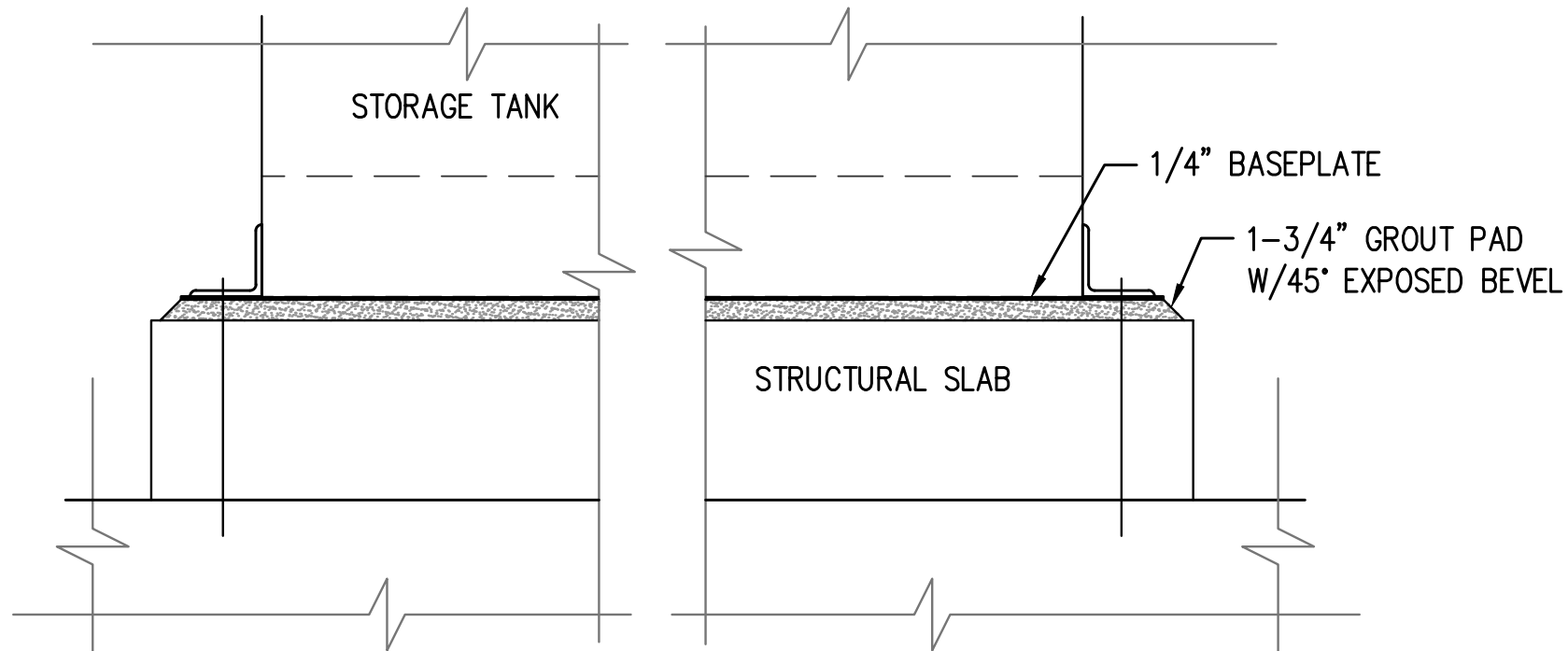
## PUMP SCHEMATIC

SCALE: NTS



## PUMP PLATFORM DETAIL

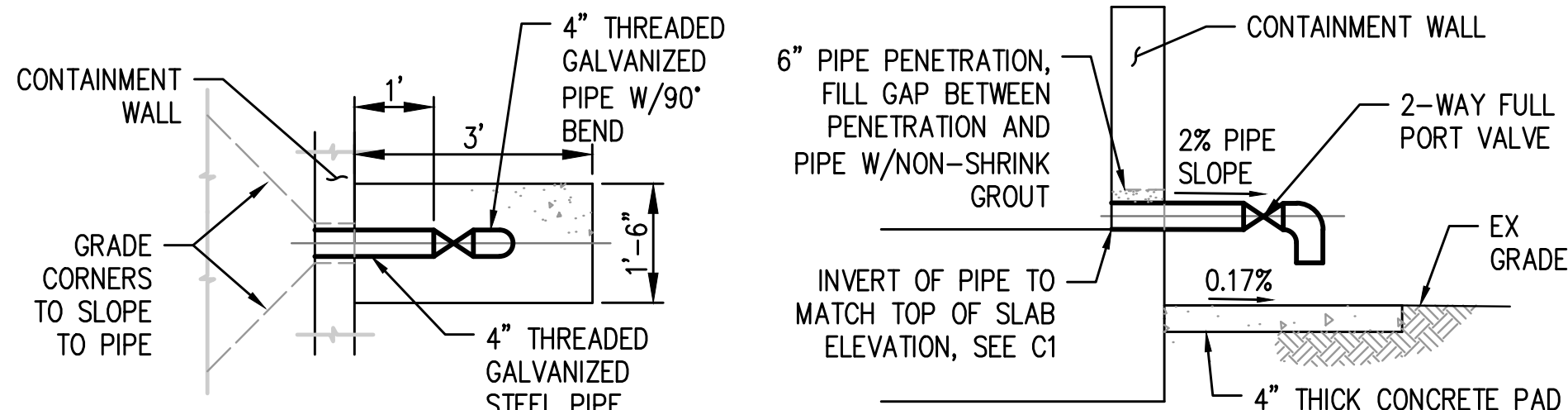
SCALE: NTS



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## BEARING PLATE AND GROUT PAD DETAIL

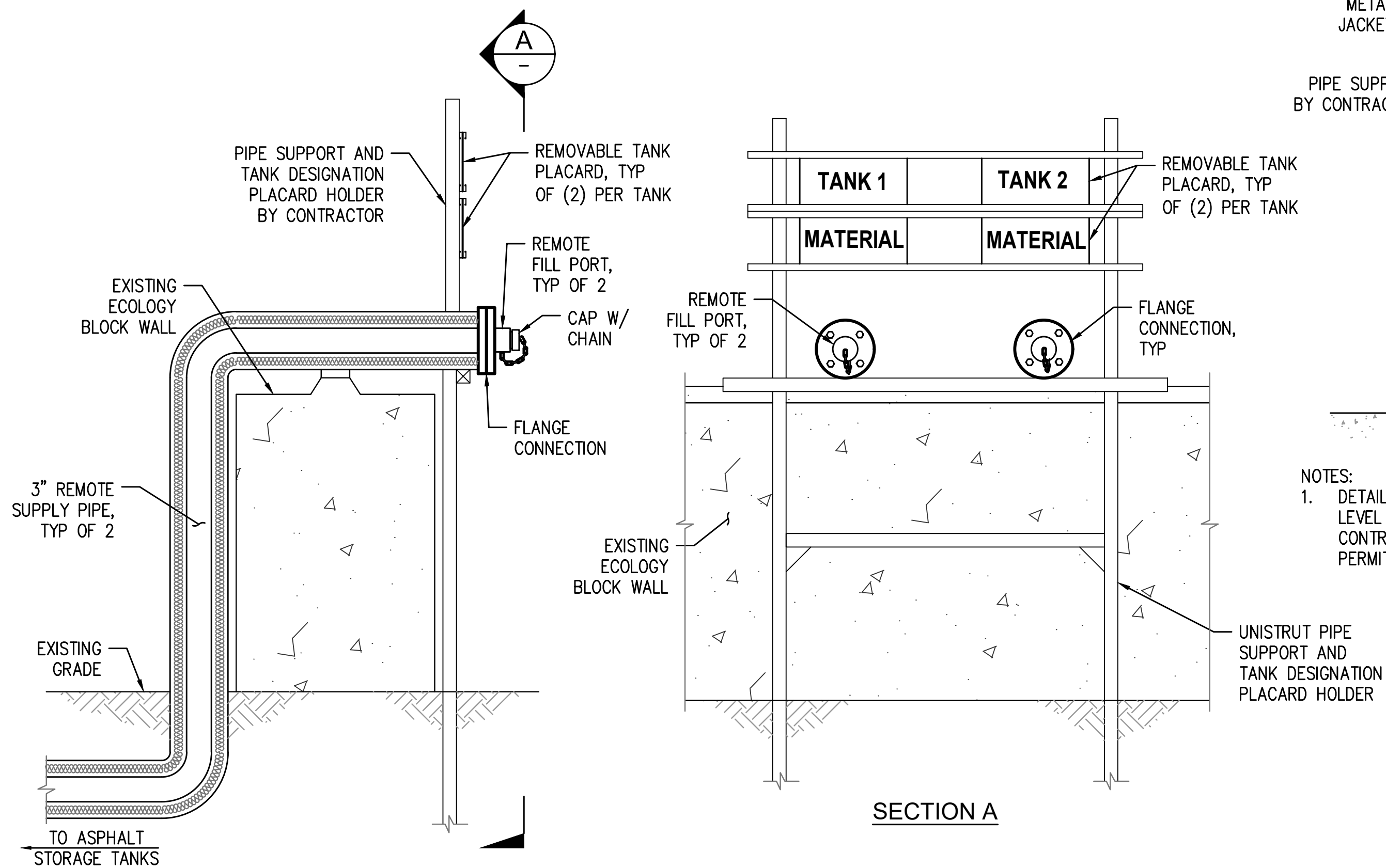
SCALE: NTS



## STORM DRAIN DETAIL

SCALE: NTS

C1, C2

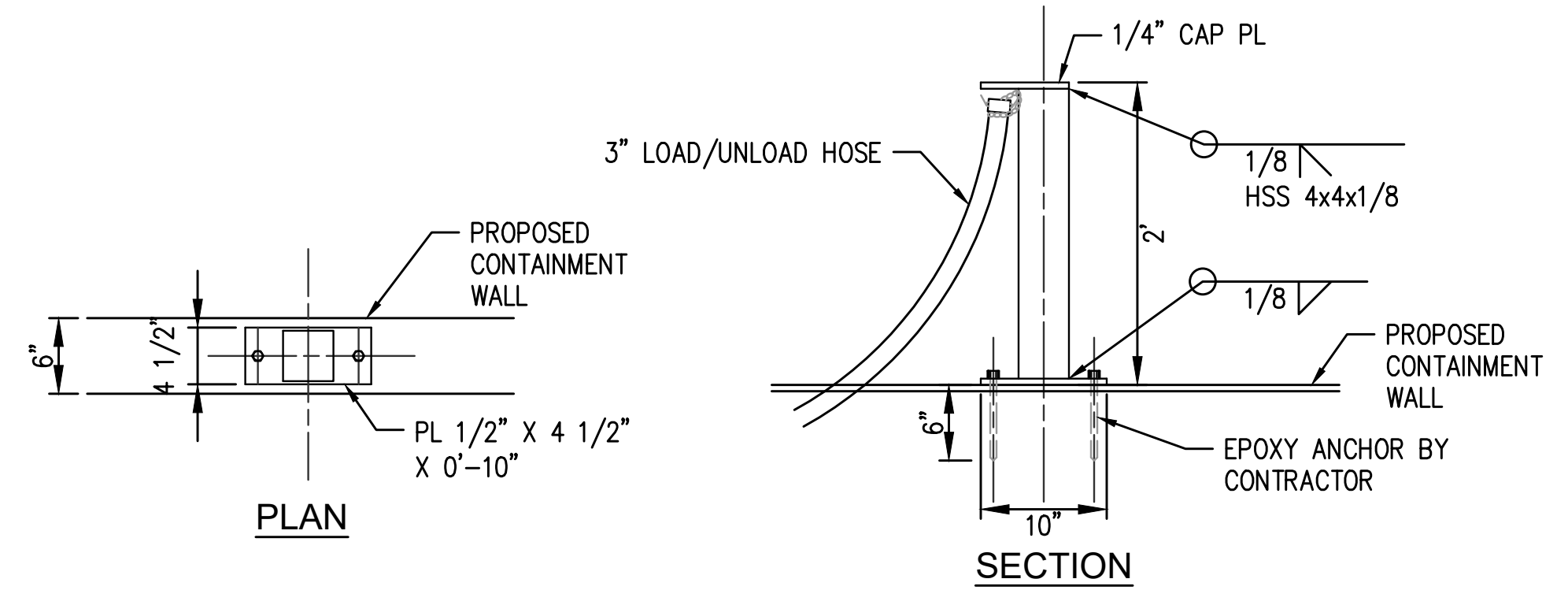


- NOTES:
1. UNISTRUT PIPE SUPPORT AND TANK DESIGNATION PLACARD HOLDER TO BE DESIGNED BY CONTRACTOR.
  2. ALLOW TANK IDENTIFICATION AND TANK MATERIAL PLACARDS TO SLIDE ALONG HORIZONTAL UNISTRUT CHANNELS ALONG TOP AND BOTTOM EDGES OF PLACARDS.
  3. STENCIL TANK IDENTIFICATION AND TANK MATERIAL ON PLACARDS IN BLACK LETTERING ON AN ORANGE BACKGROUND.
  4. ALL PAINT MARKINGS SHALL BE APPLIED WITH TWO COATS UNLESS OTHERWISE NOTED.

## REMOTE TANK FILL PORT DETAIL

SCALE: NTS

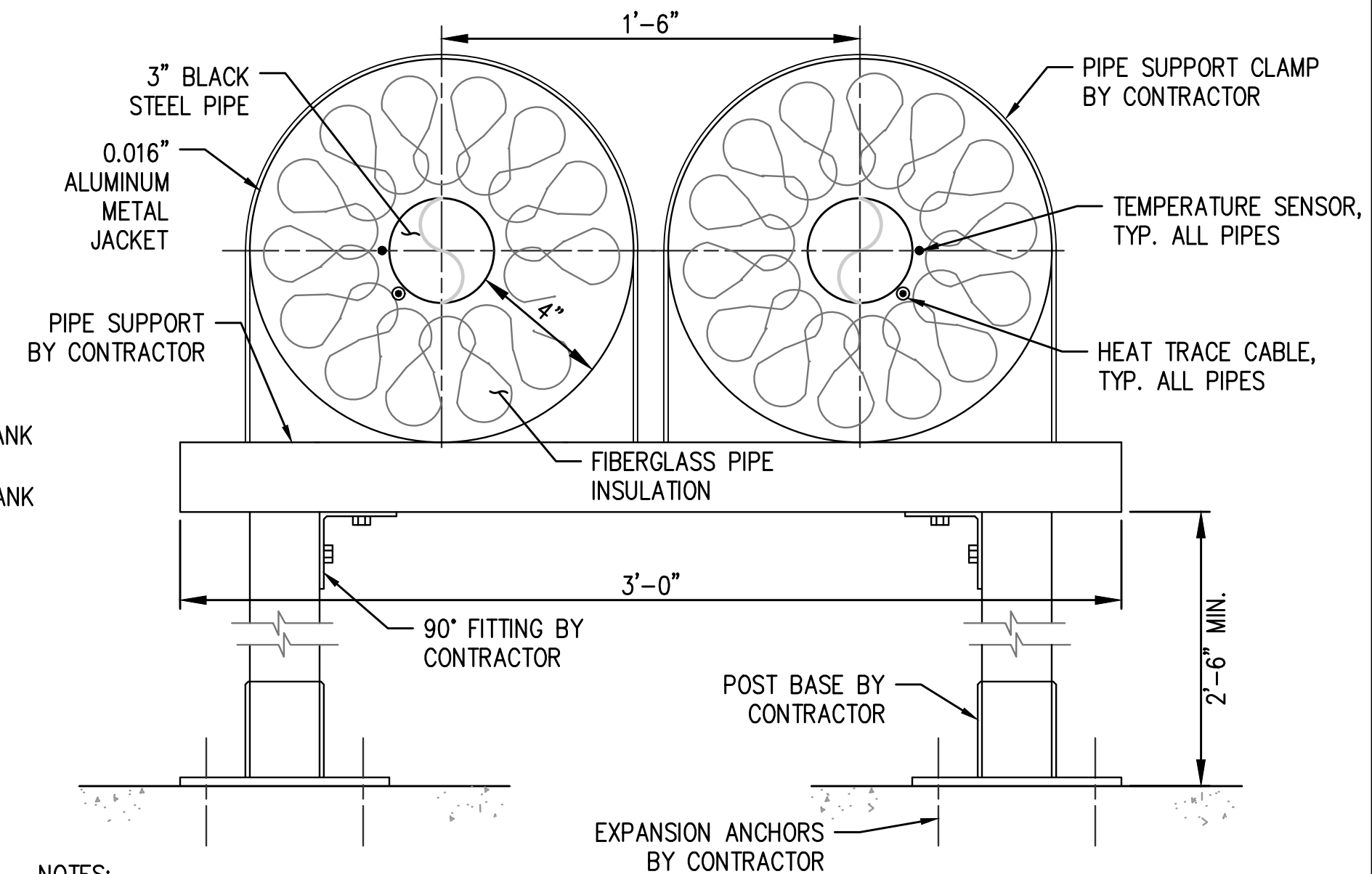
C1



## HANGER STAND DETAIL

SCALE: NTS

C1

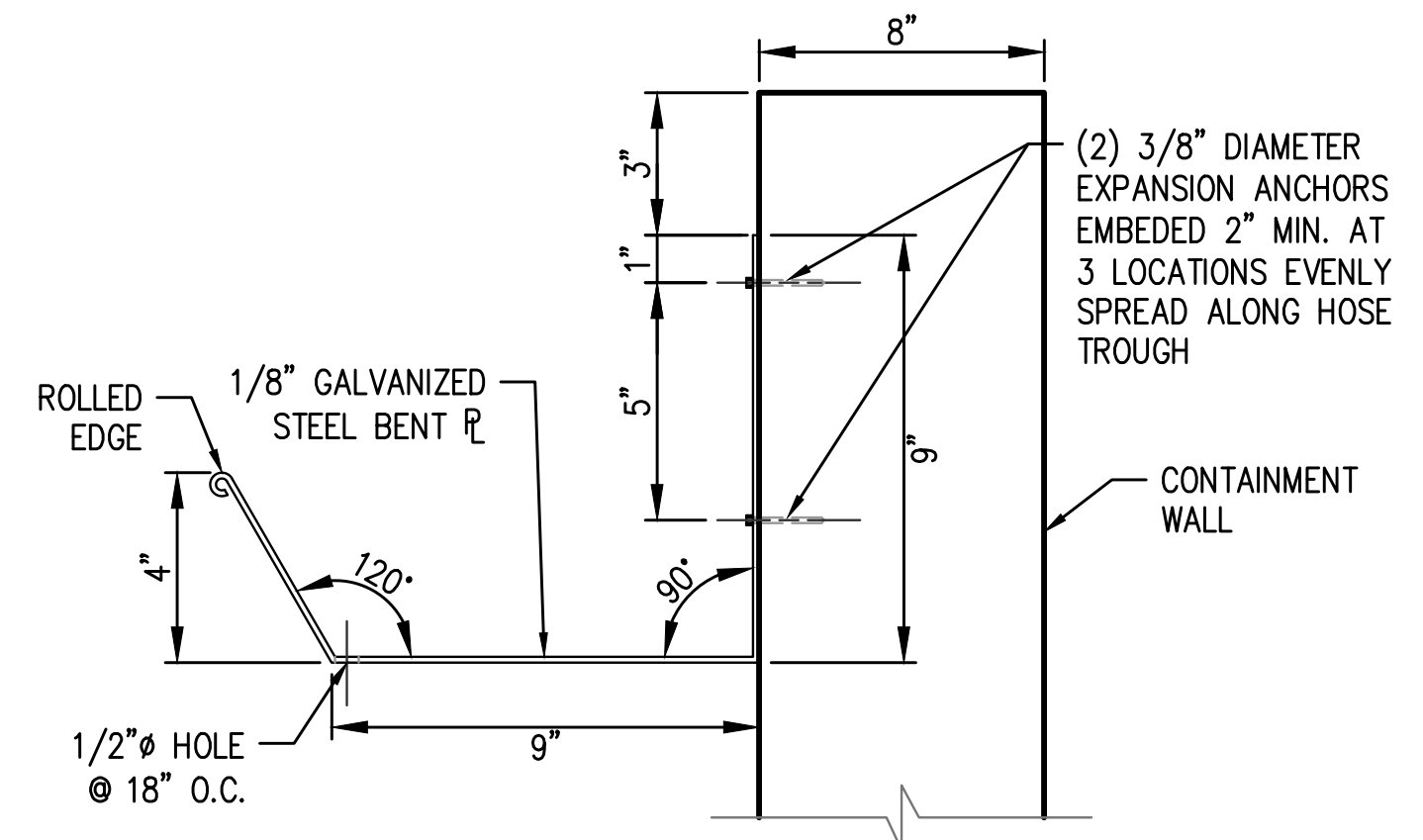


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## PIPE AND PIPE SUPPORT SECTION

SCALE: NTS

C1



## HOSE TROUGH SECTION

SCALE: NTS

C1

**kpff**

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(253) 396-0150 Fax (253) 396-0162



NO

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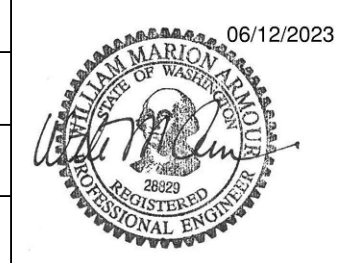
CHECKED

WMA

PROJECT NAME

DRAWING NAME

CIVIL DETAILS



06/12/2023

CITY OF TACOMA  
PUBLIC WORKS DEPARTMENT  
ASPHALT BATCH PLANT STORAGE TANKS  
CIVIL DETAILS

SPEC. NO.

WBS NO.

SHEET NO.

C3

SHEET

6

OF

14

BID SET



GENERAL STRUCTURAL NOTES

DESIGN LOADS

ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, 2018 EDITION, AS AMENDED BY CITY OF TACOMA.

SEISMIC LOADS – STORAGE TANK:  
EARTHQUAKE AND WIND LOADS ARE DEVELOPED USING AMERICAN PETROLEUM INSTITUTE(API) STANDARD 650, TWELFTH EDITION, MARCH 2013:

SITE CLASS D  
OCCUPANCY CATEGORY III  
SEISMIC DESIGN CATEGORY D  
Ss = 1.298 g  
S1 = 0.508 g  
SDS = 0.865 g  
SD1 = 0.508 g  
TL 6 seconds  
IE = 1.25

WIND LOADS:

Exposure Category C  
V3S= 115 mph

SOIL LOADS:

ALLOWABLE SOIL-BEARING PRESSURE 2000 psf

GENERAL NOTES

SUBMITTALS: SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO ANY FABRICATION OR CONSTRUCTION FOR ALL STRUCTURAL ITEMS, INCLUDING THE FOLLOWING. CONCRETE REINFORCEMENT AND EMBEDDED STEEL ITEMS.

IF THE SHOP DRAWINGS DIFFER FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF THE WASHINGTON STATE REGISTERED PROFESSIONAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN.

DEFERRED SUBMITTALS: PER IBC SECTION 106.3.4.2, DRAWINGS AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BEAR THE SEAL AND SIGNATURE OF THE WASHINGTON STATE REGISTERED PROFESSIONAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN AND SHALL BE SUBMITTED TO THE ENGINEER AND THE BUILDING DEPARTMENT FOR REVIEW PRIOR TO FABRICATION. SUBMITTED CALCULATIONS ARE FOR CURSORY REVIEW ONLY AND WILL GENERALLY NOT BE RETURNED. DEFERRED SUBMITTALS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

STAIRS AND HANDRAIL, ASPHALT STORAGE TANK AND ANCHORAGE, ACCESS CATWALKS

SPECIAL CONDITIONS: CONTRACTOR SHALL VERIFY ALL LEVELS, DIMENSIONS, AND EXISTING CONDITIONS IN THE FIELD BEFORE PROCEEDING. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR FIELD CHANGES PRIOR TO INSTALLATION OR FABRICATION. IN CASE OF DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN DIRECTION FROM THE ARCHITECT BEFORE PROCEEDING. DIMENSIONS NOTED AS PLUS OR MINUS (±) INDICATE UNVERIFIED DIMENSIONS AND ARE APPROXIMATE. NOTIFY ARCHITECT IMMEDIATELY OF CONFLICTS OR EXCESSIVE VARIATIONS FROM INDICATED DIMENSIONS. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS – DO NOT SCALE DRAWINGS. DIMENSIONS OF EXISTING CONDITIONS ARE TO BE FIELD-VERIFIED BY THE CONTRACTOR.

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS, EXISTING CONSTRUCTING AND SOIL EXCAVATIONS, AS REQUIRED, AND IN A MANNER SUITABLE TO FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE DRAWINGS AND MATERIALS HAVE ACHIEVED DESIGN STRENGTH. NO REINFORCING BARS IN EXISTING CONSTRUCTION SHALL BE OUT UNLESS DIRECTED TO BY THE ARCHITECT OR AS SHOWN ON THE DRAWINGS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.

CONCRETE

CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF CHAPTER 19 OF THE INTERNATIONAL BUILDING CODE.

THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS TO THE ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO PLACING ANY CONCRETE. THE MIX DESIGN SHALL BE IN CONFORMANCE WITH IBC 1905. THE SUBMITTAL SHALL INDICATE WHERE EACH CONCRETE MIX IS TO BE USED ON THE PROJECT, AS WELL AS THE MAXIMUM AGGREGATE SIZE OF EACH MIX. MAXIMUM AGGREGATE SIZE SHALL CONFORM TO THE PROJECT SPECIFICATIONS.

CONCRETE MIXES: CONCRETE MIXES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

f'c (psi)	TEST AGE (days)	USE
4,000	28	FOUNDATIONS, CONCRETE WALLS, HOUSEKEEPING PADS

CONCRETE MIXTURES SHALL CONFORM WITH THE MOST RESTRICTIVE REQUIREMENTS OF ACI 318-14 FOR EXPOSURE CLASSES F2, S0, W0 AND C1.

WATER-REDUCING ADMIXTURES MAY BE INCORPORATED IN CONCRETE MIX DESIGNS, BUT SHALL CONFORM TO ASTM C 494, AND BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER’S RECOMMENDATIONS. CACL OR OTHER WATER-SOLUBLE CHLORIDE ADMIXTURES SHALL NOT BE USED.

WATER/CEMENT RATIO SHALL BE MEASURED BY WEIGHT AND SHALL BE BASED ON THE TOTAL CEMENTITIOUS MATERIAL. WATER/CEMENT RATIO AND WATER CONTENT SHALL BE DETERMINED BY THE SUPPLIER BASED ON STRENGTH REQUIREMENTS AND SHALL NOT EXCEED THE MAXIMUM WATER/CEMENT RATIO AND/OR WATER CONTENT IF SHOWN ABOVE OR IN THE PROJECT SPECIFICATIONS.

FIELD-MEASURED SLUMP SHALL CONFORM TO THE SUBMITTED CONCRETE MIX DESIGN. TOLERANCE OF SLUMP SHALL CONFORM TO ASTM C 94.

AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C 260 SHALL BE USED IN ALL CONCRETE MIXES FOR FLATWORK WHICH IS EXPOSED TO WEATHER. THE AMOUNT OF ENTRAINED AIR SHALL BE 5 PERCENT ± 1 1/2 PERCENT BY VOLUME. THE AMOUNT OF ENTRAINED AIR SHALL BE MEASURED IN THE FIELD AT THE DISCHARGE FROM THE TRUCK.

HOT/COLD WEATHER PLACEMENT: DO NOT PLACE CONCRETE ON FROZEN GROUND OR AGAINST FROSTED REINFORCING STEEL OR FORMS. DO NOT MIX OR PLACE CONCRETE WHILE THE ATMOSPHERIC TEMPERATURE IS BELOW 40° F. IF AIR TEMPERATURE EXCEEDS 90°F, PROVIDE WATER SPRAY OR OTHER APPROVED METHODS TO COOL CONTACT SURFACES TO LESS THAN 90°F. HOT AND COLD-WEATHER CONCRETE PLACEMENT SHALL FOLLOW THE RESPECTIVE RECOMMENDATIONS IN ACI 305R AND ACI 306R.

REINFORCING STEEL

DEFORMED BARS	ASTM A 615, GRADE 60
---------------	----------------------

REINFORCING SHALL BE SUPPORTED AS SPECIFIED BY THE PROJECT SPECIFICATIONS AND THE C.R.S.I. MANUAL OF STANDARD PRACTICE, 27TH EDITION. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI STANDARD OF PRACTICE AS OUTLINED IN "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, ACI 315."

LAP ALL REINFORCING BARS AS NOTED ON THE DRAWINGS. WHERE SPLICE LENGTH IS NOT SHOWN, USE TYPE LB (LBT FOR TOP BARS) SPLICE PER DEVELOPMENT AND SPLICE LENGTH SCHEDULE. MECHANICAL OR WELDED BUTT SPLICES SHALL BE USED SUBJECT TO ENGINEER’S APPROVAL. MECHANICAL SPLICES CALLED OUT ON THE PLANS SHALL BE TYPE 1, UNLESS OTHERWISE NOTED. TYPE 1 SPLICES SHALL DEVELOP 125 PERCENT OF THE YIELD CAPACITY OF THE SPLICED BARS IN BOTH TENSION AND COMPRESSION. TYPE 2 SPLICES SHALL DEVELOP THE SPECIFIED TENSILE STRENGTH OF THE SPLICED BARS IN TENSION IN ADDITION TO MEETING TYPE 1 SPLICE REQUIREMENTS.

REINFORCING STEEL SHALL HAVE PROTECTION AS FOLLOWS, UNLESS NOTED OTHERWISE:

USE	COVER
NONSTRUCTURAL SLAB-ON-GRADE	MID-DEPTH
WALL BARS: INTERIOR FACES	3/4"
EXPOSED TO EARTH OR WEATHER	1 1/2" (#5 AND SMALLER) 2" (#6 AND LARGER)
FOOTING: BOTTOM BARS	3" (CAST AGAINST EARTH)
TOP BARS	1 1/2"
	2"
SIDE BARS	2"

NON-SHRINK GROUT: BASE PLATE GROUT SHALL BE NON-SHRINK TYPE WITH MINIMUM F'C = 8,000 psi.

SOILS

SOILS: SEE THE GEOTECHNICAL REPORT BY GEOENGINEERS, DATED JULY 14, 2022, FOR MORE COMPLETE INFORMATION. EARTHWORK MATERIAL, BACKFILL AND COMPACTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT. EXCAVATE EXISTING MATERIALS TO ACCOMMODATE THE NEW FOUNDATION SLAB AND PROVIDE COMPACTED STRUCTURAL FILL AS REQUIRED IN ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS. PREPARED BEARING SURFACES MUST BE OBSERVED BY THE GEOTECHNICAL ENGINEER TO CONFIRM THAT FOOTINGS ARE FOUNDED IN DENSE GLACIAL SOILS.

SPECIAL INSPECTION SCHEDULE ESTABLISHED PER 2018 IBC SECTION 109 & CHAPTER 17			
ITEM	CONTINUOUS INSPECTION	PERIODIC INSPECTION	COMMENTS
SOILS			
GRADING, EXCATATION, AND FILL		X	
FINAL FOUNDATION PREP		X	
CONCRETE			
REINFORCEMENT PLACEMENT		X	
PREP OF TEST SPECIMENS	X		
ANCHOR BOLTS	X		
CONCRETE PLACEMENT	X		
CURING		X	
EPOXY DOWEL REBAR	X		

INSPECTION SCHEDULE NOTES:

- THE ITEMS CHECKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS, REFER TO THE STRUCTURAL NOTES AND THE NOTES BELOW. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE ENGINEER, OWNER, CONTRACTOR AND BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET THE PROJECT SPECIFICATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- SPECIAL INSPECTION IS NOT REQUIRED FOR WORK PERFORMED BY AN APPROVED FABRICATOR PER IBC SECTION 1704.2.2.
- CONTINUOUS SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON THE SITE AT ALL TIMES OBSERVING THE WORK REQUIRING SPECIAL INSPECTION (IBC 1702). PERIODIC SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT TIME INTERVALS NECESSARY TO CONFIRM THAT ALL WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE.

STRUCTURAL ABBREVIATIONS

B/	BOTTOM OF
BOT	BOTTOM
CJ	CONTROL JOINT
CL	CENTETRLINE
CLR	CLEAR
CONC	CONCRETE
DIA	DIAMETER
DWG(S)	DRAWING(S)
EL	ELEVATION
EMBED	EMBEDMENT
EW	EACH WAY
FT	FEET
FTG	FOOTING
HORIZ	HORIZONTAL
IBC	INTERNATIONAL BUILDING CODE
LOCNS	LOCATIONS
MAX	MAXIMUM
MIN	MINIMUM
OC	ON CENTER
PSI	POUNDS PER SQUARE INCH
REINF	REINFORCING
T/	TOP OF
TOW	TOP OF WALL
TOF	TOP OF FOOTING
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL

BID SET



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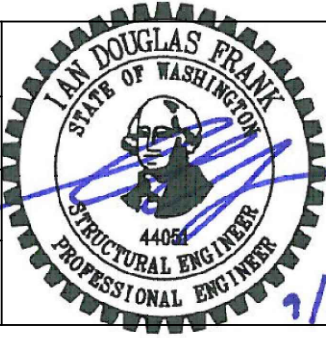
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REVISION

DATE

APPD

FINAL CONSTRUCTION CHECKED	DATE SEPT 2023	SCALE AS SHOW!
BY	DESIGNED JDS	CHECKED IDF
DATE	DRAWN JDS	PROJECT NAME
FIELD BOOKS	DRAWING NAME	STRUCTURAL NOTES

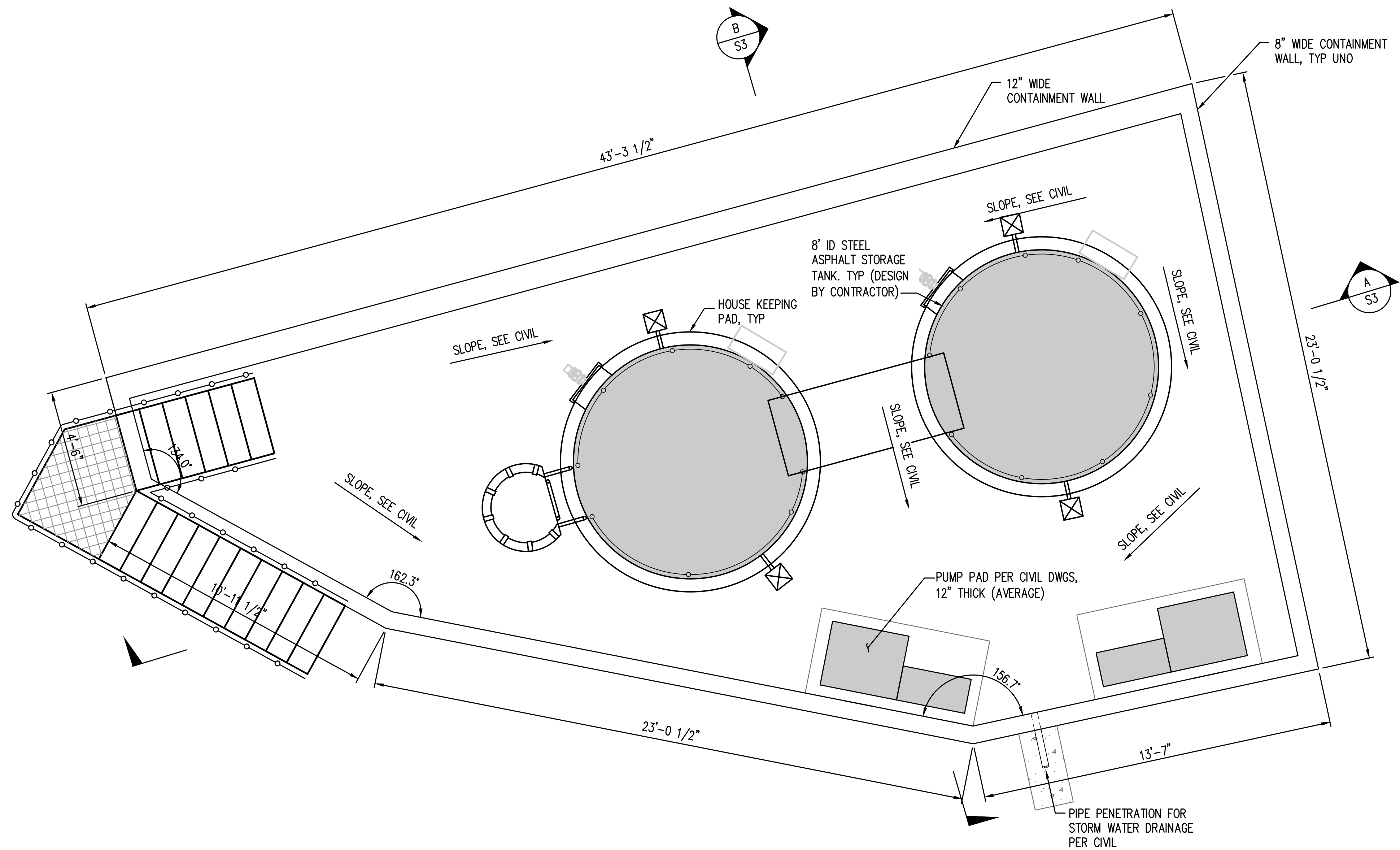


2/8/23

CITY OF TACOMA  
PUBLIC WORKS DEPARTMENT  
ASPHALT BATCH PLANT STORAGE TANKS  
STRUCTURAL NOTES

SPEC. NO.	
WBS NO.	
SHEET NO.	S1
SHEET	7 OF 14





STORAGE TANK  
FOUNDATION PLAN

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

NOTES:

1. REFER TO CIVIL DRAWINGS FOR TOP OF WALL ELEVATIONS, SLAB ELEVATIONS, AND SLOPE

**kpff**

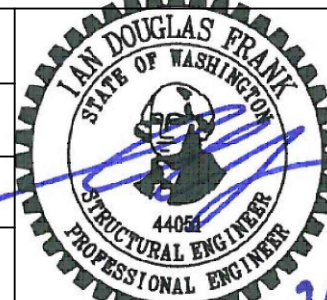
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NO	REVISION	DATE	APPD

FINAL CONSTRUCTION CHECKED	DATE SEPT 2023
BY JDS	CHECKED IDF
DATE JDS	PROJECT NAME

SCALE AS SHOWN	DRAWING NAME FOUNDATION PLAN
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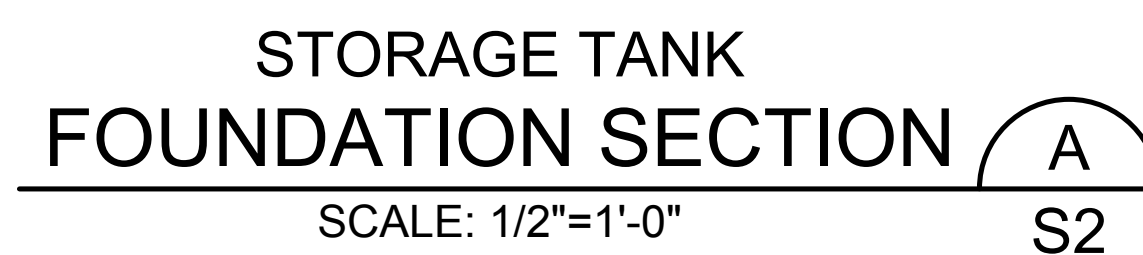


CITY OF TACOMA PUBLIC WORKS DEPARTMENT ASPHALT BATCH PLANT STORAGE TANKS FOUNDATION PLAN
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SPEC. NO.	
WBS NO.	
SHEET NO.	S2
SHEET	8 OF 14

BID SET

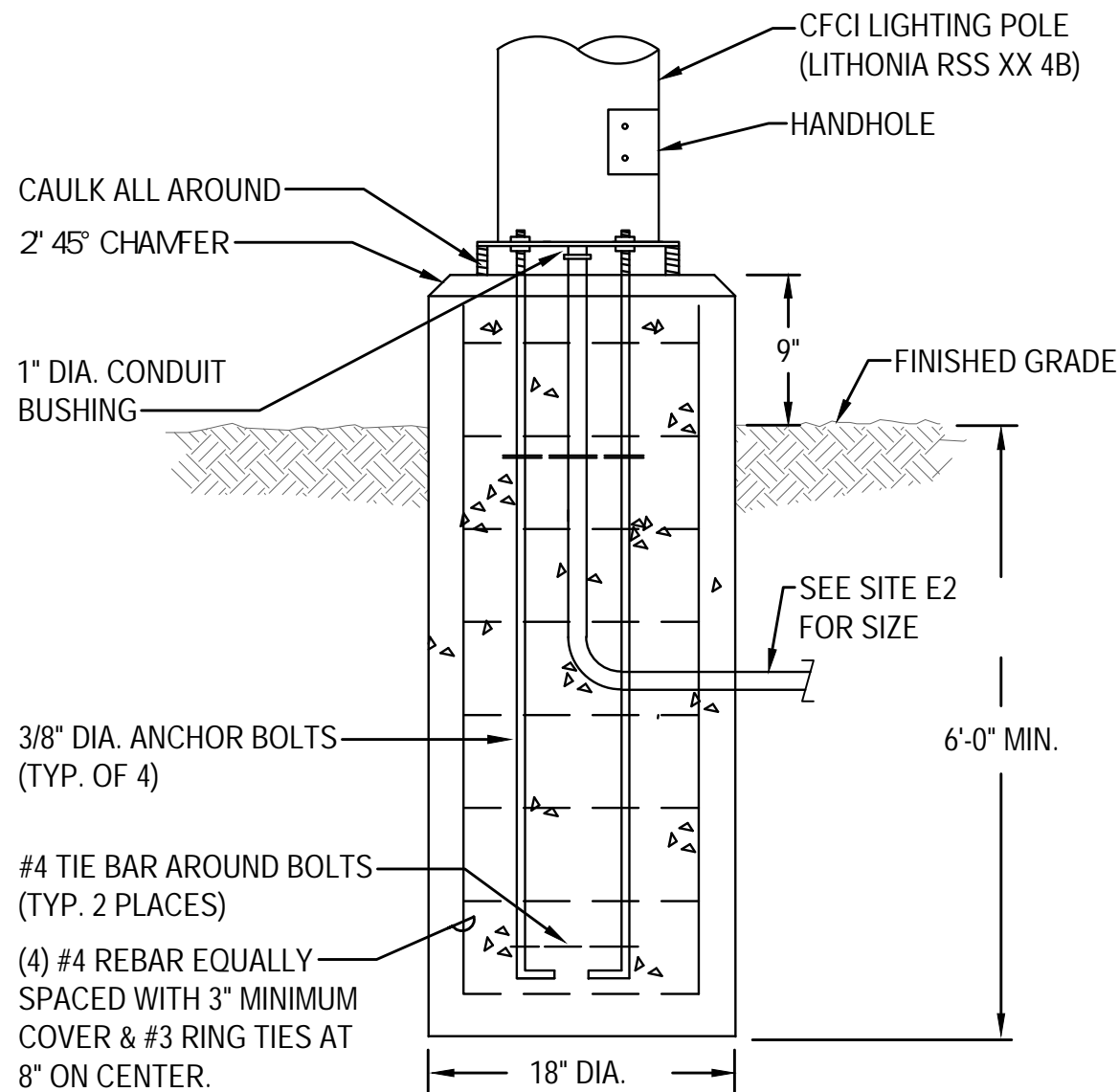






# ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	POLE LIGHT FIXTURE (ARROW INDICATES DIRECTION OF AIMING FOR OPTICS)
	DUPLEX RECEPTACLE (G INDICATES GROUND FAULT CIRCUIT INTERRUPTER, W INDICATES WEATHERPROOF)
	RACEWAY CONCEALED UNDERGROUND OR UNDER FLOOR SLAB
	METER
	GROUNDING SYSTEM PER CODE
	JUNCTION BOX - SIZE PER CODE
	FUSED DISCONNECT SWITCH
	277/480 VOLT PANELBOARD
	EXISTING PANELBOARD TO BE RETAINED
	MAIN DISTRIBUTION BOARD
	ENCLOSED CIRCUIT BREAKER, AMPERES AS INDICATED
	HANDHOLE
MISCELLANEOUS	
	CONSTRUCTION NOTES
	DEMOLITION NOTES
	W INDICATES WEATHERPROOF FOR ALL DEVICES, PROVIDE LOCKING COVER ON RECEPTACLES.
	ALL DEVICES WITH LIGHT LINE WEIGHT INDICATES EXISTING TO BE RETAINED
	ALL DEVICES WITH DASH LINE INDICATES EXISTING TO BE REMOVED
	MECHANICAL EQUIPMENT CONNECTION



## POLE BASE DETAIL

SCALE: DIAGRAMMATIC

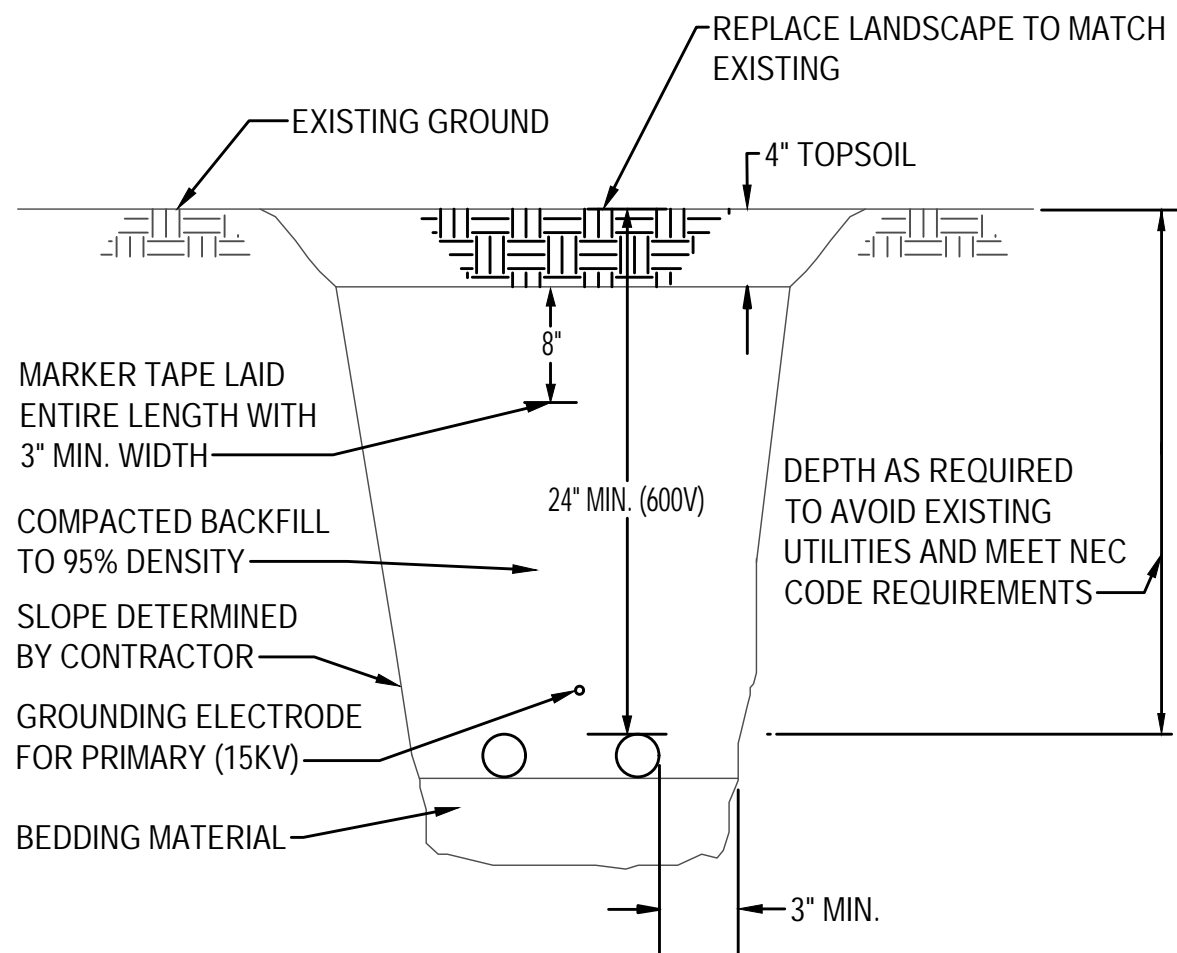
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GENERAL ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
EC	ELECTRICAL CONTRACTOR
GC	GENERAL CONTRACTOR
GFCI	GOVERNMENT FURNISHED, CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED, GOVERNMENT INSTALLED
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
REQ'D	REQUIRED
W	WEATHERPROOF

ELECTRICAL ABBREVIATIONS	
AIC	AMPERE INTERRUPTING CAPACITY
AFC	AVAILABLE FAULT CURRENT
C.	CONDUIT
CU	COPPER
EMT	ELECTRICAL METALLIC TUBING
FLA	FULL LOAD AMPERE(S)
G	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HP	HORSEPOWER OR HEAT PUMP
KVA	KILOVOLT-AMPERE(S)
KW	KILOWATT(S)
LED	LIGHT-EMITTING DIODE(S)
LTG	LIGHTING
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
PH	PHASE
UG	UNDER GROUND
V	VOLT(S)
VA	VOLT-AMPERE(S)
XFMR	TRANSFORMER

## GENERAL NOTES (APPLY TO ALL SHEETS)

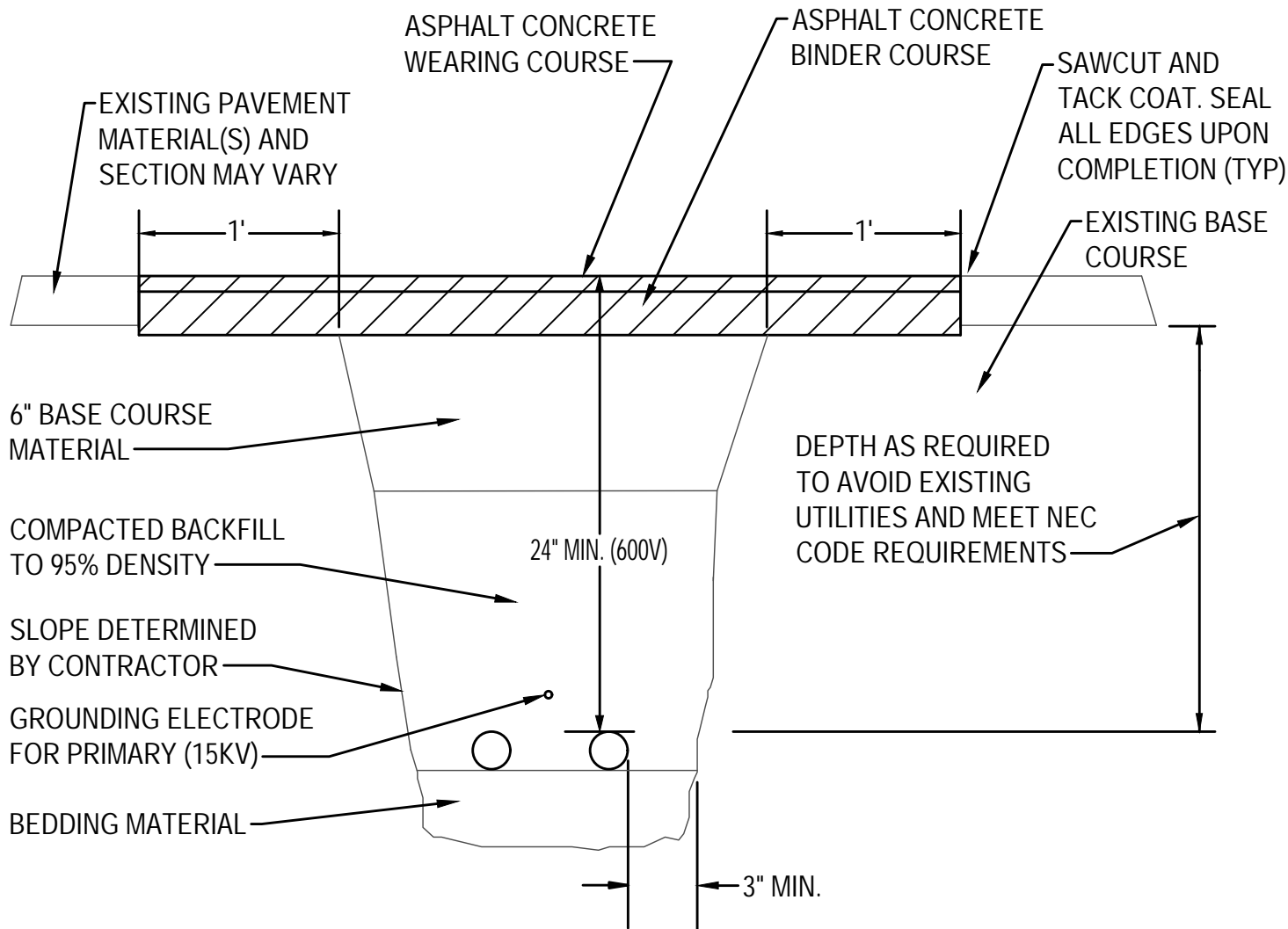
- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SITE AND CONDITIONS, AND SHALL NOT RELY SOLELY ON REVIEW OF THE BIDDING DOCUMENTS IN DETERMINING THE EXTENT OF WORK REQUIRED. COORDINATION OF THESE DRAWINGS WITH REQUIREMENTS FOR CONTRACT WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND UTILITY FEES.
- PROVIDE CONDUIT SUPPORTS AS REQUIRED.
- PROVIDE A GROUND WIRE AND DEDICATED NEUTRAL FOR EACH CIRCUIT.
- ALL DISCONNECTS SHALL BE THE HEAVY DUTY TYPE.
- SEE EACH SHEET FOR ADDITIONAL GENERAL NOTES THAT ARE SPECIFIC TO AN AREA OR SHEET.
- ALL CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO STRUCTURE.
- THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL CMU/CONCRETE WALLS AND BRICK WALLS FOR CABLE ROUTING, CORE DRILLING AND ALL WORK REQUIRED TO FACILITATE A COMPLETE AND FULLY FUNCTIONAL SYSTEM WHETHER SPECIFICALLY INDICATED OR NOT.
- ALL SHUTDOWN AND CHANGE-OVER TIME SHALL BE KEPT TO A MINIMUM. ALL BUILDING SYSTEM SHUT DOWNS SHALL BE DISCUSSED AND COORDINATED BETWEEN THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS. THE CONTRACTOR SHALL SUBMIT A OUTAGE PROPOSAL TO THE OWNER FOR APPROVAL. NO BUILDING SYSTEM SHUTDOWNS WILL BE ALLOWED WITHOUT BEING SCHEDULED AND APPROVED BY THE OWNER.
- ALL CIRCUIT EXTENSIONS AND NEW RACEWAYS SHALL BE CONCEALED. NOTIFY PROJECT MANAGER FOR APPROVAL. PRIOR TO INSTALLATION OF ANY SURFACE MOUNTED RACEWAY WHERE CONCEALMENT IS NOT POSSIBLE. ROUTE ALL SURFACE METAL RACEWAY AS INCONSPICUOUSLY AS POSSIBLE AND PAINT TO MATCH ADJACENT SURFACE.
- SEAL ALL EDGES OF CONCRETE UPON COMPLETION OF TRENCHING AND BACKFILL.
- PANEL DESIGNATIONS AND CIRCUIT NUMBERS ARE ONLY INDICATED ON THE DRAWINGS FOR REFERENCE BY THE ELECTRICAL CONTRACTOR. THE E.C. IS RESPONSIBLE TO PROVIDE ALL CONDUIT, WIRING, JUNCTION BOXES AND MISCELLANEOUS ACCESSORIES TO ACCOMMODATE INSTALLATION AND CONNECTION OF ALL DEVICES INDICATED ON THE CONTRACT DOCUMENTS. ALL WIRING HOMERUNS SHALL BE IN HARD CONDUIT BACK TO THE DESIGNATED PANELBOARD. ALL JUNCTION BOXES SHALL BE LABELED IDENTIFYING THE PANELBOARD AND CIRCUIT CONTAINED WITHIN. THERE SHALL BE NO MORE THAN (3) CIRCUITS PER HOMERUN. MULTI-WIRE CIRCUITS ARE NOT ALLOWED. EACH CIRCUIT SHALL CONTAIN A DEDICATED NEUTRAL UNLESS SPECIFICALLY ALLOWED BY THE ENGINEER. ALL WIRING SHALL BE SIZED ACCORDING TO THE AMPACITY OF THE CIRCUIT BREAKER INDICATED ON THE PANEL SCHEDULE. ALL CONDUITS SHALL BE SIZED PER NEC CODE BASED ON THE CONDUCTOR SIZE, TYPE, QUANTITY AND MINIMUM FILL REQUIREMENTS. CIRCUITS OVER 120' FOR 120V AND 250' FOR 277V SHALL BE UPSIZED ONE WIRE SIZE TO ACCOUNT FOR VOLTAGE DROP. E.C. IS RESPONSIBLE TO SHOW ALL JUNCTION BOX LOCATIONS, CONDUIT ROUTING AND HOMERUNS ON A SET OF AS-BUILT DRAWINGS.



## UNDERGROUND - LANDSCAPE AREAS

SCALE: DIAGRAMMATIC

1



## UNDERGROUND - ASPHALT AREAS

SCALE: DIAGRAMMATIC

2

GENERAL NOTES FOR LIGHTING FIXTURE SCHEDULE						
1. PROVIDE BALLASTS TO ACCOMMODATE DUAL LEVEL SWITCHING FOR ALL 3 AND 4 LAMP FIXTURES.						
2. SEE DRAWINGS FOR EMERGENCY LIGHTING FIXTURES.						
3. FOR LIGHTING CONTROLS WHICH INCLUDE DAYLIGHT, OCCUPANCY SENSORS AND TIME CLOCK CONTROLS, THE ELECTRICAL CONTRACTOR SHALL PROVIDE TESTING OF THE CONTROL DEVICES, COMPONENTS, EQUIPMENT AND SYSTEMS TO MAKE SURE THEY ARE CALIBRATED, ADJUSTED AND OPERATE IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS. SEQUENCES OF OPERATION SHALL BE FUNCTIONALLY TESTED IN THE PRESENCE OF THE ENGINEER. A COMPLETE REPORT OF TEST PROCEDURES AND RESULTS SHALL BE PREPARED AND FILED WITH THE OWNER.						
LIGHTING FIXTURE SCHEDULE						
SYMBOL	FIXTURE DESCRIPTION	MANUFACTURER/MODEL #	LUMENS	V	W	MOUNTING & REMARKS
AL1	LED AREA SITE LIGHTING	COOPER - MCGRAW-EDISON# GLEON-SA3D-750-U-T4FT-ADJA-XX-DIM-BPC	18005	120/277	191	INSTALL PER MANUFACTURER'S RECOMMENDATIONS. SEE POLE BASE DETAIL THIS SHEET FOR REQUIREMENTS. MOUNT TO THE TOP OF A 2\"/>

**kpff**

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NO

REVISION

DATE

APPD

FINAL CONSTRUCTION CHECKED

BY

DATE

DESIGNED

CHECKED

DRAWN

PROJECT NAME

DRAWING NAME

ELECTRICAL LEGEND

DATE

SCALE

NTS

BH

221-322

REGISTERED PROFESSIONAL ENGINEER

CITY OF TACOMA

PUBLIC WORKS DEPARTMENT

ASPHALT BATCH PLANT STORAGE TANKS

ELECTRICAL LEGEND AND DETAILS

DOUBLE TANK

SHEET NO.

E1

10 OF 14

BID SET





ELECTRICAL SITE PLAN 1  
SCALE: 1" = 20'-0"

GENERAL NOTES

- 1. SEE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- 2. SEE ONE LINE DIAGRAM ON E3 FOR FEEDER SIZES.
- 3. ALL LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.

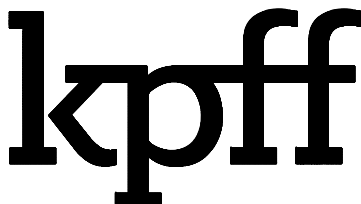
CONSTRUCTION NOTES

- 1. SECONDARY ELECTRICAL FEED BY TPU. TRENCHING AND CONDUIT BY EC. COORDINATE WORK AND ROUTING WITH TPU.
- 2. PROVIDE CONNECTION TO PUMP CONTROL PANEL, VFD AND MOTOR. INCLUDE SEPARATE 120V CONNECTION TO HEAT TRACE FOR EACH PUMP FROM PUMP CONTROL PANEL.
- 3. PROVIDE CONNECTION TO CONTROLLER, HEATER AND PUMP AS REQUIRED BY MANUFACTURER.
- 4. PROVIDE A NEW 25' POLE WITH STAINLESS STEEL FINISH AND POLE BASE WITH FIXTURE. SEE DETAIL 3 ON SHEET E1 FOR POLE BASE INSTALLATION REQUIREMENTS.
- 5. PROVIDE UNISTRUT AND MOUNTING HARDWARE AS REQUIRED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH TPU.
- 6. PROVIDE GFCI, WEATHERPROOF, LOCKABLE WHILE-IN-USE DUPLEX RECEPTACLE AT 18" ABOVE FINISHED GROUND. MOUNT ALONG CONCRETE WALL. CORE DRILL AND SEAL PENETRATION AS REQUIRED. ROUTE BACK TO NEW TANK PANEL TO CIRCUIT INDICATED.
- 7. PROVIDE A 233-LA OLD CASTLE VAULT. COORDINATE EXACT LOCATION OF PULL VAULT WITH CIVIL ENGINEER PRIOR TO INSTALLATION.
- 8. REPLACE EXISTING 400A FUSED DISCONNECT AS INDICATED ON E3.
- 9. ROUTE CONDUIT UP WALL AND LB INTO ROOM ABOVE MDP.

EQUIPMENT CONNECTION SCHEDULE

EQUIP.	VOLT/PH	LOAD			CIRCUIT		CONDUIT/WIRE SIZE	MAGNETIC STARTER (NOTE 1)	FUSED DISC. (NOTE 1)	MIN. AIC. (AMPS)	REMARKS
		KVA	MCA	HP	PANEL	BKR					
AG- 1	480/3	11.634	14	10	TH	14,16,18	3/4" C., (4) #10 & (1) #10 GND	EC	EC	7,000	
AG- 2	480/3	11.634	14	10	TH	20,22,24	3/4" C., (4) #10 & (1) #10 GND	EC	EC	7,000	
H- 1	480/3	24	28.9	---	TH	1,3,5	3/4" C., (4) #8 & (1) #10 GND	EC	EC	7,000	
H- 2	480/3	24	28.9	---	TH	2,4,6	3/4" C., (4) #8 & (1) #10 GND	EC	EC	7,000	
HT- 1	120/1	1.5	12.5	---	TL	3	1/2" C., (2) #12 & (1) #12 GND	EC	EC	5,000	
HT- 2	120/1	1.5	12.5	---	TL	5	1/2" C., (2) #12 & (1) #12 GND	EC	EC	5,000	
P- 1	480/3	11.634	14	15	TH	7,9,11	3/4" C., (4) #8 & (1) #10 GND	EC	EC	7,000	CONNECT PANEL AND ACCESSORIES
P- 2	480/3	11.634	14	15	TH	8,10,12	3/4" C., (4) #8 & (1) #10 GND	EC	EC	7,000	CONNECT PANEL AND ACCESSORIES

NOTE: 1. CONTRACTOR LISTED SHALL FURNISH AND INSTALL THE LISTED DEVICE.



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NO REVISION

DATE

APPD

FINAL CONSTRUCTION CHECKED

BY

DATE

FIELD BOOKS

DATE

DESIGNED

JL

DRAWN

JL

DRAWING NAME

ELECTRICAL SITE PLAN

SCALE

AS SHOWN

CHECKED

BH

PROJECT NAME

221-322



CITY OF TACOMA  
PUBLIC WORKS DEPARTMENT

ASPHALT BATCH PLANT STORAGE TANKS  
ELECTRICAL SITE PLAN  
DOUBLE TANK

SPEC. NO.

WBS NO.

SHEET NO.

11

OF 14

E2

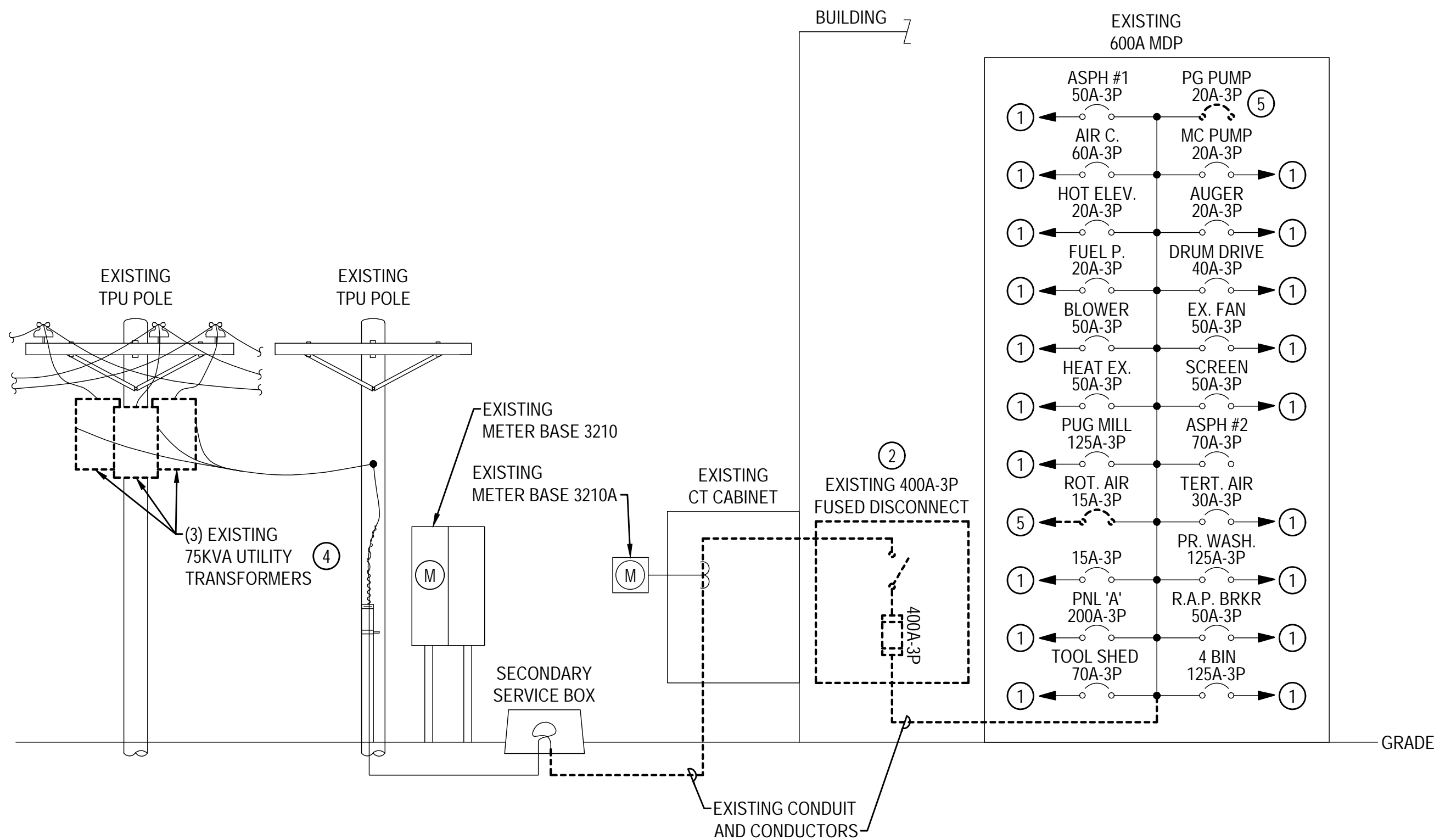
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14

14

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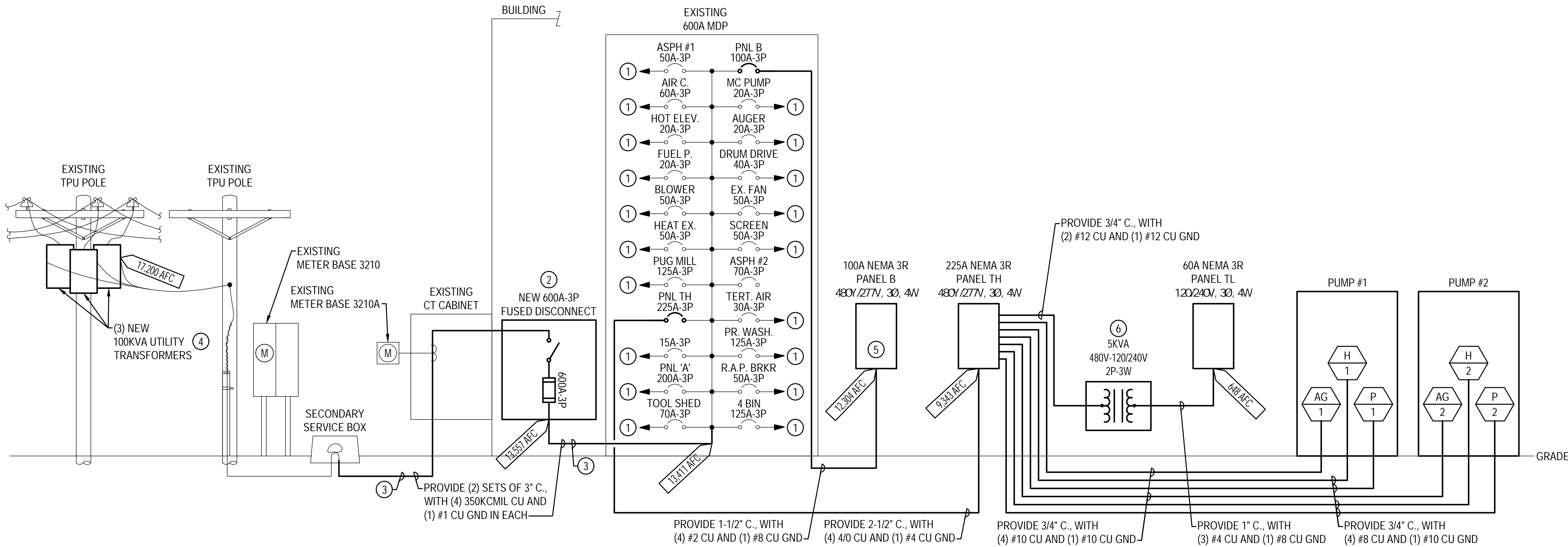




ELECTRICAL ONE LINE DIAGRAM - DEMOLITION

SCALE: DIAGRAMMATIC

1



ELECTRICAL ONE LINE DIAGRAM - CONSTRUCTION

SCALE: DIAGRAMMATIC

2

ASPHALT BATCH PLANT STORAGE TANK  
UTILITY 12 MONTH PEAK DEMAND CALCULATION WORKSHEET  
600 MDP

NEC 220.87 AND WAC 296-46B-900(3)(j)

12 Month Peak Demand (Month & Year) : February 2022  
Phase to Phase Voltage (Volts) : 480  
Phases (1=Single Phase, 3=Three Phase) : 3

Utility Peak Demand	=	174	KW
Power Factor	/	0.98	(P.F.)
Apparent Peak Demand	=	177.55	KVA
NEC 220.87(2) adjustment factor	X	1.25	
Adjusted Peak Demand	=	221.94	KVA
Seasonal adjustment factor	X	1.00	
Seasonal adjustment peak demand	=	221.94	KVA
Occupancy adjustment factor	X	1.00	
Occupancy adjustment peak demand	=	221.94	KVA
Other adjustment factor(s)	X	1.00	
Utility Peak Demand with Adjustments	=	221.94	KVA

New Calculated Demand Load Added New Tank Panel + 109.73 KVA

Metered Demand Based  
CALCULATED DEMAND LOAD : 331.67 KVA  
CALCULATED DEMAND CURRENT : 399 AMPS

Note: See WAC 296-46B-900 (3)(j) for additional metering requirements

GENERAL NOTES

- SEE EXISTING AND REVISED SCHEDULES FOR MDP ON SHEET E4.
- SEE NEW PANEL SCHEDULES ON SHEET E5.

CONSTRUCTION NOTES

- TO EXISTING LOADS.
- PROVIDE A NEW 600A FUSED DISCONNECT WITH 600A FUSES. COORDINATE SERVICE SHUTDOWN WITH TPU AND OWNER.
- COORDINATE WITH TPU TO REPLACE THE FEEDER AS NEEDED TO ACCOMMODATE THE NEW LOAD.
- TPU TO REPLACE THE EXISTING POLE MOUNTED SERVICE TRANSFORMERS. COORDINATE SERVICE SHUTDOWN WITH TPU AND OWNER.
- MOVE LOADS FROM MDP TO NEW 100A PANEL. INTERCEPT, SPLICE AND EXTEND BRANCH CIRCUITS AS NEEDED. DEMOLISH ALL ASSOCIATED APPURTENANCES, INCLUDING THE CIRCUIT BREAKER, THAT ARE NOT TO BE REUSED.
- WALL MOUNTED 5KVA 480V-120/240V STEP-DOWN TRANSFORMER.

kpff

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NO REVISION

DATE

APPD

FINAL  
CONSTRUCTION  
CHECKED

BY

DATE

FIELD BOOKS

DATE  
JUNE 2023

DESIGNED  
JL

DRAWN  
JL

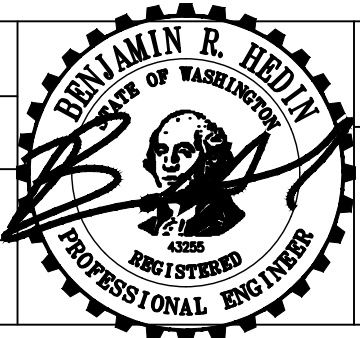
DRAWING NAME  
ONE LINE DIAGRAM

SCALE  
NTS

CHECKED  
BH

PROJECT NAME  
221-322

ONE LINE DIAGRAM



CITY OF TACOMA  
PUBLIC WORKS DEPARTMENT  
ASPHALT BATCH PLANT STORAGE TANKS  
ONE LINE DIAGRAM  
DOUBLE TANK

SPEC. NO.

WBS NO.

SHEET NO.

SHEET

E3

12 OF 14

BID SET



GENERAL NOTES

1. SEE NEW PANEL SCHEDULES ON SHEET E5.

CONSTRUCTION NOTES

- ① REPLACE EXISTING 20A-3P CIRCUIT BREAKER WITH A 100A-3P. MATCH EXISTING AIC RATING OF PANEL.
- ② REPLACE EXISTING 15A-3P CIRCUIT BREAKER WITH A 225A-3P. MATCH EXISTING AIC RATING OF PANEL.

PANEL: MDP (EXISTING)		3 PH		4 WIRE		VOLTAGE: 480Y/277V		600A MLO						
LOC:		MOUNT: SURFACE				FEED: BOTTOM								
TYPE: NEMA 1		POLES: 66				SF MAINS: NO				MINIMUM				
LOAD TYPE	LOAD	CIRCUIT DIRECTORY		CIR. NO.	CIR. BRKR P	AMP	A	B	C	CIR. BRKR P	AMP	CIR. NO.	CIRCUIT DIRECTORY	LOAD
		ASPH. #1	1	3						3		2	PG PUMP (SPARE)	
			3									4		
			5		50					20		6		
		AIR COMPRESSOR	7	3						3		8	MC PUMP	
			9									10		
			11		60					20		12		
		HOT ELEV.	13	3						3		14	AUGER	
			15									16		
			17		20					20		18		
		FUEL PUMP	19	3						3		20	DRUM DRIVE	
			21									22		
			23		20					40		24		
		BURNER BLOWER	25	3						3		26	EXHAUST FAN	
			27									28		
			29		50					50		30		
		HEAT EXCHANGE	31	3						3		32	SCREEN	
			33									34		
			35		50					50		36		
		PUG MILL	37	3						3		38	ASPH. #2	
			39									40		
			41		125					70		42		
MO	3326	ROTORAY AIR	43	3		3326				3		44	TERTIARY AIR	
MO	3326		45				3326					46		
MO	3326		47		15			3326			30	48		
		UKNNOWN	49	3						3		50	PRESSURE WASHER	
			51									52		
			53		15						125	54		
		PANEL 'A' VIA XFMR	55	3						3		56	R.A.P./R.A.S. BRKR	
			57									58		
			59		200						50	60		
		TOOL WORK SHED	61	3						3		62	4 BIN	
			63									64		
			65		70						125	66		
	9977	TOTAL	THIS PANEL->				3326	3326	3326	TOTAL				
							3326	3326	3326					
NOTES: L=LIGHTING, R=RECEPTACLES, H=ELECTRIC HEAT, ML=LARGEST MOTOR, MO=OTHER MOTORS, WH=WATER HEATERS, K=KITCHEN LOADS, A=APPLIANCES, D=DEDICATED, X=MISC, SF=SUB FEED														
LARGEST MOTOR(125%) = 0.00      KITCHEN LOADS(65%) = 0.00      TOTAL CONNECTED LOAD (VA): 9,976.61														
RECEPTS<=10000(100%) = 0.00      APPLIANCES(100%) = 0.00      TOTAL CONNECTED CURRENT (A): 12.00														
RECEPTS>10000(50%) = 0.00      MOTOR TOTAL = 9976.61      DEDICATED(100%) = 0.00      TOTAL DEMAND LOAD (VA): 9,976.61														
ELECTRIC HEAT(100%) = 0.00      WATER HEATERS(100%) = 0.00      MISC(100%) = 0.00      TOTAL DEMAND CURRENT (A) 12.00														

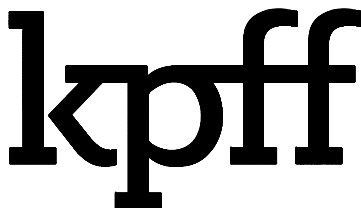


PANEL: B		3 PH		4 WIRE		VOLTAGE: 480Y/277V		100A MCB							
LOC:		MOUNT: SURFACE				FEED: TOP									
TYPE: NEMA 1		POLES: 42				SF MAINS: NO				14,000AIC MINIMUM					
LOAD TYPE	LOAD	CIRCUIT DIRECTORY	CIR. NO.	CIR. BRKR P	BRKR AMP	A	B	C	CIR. P	BRKR AMP	CIR. NO.	CIRCUIT DIRECTORY	LOAD	LOAD TYPE	
		SPARE	1	1	20				3		2	PG PUMP (SPARE)			
		SPARE	3	1	20						4				
		SPARE	5	1	20					20	6				
		SPACE	7			3326			3		8	ROTORAY AIR	3326	ML	
		SPACE	9				3326				10		3326	ML	
		SPACE	11					3326		15	12		3326	ML	
		SPACE	13								14	SPACE			
		SPACE	15								16	SPACE			
		SPACE	17								18	SPACE			
		SPACE	19								20	SPACE			
		SPACE	21								22	SPACE			
		SPACE	23								24	SPACE			
		SPACE	25								26	SPACE			
		SPACE	27								28	SPACE			
		SPACE	29								30	SPACE			
		SPACE	31								32	SPACE			
		SPACE	33								34	SPACE			
		SPACE	35								36	SPACE			
		SPACE	37								38	SPACE			
		SPACE	39								40	SPACE			
		SPACE	41								42	SPACE			
		TOTAL	THIS PANEL->				3326	3326	3326	TOTAL				9977	
						3326	3326	3326	TOTAL CONNECTED LOAD (VA): 9,976.61						
									TOTAL CONNECTED CURRENT (A): 12.00						
									TOTAL DEMAND LOAD (VA): 12,470.77						
									TOTAL DEMAND CURRENT (A) 15.00						
NOTES: L=LIGHTING, R=RECEPTACLES, H=ELECTRIC HEAT, ML=LARGEST MOTOR, MO=OTHER MOTORS, WH=WATER HEATERS, K=KITCHEN LOADS, A=APPLIANCES, D=DEDICATED, X=MISC, SF=SUB FEED															

PANEL: TH		3 PH		4 WIRE		VOLTAGE: 480Y/277V		225A MCB								
LOC:		MOUNT: SURFACE				FEED: BOTTOM										
TYPE:		NEMA 3R; SUSE RATED				SF MAINS: NO				14,000AIC MINIMUM						
LOAD TYPE	LOAD	CIRCUIT DIRECTORY		CIR. NO.	CIR. BRKR P	BRKR AMP	A	B	C	CIR. P	BRKR AMP	CIR. NO.	CIRCUIT DIRECTORY	LOAD	LOAD TYPE	
H	8000	STORAGE TANK #1 (H-1)		1	3		16000			3		2	STORAGE TANK #2 (H-2)	8000	H	
H	8000			3				16000						4	8000	H
H	8000			5		40			16000			40		6	8000	H
ML	5817	STORAGE TANK #1 (P-1)		7	3		11634			3		8	STORAGE TANK #2 (P-2)	5817	MO	
ML	5817			9				11634						10	5817	MO
ML	5817			11		40			11634			40		12	5817	MO
L	382	20' LIGHTING POLE		13	1	20	4260			3		14	STORAGE TANK #1 (AG-1)	3878	MO	
SF	1680	PANEL 'TL' VIA 5KVA XFMR		15	2			5558				16		3878	MO	
SF	1500			17		20			5378			30		18	3878	MO
		SPARE		19	1	20	3878			3		20	STORAGE TANK #2 (AG-2)	3878	MO	
		SPARE		21	1	20		3878				22		3878	MO	
		SPARE		23	1	20			3878		30	24		3878	MO	
		SPACE		25								26	SPACE			
		SPACE		27								28	SPACE			
		SPACE		29								30	SPACE			
		SPACE		31								32	SPACE			
		SPACE		33								34	SPACE			
		SPACE		35								36	SPACE			
		SPACE		37								38	SPACE			
		SPACE		39								40	SPACE			
		SPACE		41								42	SPACE			
	45013	TOTAL		THIS PANEL->			35772	37070	36890	TOTAL			64719			
							35772	37070	36890							
LIGHTING(125%) = 477.50 RECEPTS<=10000(100%) = 180.00 RECEPTS>10000(50%) = 0.00 RECEPTS TOTAL = 180.00 ELECTRIC HEAT(100%) = 48000.00 LARGEST MOTOR(125%) = 21813.75 OTHER MOTORS(100%) = 40719.00 MOTOR TOTAL = 62532.75 WATER HEATERS(100%) = 0.00 KITCHEN LOADS(65%) = 0.00 APPLIANCES(100%) = 0.00 DEDICATED(100%) = 3000.00 MISC(100%) = 0.00 TOTAL CONNECTED LOAD (VA): 109,732.00 TOTAL CONNECTED CURRENT (A): 131.99 TOTAL DEMAND LOAD (VA): 114,190.25 TOTAL DEMAND CURRENT (A) 137.35																
NOTES: L=LIGHTING, R=RECEPTACLES, H=ELECTRIC HEAT, ML=LARGEST MOTOR, MO=OTHER MOTORS, WH=WATER HEATERS, K=KITCHEN LOADS, A=APPLIANCES, D=DEDICATED, X=MISC, SF=SUB FEED																

LOAD TYPE	PANEL: TL														1 PH				3 WIRE				VOLTAGE: 120/240V				60A MCB			
	LOC:														MOUNT: SURFACE				FEED: BOTT				BUS							
	TYPE: NEMA 1														POLES: 6				SF MAINS:				10,000AIC MINIMUM							
	LOAD	CIRCUIT DIRECTORY					CIR. NO.	CIR. BRKR				A	B	CIR. BRKR		CIR. NO.	CIRCUIT DIRECTORY					LOAD	TYPE							
	R	180	CONVENIENCE RECEPTACLE					1	1	20	180				1	20	2	SPARE												
	D	1500	HT-1					3	1	20			1500		1	20	4	SPARE												
	D	1500	HT-2					5	1	20	1500						6	SPACE												
	3180	TOTAL					THIS PANEL->					1680	1500						TOTAL											
											1680	1500																		
																		TOTAL CONNECTED LOAD (VA): 3,180.00												
																		TOTAL CONNECTED CURRENT (A): 13.25												
																		TOTAL DEMAND LOAD (VA): 3,180.00												
																		TOTAL DEMAND CURRENT (A): 13.25												
NOTES: L=LIGHTING, R=RECEPTACLES, H=ELECTRIC HEAT, ML=LARGEST MOTOR, MO=OTHER MOTORS, WH=WATER HEATERS, K=KITCHEN LOADS, A=APPLIANCES, D=DEDICATED, X=MISC, SF=SUB FEED																														

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PUBLIC WORKS DEPARTMENT

ASPHALT BATCH PLANT STORAGE TANKS

PANEL SCHEDULES  
DOUBLE TANK

SPEC. NO.

WBS NO.

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E5

14 OF 14