SITE INFORMATION

I. PARCEL ADDRESS: 312 S. FERRY STREET DOUGLAS, MI 49406

PN: 59-016-069-00 CONSUMERS CREDIT UNION

2. OWNER: 7200 ELM VALLEY DRIVE KALAMAZOO, MI 49009

> BOSCH ARCHITECTURE 8065 VINEYARD PKWY KALAMAZOO, MI. 49009 (269) 321-5151

> > C2 ZONING

OPEN: 66.6%

BUILD: 2.9% PAVEMENT: 30.5%

4. SURVEY: DRIESENGA

4. PROPOSED LAND USE: CREDIT UNION

TOTAL SITE AREA: 55,737 SF 40,591 SF INSIDE ROW

 BUILDING TYPE(S): 1,192 SF CREDIT UNION

+ STANDALONE ITM

8. MAXIMUM BUILDING HEIGHT: 28' MAXIMUM 18' ACTUAL

9. REQUIRED PARKING: BANK: (I) STALL REQUIRED PER 400 SF USABLE FLOOR AREA + I STALL PER EMPLOYEE IN THE LARGEST SHIFT PLUS (5) VEHICLE STACKING SPACES AT ATM AND EACH DRIVE UP WINDOW.

1192 SF / 400 + 1/EMPLOYEE = 3 SPACES + 3 EMPLOYEES = 6 REQUIRED SPACES.

8 SPACES PROVIDED + 5 STACKING SPACES AT EACH DRIVE THRU LANE

SEE LOOI IO. LANDSCAPING:

II. LEGAL DESCRIPTION: SEE THIS SHEET

12. OCC. CLASSIFICATION: B - BUSINESS

13. CONSTRUCTION TYPE:

15. ALL SITE PARKING STRIPING, ARROWS, CROSSWALKS AND LINES TO BE YELLOW PAINT. ALL BARRIER

FREE MARKINGS, LINES AND SYMBOLS TO BE BLUE.

GENERAL NOTES (SITE WORK)

I, SITE PREPARATION: a. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PERFORMED BY THE CONTRACTOR IN COMPLIANCE WITH INDIANA REGULATIONS. b. ORGANIC TOPSOIL SHALL BE STRIPPED FROM THE CONSTRUCTION AREA AND STOCKPILED AS INSTRUCTED BY THE G.C. FOR LATER USE.

2. EARTHWORK: a. CALL MISS DIG AT 1-800-482-7171 BEFORE

BEGINNING EXCAVATION. b. EXCAVATION SHALL BE LEVEL TO EXACT DEPTHS AND DIMENSIONS INDICATED ON DRAWINGS. c. CONSTRUCTION OF FOUNDATIONS AND SLABS-ON-GRADE WILL BE ON COMPACTED FILL IN MOST AREAS. LAYERED COMPACTION SHALL BE PERFORMED TO A MINIMUM DENSITY OF 95 MAXIMUM DRY DENSITY AS DETERMINED BY ASTM

DESIGNATION D-1557 VALUES d. PLACE A MIN, 6 INCHES OF BANK RUN SAND COMPACTED TO 95% OF MAXIMUM DENSITY UNDER ALL FLOOR SLABS ON GRADE. e. SOIL TESTING WILL BE CONTRACTED AND PAID

FOR BY THE GENERAL CONTRACTOR, F. SITE SHALL BE FINE GRADED BEFORE PLACING TOP SOIL OR GRANULAR BASE MATERIAL. q. EXTERIOR SURFACE DRAINAGE SHALL BE AWAY FROM BUILDINGS, 5% 10'-0" OUT FROM BLDG. h. ALL TOPOGRAPHICAL INFORMATION WAS FURNISHED BY DRIESENGA AND ASSUMED CORRECT. THE CONTRACTOR SHALL VERIFY ALL EXISTING AND

NEW GRADES PRIOR TO COMMENCEMENT OF ANY WORK, THIS OFFICE SHALL NOT BE HELD RESPONSIBLE FOR ANY MISSING OR ERRONEOUS INFORMATION,

GEN CONTR WILL PROVIDE NECESSARY SOIL BORINGS AS DIRECTED BY THE CITY OF DOUGLAS GEN CONTR WILL ALSO PROVIDE PERMEABILITY

TESTS IF REQUIRED, WHICH WILL INCLUDE GROUNDWATER INFORMATION. ALL PAVEMENT MARKINGS AND TRAFFIC SIGNS MUST CONFORM TO THE STANDARDS SET FORTH IN

THE CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. REQUIRED LANDSCAPE IS SHOWN ON LANDSCAPE

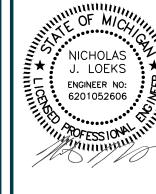
PLAN, SEE LOOI FOR PLANTING DETAILS. APPROPRIATE PERMITS TO BE OBTAINED FROM THE CITY OF DOUGLAS.

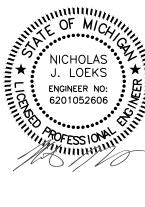
AN EMERGENCY KNOX BOX FOR FIRE DEPARTMENT ACCESS WILL BE PROVIDED IF REQUIRED, KNOX BOX LOCATION TO BE DETERMINED UPON SUBMITTAL OF BUILDING PLANS, IF REQUIRED.

A FIREFIGHTER RIGHT-TO-KNOW AND HAZARDOUS MATERIALS RIGHT TO KNOW FORMS TO BE SUBMITTED PRIOR TO ISSUANCE OF A BUILDING PERMIT, IF REQUIRED.

LEGAL DESCRIPTION LAND SITUATED IN THE CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN:

ALL THAT PART OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 LYING WEST OF US-31 EXCEPT THE NORTH 300 FEET THEREOF, ALSO EXCEPT COMMENCING AT A POINT 300 FEET SOUTH OF THE NORTHWEST CORNER OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4, SECTION 16, TOWN 3 NORTH, RANGE 16 WEST, VILLAGE (NOW CITY) OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN; THENCE SOUTH 225 FEET ALONG THE CENTER OF CHASE ROAD; THENCE EAST TO THE WEST SIDE OF BLUE STAR HIGHWAY; THENCE NORTHEASTERLY ALONG SAID RIGHT OF WAY TO A POINT DUE EAST OF BEGINNING; THENCE WEST TO POINT OF BEGINNING, SECTION 16, TOWN 3 NORTH, RANGE 16 WEST, ALSO EXCEPT, THE SOUTH 328 FEET THEREOF.





J. LOEKS ENGINEER NO: 6201052606

ALL SITE INFRASTRUCTURE WILL BE CONSTRUCTED AT ONCE, PHASING OF THE OF THE OVERALL DEVELOPMENT WILL NOT OCCUR DURING THIS APPROVAL, NO TEMPORARY RETENTION AREAS WILL BE USED ON THIS SITE. DURING CONSTRUCTION, RUNOFF WILL INFILTRATE THROUGH THE GROUND SURFACE.

2. PERMANENT SPOIL PILES WILL NOT BE NEEDED FOR THIS PROJECT, CONTRACTOR TO VERIFY CUT/FILL WITH EXCAVATOR, ALL CUT TO BE TAKEN OFF SITE AT THE TIME OF EXCAVATION, IF REQUIRED.

SOIL EROSION CONTROL NOTES

2. EXIST CATCH BASINS AS NOTED ON THIS PLAN WILL BE PROTECTED WITH WOVEN GEOTEXTILE FILTER FABRIC DURING CONSTRUCTION, SEE PLAN FOR CATCH BASIN LOCATIONS, REFER TO DTL 16/C501.

3. A SILT FENCE WILL BE USED WHERE ELEVATIONS WITHIN THE PROPERTY LINE WILL TEMPORARILY BE HIGHER OR LOWER THAN NEIGHBORING PROPERTIES IN ORDER TO CONTAIN SOIL APPROPRIATELY, SEE PLAN FOR APPROXIMATE LOCATIONS, SILT FENCE LOCATIONS TO BE VERIFIED BY ON SITE CONTRACTOR, REFER TO DETAIL 15/C501 FOR SILT FENCE DETAILS.

4. A CONSTRUCTION ACCESS DRIVE SHOULD BE USED TO ACCESS THE SITE FROM THE EXISTING DRIVEWAY AS TO HELP RETAIN SOIL ON SITE AND REDUCE AMOUNT OF SOIL TRACKED OFF SITE BY CONSTRUCTION VEHICLES, REFER TO DETAILS 13 & 13/C501.

STORM SEWER STRUCTURES

RIM = 646.00' SW INV 8" SOLID PIPE = 644.00'

YB #2 RIM = 646.00' NE INV 8" SOLID PIPE = 644.00'

CONSTRUCTION MAINTENANCE PROGRAM FOR SESC

INSPECTION OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND DEVICES WILL BE COMPLETED ONCE PER WEEK AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE RIGHT-OF-WAY. INSPECTIONS WILL CONTINUE IN THE TEMPORARILY STABILIZED AREAS TO ENSURE THE ADEQUACY OF THE TEMPORARY MEASURES, THESE INSPECTIONS WILL CONTINUE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

2. THE NEED FOR CORRECTIVE ACTIONS WILL BE DOCUMENTED AND FOLLOWED UP ON TO ENSURE THE ACTIONS ARE CARRIED OUT, WHEN NEEDED, CORRECTIVE ACTION IS REQUIRED WITHIN 24 HOURS OF THE INSPECTION IF SEDIMENT IS DISCHARGING TO THE WATERS OF THE STATE AND WITHIN 5 DAYS OF THE INSPECTION IN ALL OTHER CIRCUMSTANCES.

3. THESE INSPECTIONS AND CORRECTIVE ACTIONS WILL BE DOCUMENTED USING THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND SOIL EROSION AND SEDIMENTATION CONTROL INSPECTION REPORT (FORM 1126), A LOG OF THE INSPECTIONS AND CORRECTIVE ACTIONS WILL BE PLACED IN THE PROJECT FILE AND WILL BE RETAINED FOR A PERIOD OF THREE YEARS FROM THE DATE OF THE INSPECTION.

4. DURING THE SUSPENSION OF WEEKLY INSPECTIONS AND SITE VISITS, SESC INSPECTIONS MUST BE PERFORMED AT LEAST ONCE EVERY 30 DAYS DURING THE INACTIVE PERIOD IF WEATHER CONDITIONS ARE DEEMED SAFE FOR TRAVEL, IF SITE TRAVEL, INSPECTIONS MUST RESUME AS SOON AS FEASIBLE.

5. PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA WILL BE COMPLETE WITHIN FIVE CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE IS COMPLETE. IF IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE IS COMPLETE OR IF SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE MAINTAINED UNTIL PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND THE AREA IS STABILIZED.

POST CONSTRUCTION MAINTENANCE PROGRAM FOR PERMANENT SESC I. INSPECT FOR SEDIMENT ACCUMULATION

2. REMOVE SEDIMENT ACCUMULATION EVERY 5-10

YEARS OR AS NECESSARY 3. INSPECT FOR DEBRIS EARLY SPRING, FALL AND AFTER MAJOR STORMS. REMOVE DEBRIS AS NEEDED

NEEDED WITH SEED BLANKETS TO ESTABLISH PERMANENT VEGETATION. 5. RECORD ALL INSPECTIONS, MAINTENANCE

ACTIVITIES, AND SEDIMENT ACCUMULATION ANNUALLY.

4. REPAIR ERODED BANKS AND SLOPES AS

PERMANENT SEEDING NOTES: I. SPREAD TOPSOIL, COMPOST, OR BOTH ON THE

PREPARED AREAS AT LEAST 3 INCHES DEEP.

2. PROVIDE, INSTALL, AND ANCHOR MULCH BLANKETS. PROVIDE MULCH BLANKETS SELECTED FROM THE QUALIFIED PRODUCTS LIST, PLACE MULCH BLANKETS WITHIN I CALENDAR DAY AFTER SEEDING. SECURE WITH NET ANCHORS, PLACE AND ANCHOR BLANKETS IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS SPECIFIED IN THIS SUBSECTION OR THE MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS GREATER, OVERLAP BLANKET EDGES BY 2 INCHES AND SHINGLE LAP BLANKET ENDS WITH A 6-INCH OVERLAP, PLACE NET ANCHORS ALONG JOINT EDGES AND BLANKET CENTERLINES NO GREATER THAN 2 FEET APART, IN WATERWAYS, SHINGLE LAP BLANKETS WITH AN OVERLAP OF 12 INCHES ON THE DOWNSLOPE EDGE. PLACE BLANKETS ON BACKSLOPES PERPENDICULAR TO THE ROADBED. ON FORESLOPES, LAY THE FIRST STRIP ADJACENT TO THE ROAD, PARALLEL TO THE ROAD, LAY THE REMAINDER OF THE STRIPS ON FORESLOPES PARALLEL OR PERPENDICULAR TO THE ROAD, IF INSTALLING BLANKETS FROM THE TOP OF THE SLOPE, DO NOT ALLOW THEM TO FREE FALL DOWN THE SLOPE.

3. REFER TO MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 816, FOR TURF ESTABLISHMENT.

TYPICAL MATERIALS, SYMBOLS AND INDICATIONS

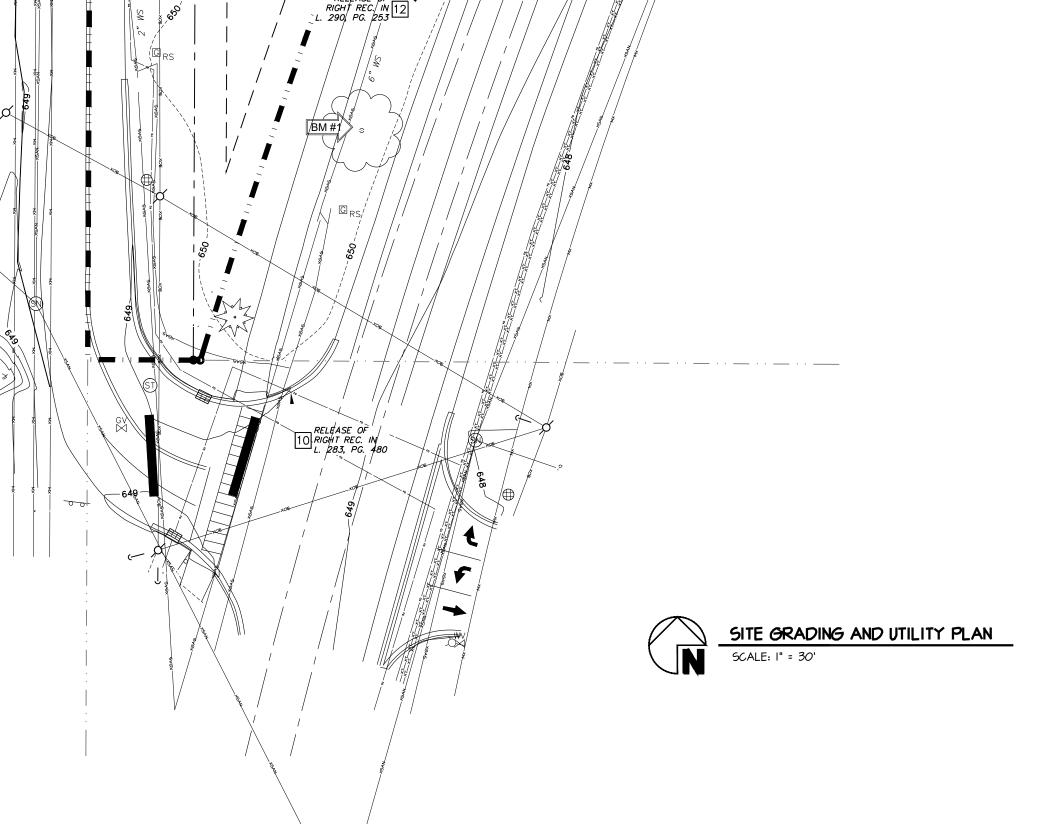
--- EXIST SPOT GRADE (MH) MANHOLE (ST) STORM SEWER MANHOLE FINISH GRADE (SA) SANITARY SEWER MANHOLE 🏮 FIRE HYDRANT (T) PHONE CO MANHOLE ⊗ WATER VALVE (E) ELEC CO MANHOLE W WATER METER (W) WATER MANHOLE M CATCH BASIN/CURB INLET (a) UNDERGROUND GAS MARKER ☑ GAS METER OUTILITY POLE W/ LIGHT TO BASKETBALL NET P MAIL BOX O UTILITY POLE PARKING METER Ø LIGHT POLE ─ SIGN + SOIL BORING o FLAG POLE CONCRETE BOLLARD •── YARD LAMP + POLE) EXIST TREE TO REMAIN THONE BOOTH (MW) MONITOR WELL , NEW TREE ☑ ELECTRIC BOX / TRANSFORMER

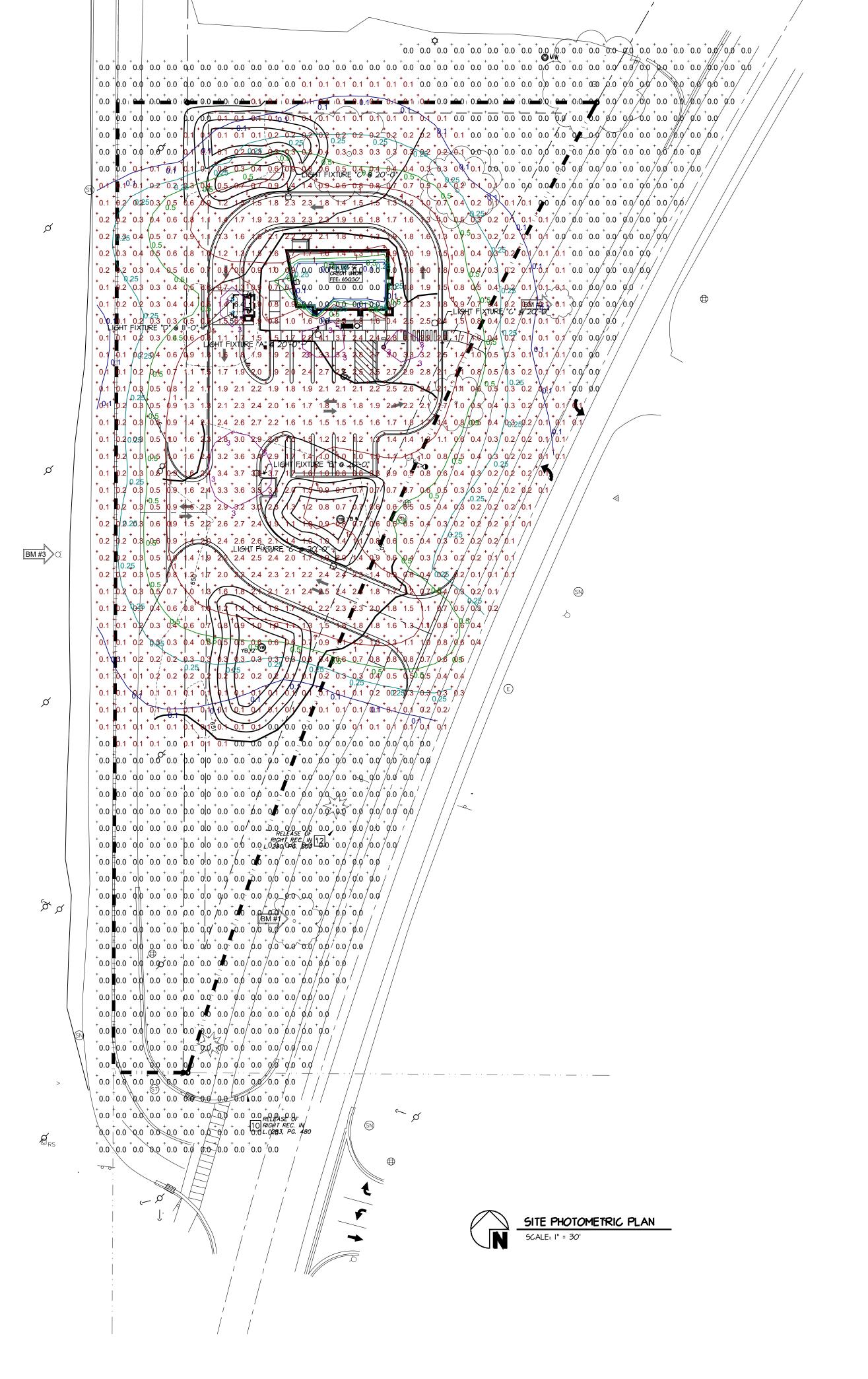
AIR CONDITIONING UNIT TREE TO BE REMOVED (T) UNDERGROUND TELEPHONE MARKER ■ UNDERGROUND TELEPHONE MARKER

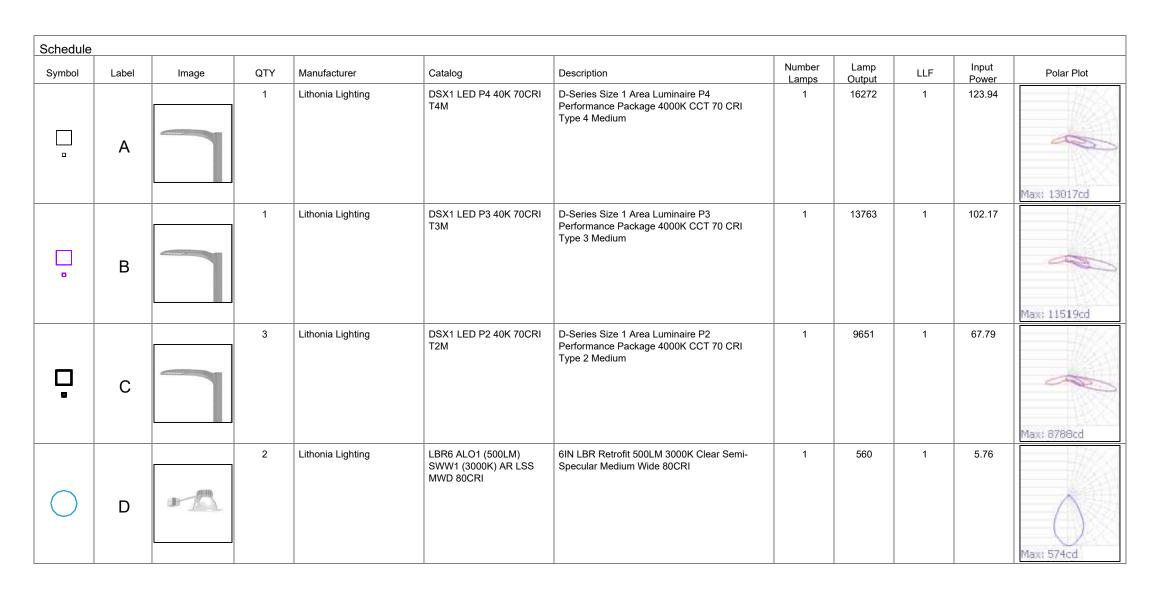
---- UNDERGROUND ELEC LINE — GAS LINE $-{\sf x}-{\sf x}-{\sf$ ____ - ___ - ___ - ___ - ___ - ___ CENTER LINE ____ · · __ · · __ · · __ · · __ · · __ · · __ PROPERTY LINE ______STM_____STORM LINE SANITARY LINE -----XOE------EXIST OVERHEAD ELEC LINE -----------------EXIST UNDERGROUND ELEC LINE _____XGAS_____XGAS_____ EXIST GAS LINE -----×W--------EXIST WATER LINE _____XSTM_____XSTM_____EXIST_STORM_LINE _____XSAN_____XSAN_____ EXIST SANITARY LINE

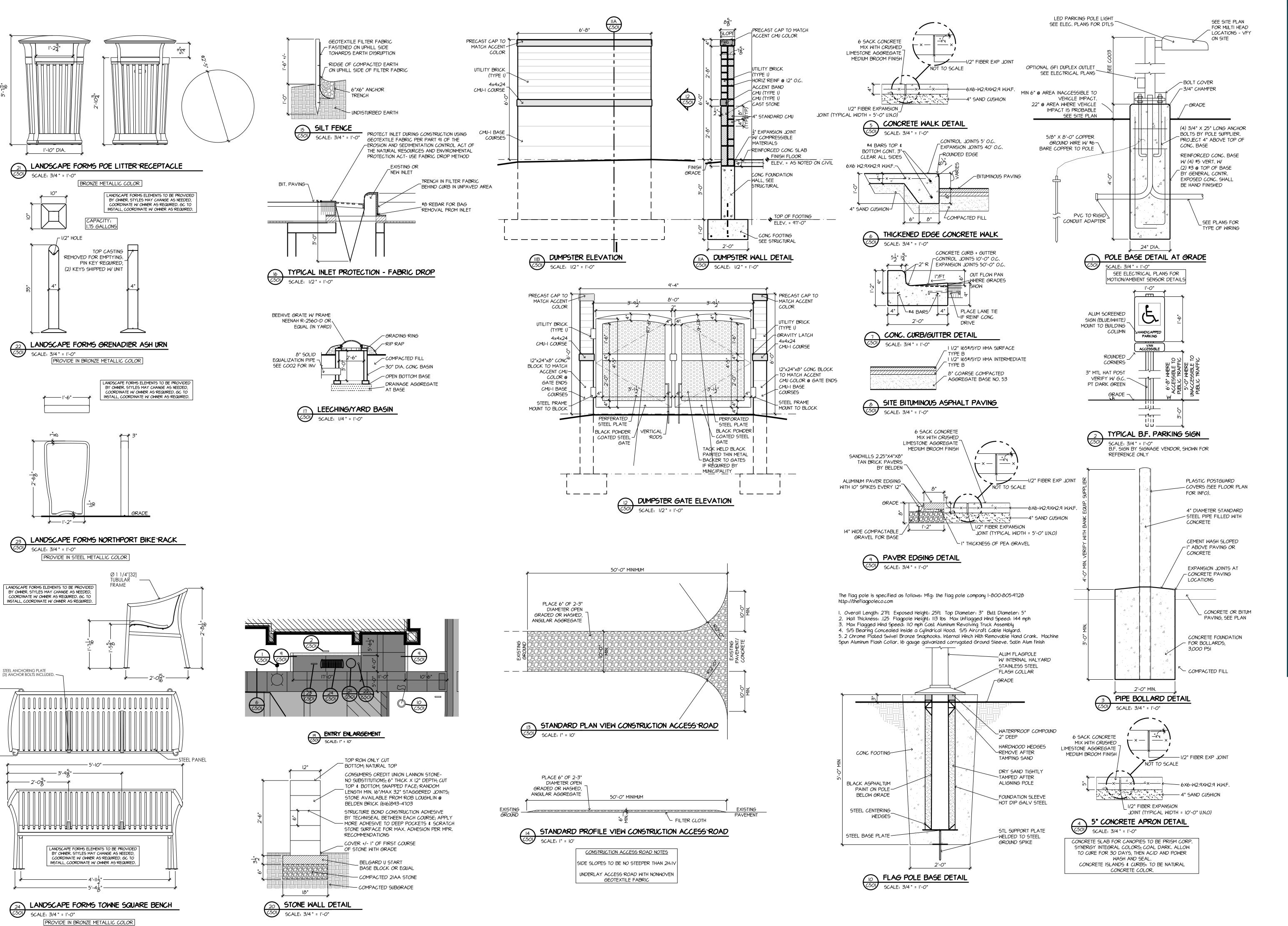
----- OVERHEAD ELEC LINE

S-E-S-C KEYING SYSTEM					
KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED		
Eδ	PERMANENT SEEDING		STABILIZATION METHOD UTILIZED ON CONSTRUCTION SITES WHERE EARTH CHANGE HAS BEEN INITIATED BUT NOT COMPLETED WITHIN A 2 WEEK PERIOD,		
Eq	MULCH BLANKETS		ON EXPOSED SLOPES, NEWLY SEEDED AREAS, NEW DITCH BOTTOMS, OR AREAS SUBJECT TO EROSION.		
553	STONE CONSTRUCTION ACCESS	4	AT LOCATIONS WHERE CONSTRUCTION EQUIPMENT WILL ENTER AND EXIT THE DRAIN EASEMENT AND TRACKING OF SOIL IS ANTICIPATED.		
55 I	SILT FENCE		AS A TEMPORARY MEASURE USED TO CAPTURE SEDIMENT FROM SHEET FLOW, MAY ALSO DIVERT SMALL VOLUMES OF SHEET FLOW TO PROTECTED OUTLETS.		
558	STORM DRAIN INLET PROTECTION	<u></u>	AROUND THE ENTRANCE TO A NEWLY CONSTRUCTED CATCH BASIN OR AN INLET THAT WILL CAPTURE RUNOFF FROM AN EARTH CHANGE ACTIVITY.		









DI ANT I IGT

PLANT LIST						
<u>KEY</u>	BOTANIC NAME	COMMON NAME	SIZE	QTY		
CANOPY	TREES					
Ar	Acer rubrum 'Bowhall'	Bowhall Red Maple	$2\frac{1}{2}$ " cal, min,	5		
Gb	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	$2\frac{1}{2}$ " cal. min.	5		
Ns	Nyssa sylvatica	Black Gum	$2\frac{1}{2}$ " cal. min.	6		
Ov	Ostrya virginiana	Hophornbeam	$2\frac{1}{2}$ " cal. min.	6		
<u>ORNAME</u>	NTAL TREES:					
Ac	Amelanchier canadensis 'Shadblow'	Shadblow Serviceberry	6-8' ht. min.	I		
Cc	Cercis canadensis	Eastern Redbud	6-8' ht. min.	3		
Cf	Cornus florida	Flowering Dogwood	6-8' ht. min.	4		
<u>EVERGR</u>	<u>EEN SHRUBS:</u>					
Bg	Buxus 'Green Velvet'	Green Velvet Boxwood	3 gallon	15		
lv	llex verticillata 'Red Sprite'	Red Sprite Holly	5 gallon	4		
ld	llex verticillata 'Jim Dandy'	Jim Dandy Holly	5 gallon	I		
DECIDUO	US SHRUBS:					
Hb	Hydrangea paniculata 'Bobo'	Bobo Hydrangea	24" ht. min.	10		
Hm	Hydrangea macrophylla 'Endless Summer'	Endless Summer Hydrangea	5 gallon	5		
Rm	Rosa 'Novarospop'	Popcorn Drift Rose	3 gallon	6		
Sj	Spiraea japonica 'Goldflame'	Goldflame Spirea	3 gallon	20		
Wf	Weigela florida 'Wine and Roses'	Wine and Roses Weigela	5 gallon	4		
	ALS/ORNAMENTAL GRASSES					
As	Allium Summer Peek-A-Boo	Summer Peek-A-Boo Ornamental Onion	l gallon	14		
Aa	Astilbe x arendsii 'Ice Cream'	Ice Cream Astilbe	l gallon	19		
Hh	Hemerocallis 'Happy Returns'	Happy Returns Daylily	l gallon	57		
Hp	Hosta 'Patriot'	Patriot Hosta	l gallon	15		
Pa C-	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	l gallon	18		
Ss	Schizachrium scoparium Free Spirit Band of G	ola bana of Gola Little Bluestem	l gallon	П		

***QUANTITIES PROVIDED FOR INFORMATIONAL PURPOSES ONLY; CONTRACTOR RESPONSIBLE FOR FURNISHING PLANT MATERIAL AS DESCRIBED ON PLAN

LANDSCAPING NOTES

- COMPLY WITH ALL CITY OF DOUGLAS STANDARDS. ALL LANDSCAPING TO BE INSTALLED BY A QUALIFIED LANDSCAPE CONTRACTOR
- ALL PLANTINGS , INCLUDING TREES IN LAWN AREAS, SHALL BE MULCHED WITH 3"
- DEPTH SHREDDED HARDWOOD MULCH; INCLUDE ALUMINUM EDGING. INSTALL 42" TREE RING AROUND ALL TREES IN LAWN AREAS.
- 6" MINIMUM TOPSOIL DEPTH IN ALL SEEDED AREAS AND 10-12" DEPTH IN PLANTING BEDS.
- AMEND EXISTING SITE TOPSOIL WITH ORGANICS FOR STANDARD PLANTING MIX.
- SEED MIX TO BE 60% BLUEGRASS, 30% PERENNIAL RYE AND 10% FESCUE.
- ONE YEAR WARRANTY ON LAWN AND PLANTS/TREES. 4" X $\frac{1}{8}$ " MILL FINISH ALUMINUM EDGING AT ALL PLANTING BEDS AND TREE RINGS.
- UNLESS OTHERWISE NOTED, USE 5 STAKES PER 16' SECTION.
- ALL LAWN AND SHRUB AREAS TO BE IRRIGATED. IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED BY LANDSCAPE CONTRACTOR IN ACCORDANCE WITH CITY AND TOWNSHIP STANDARDS
- AND THE MICHIGAN PLUMBING CODE. SHRUB AREAS SHALL HAVE DRIP IRRIGATION. TIE TO PLUMBER SUPPLIED WATER METER IN BUILDING.
- 9. PLANT MATERIALS SHALL BE CHOSEN AND INSTALLED IN ACCORDANCE WITH STANDARDS RECOMMENDED BY THE AMERICAN NURSERY ASSOCIATION.
- IO. ALL DISEASED, DAMAGED OR DEAD PLANT MATERIAL SHALL BE REPLACED PER CITY OF DOUGLAS ZONING ORDINANCE.

LANDSCAPING REQUIREMENTS

- PARKING LOT LANDSCAPING: PARKING LOTS WITH A CAPACITY OF FOUR OR MORE VEHICLES SHALL HAVE (I)TREE FOR EVERY 8 PARKING SPACES WITH A MINIMUM LANDSCAPED SPACE OF 50 SF.
- 8 PARKING SPACES PROPOSED = (I) TREE + 50 SF LANDSCAPE SPACE REQUIRED/ (I) TREE + 683 SF OF LANDSCAPED SPACE WITH 274 SF OF DEEP ROOTED PERENNIAL LANDSCAPARE AREA PROVIDED
- PARKING LOT SCREENING REQUIRED WHEN ABUTTING A RESIDENTIALLY ZONED PARCEL- NOT APPLICABLE, PROPERTY ABUTS LIKE ZONED PARCEL
- PARKING LOT SCREENING REQUIRED WHEN ADJACENT TO A PUBLIC RIGHT OF WAY PROPOSED PARKING

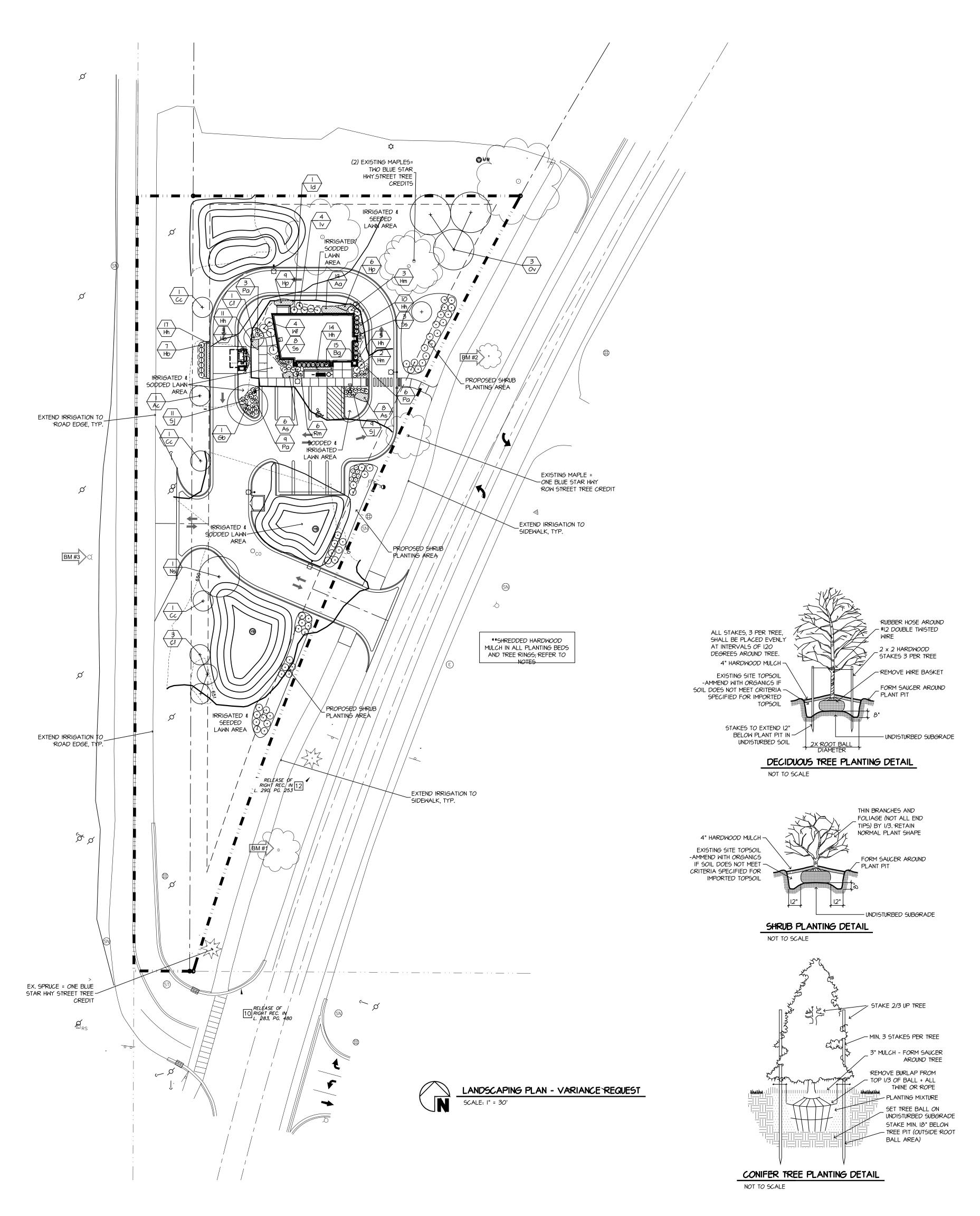
2. SITE LANDSCAPING

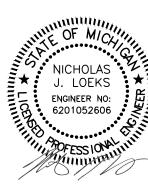
- BOUNDARY SCREENING REQUIRED WHEN A NONRESIDENTIAL USE ABUTS A RESIDENTIALLY ZONED/USED PROPERTY -NOT APPLICABLE, PROPERTY ABUTS LIKE ZONED PARCEL
- LANDSCAPING ALONG PUBLIC RIGHTS OF WAY TO INCLUDE (1) TREE 15' IN HT. OR 3" CALIPER (WHICHEVER IS
- GREATER) FOR EACH 30 LF OF FRONTAGE FERRY STREET RIGHT OF WAY:
- 458 LF FRONTAGE / 30 = (15) TREES REQUIRED, (DUE TO PROXIMITY TO OVERHEAD POWER LINES AND EASEMENT, (I) CANOPY TREES AND (7) ORNAMENTAL TREES USED TO SATISFY REQUIREMENTS) (REDUCTION OF 7 REQUIRED TREES)
- BLUE STAR HIGHWAY RIGHT OF WAY:
- 500 LF / 30 = (IT) TREES REQUIRED / (4) EXISTING TREES + 4 NEW TREES PROVIDED (REDUCTION OF 9 REQUIRED TREES) ADDITIONAL SHRUB AREAS PROPOSED IN LIEU OF TREES AS SHOWN

KEY

	ALUMINUM EDGING- SEE NOTES ABOVE FOR INSTALLATION
+	CANOPY TREE - REFER TO NOTES ABOVE & DETAIL FOR INSTALLATION
+	ORNAMENTAL TREE - REFER TO NOTES ABOVE & DETAIL FOR INSTALLATION
\odot	DECIDUOUS SHRUB - REFER TO NOTES ABOVE & DETAIL FOR INSTALLATION
\$	EVERGREEN SHRUB - REFER TO NOTES ABOVE & DETAIL FOR INSTALLATION

PERENNIAL/ORNAMENTAL GRASS REFER TO NOTES ABOVE





ELECTROMECHANICAL CONTROLLERS

ESP Modular: ESP-4M, ESP-4Mi The controller shall be of a hybrid type that combines electro-mechanical and microelectronic circuitry capable of fully automatic or manual operation. The controller shall be housed in a wall-mountable, weather resistant plastic cabinet with a key-locking cabinet door (outdoor models only) suitable for either indoor or outdoor installation.

The controller shall have a base unit with 4 stations as well as three expansion slots capable of receiving station modules of three stations each to create a controller of up to 13 stations. Station 13 shall be called an "auxiliary station" and shall have the capability of bypassing an active rain sensor or of functioning as a normal station output. Station timing shall be from O minutes to 6 hours. Run time resolution shall be in I-minute increments from O to 59 minutes and IOminutes from 1 to 6 hours. The LCD shall display "No Run Times" or equivalent icon for 230 VAC models if no run time has been entered for any station in any program.

The controller shall have three separate and independent programs which can have different start times, station timing and watering days. Each program shall have up to 4 start times available. The controller shall stack multiple start times in sequence to prevent hydraulic overload. The LCD shall display "No Start Times" or the equivalent icon for 230VAC models if no start time has been entered for any program. The controller shall be capable of operating two 24 VAC solenoid valves per station plus a master valve or remote pump start relay. The controller shall operate on 120 VAC± 20% at 60Hz (230VAC ± 20% at 50Hz for international models). The controller shall have an electronic, diagnostic circuit breaker that shall sense a station with an electrical overload or short circuit and shall bypass that station and continue operating all other stations.

The controller shall have a 365-day calendar with a permanent day off feature that allows a day(s) of the week to be turned OFF on any cycle (odd/even/1-31day cycle). A day set to "Permanent Off" shall override the normal repeating schedule and shall display the words "Day Always Off/Day Off" in the LCD screen.

The controller shall have a seasonal adjust feature adjustable from 0% to 200% in increments of 10%. Seasonal adjust shall effect all programs simultaneously. If seasonal adjust is set to 0% the LCD shall display "SEASONAL ADJ" (equivalent icon for 230 VAC models).

The controller shall have a 12-hour AM/PM or 24 hour military (for 230VAC models) clock with a midnight day change over. The controller shall have a sensor circuit for connection to a rain sensor or to an underground moisture sensor system that will interrupt a scheduled watering under "wet" or "moist" conditions. The controller shall have an indicator on the LCD screen and one LED light to indicate that a sensor is connected and active and that watering has been

temporarily disabled. The controller shall have access to a variety of "hidden features" by turning the dial to a specific location on the dial and pushing the ON OFF buttons simultaneously. These features shall include: 1) save a custom default program 2) retrieve a custom default program 3) bupass an active rain sensor on the Auxiliary Station 4) allow the Auxiliary Station to be interrupted by an

active rain sensor 5) Clear memory 6) Set a day as "Permanently Off" 7)Set master valve/pump

The controller shall have the following manual operations and manual advances for semiautomatic control:

- Run a single valve
- 2. Run multiple manually stacked valves 3. Run a semi-automatic program

start circuit by station 8) Set programmable delay between station.

- 4. Run a test on all valves (all stations with any time assigned regardless of the program) from 1 to 10 minutes

The controller shall have a removable, battery programmable front panel (uses a 9 volt battery [not included]) for conveniently programming the controller away from the installation site or for teaching irrigation scheduling.

The controller shall have the capacity for the program to be erased allowing the user to start programming with a blank controller. The controller shall have multiple knockouts sizes and locations, including the back of the cabinet, to facilitate installation and provide a clean professional look. The controller shall

have a factory default program that runs 10 minutes every day beginning 8 hours after power

The controller shall have a reset button to reset the controller in the case of micro-controller Olock-up[∆] due to power surges or frequent interruption to the power supply.

The controller shall be as manufactured by Rain Bird Corporation, Azusa, California.

5000 Plus Series Full and Reversing Full/Part Circle Sprinkler Specifications

The full and/or part circle sprinkler shall be a single stream, water lubricated, gear drive tupe The sprinkler shall have a flow shut-off device that is integrated into the flow path of the rotor as well as adjustable arc coverage of 40 to 360 degrees. Arc adjustment can be performed with or without the sprinkler in operation and shall require only a flat-blade screwdriver.

The sprinkler shall have a smoothed flow path entrance to enhance the flow characteristics of the rotor. In addition, the sprinkler shall feature a flow path to nozzle bore transition radius to minimize pressure loss and assure peak nozzle radius is achieved.

The sprinkler shall have a pressure activated multi-function wiper seal that positively seals against the pop-up stem to keep debris out of the rotor and to clean debris from the pop-up stem as it retracts. This wiper seal shall prevent sprinkler from sticking up, and be capable of sealing the sprinkler cap to sprinkler body under normal operating pressures.

The sprinkler shall have a screen installed in the pop-up stem to filter inlet water, protect the drive from clogging and simplify its removal for cleaning and flushing of the system. It shall have a 3/4" (FNPT) bottom inlet.

The sprinkler shall have a standard green rubber cover and a strong stainless steel retract spring for positive pop down. Pop-up height as measured from the top of the cap at normal

The sprinkler shall have 12 interchangeable nozzles: 8 Rain Curtain nozzles for superior coverage and 4 Low Angle nozzles for reduced radius of throw and superior wind resistance with all nozzles containing Micro-Ramp± for superior close-in watering. The angle of trajectory shall be 25 degrees for the Rain Curtain nozzles and 10 degrees for the low angle nozzles. The sprinkler shall come with a stainless steel adjusting screw capable of reducing the radius up to

The sprinkler shall be as manufactured by Rain Bird Corporation, Azusa, California.

SPRAY HEADS

1802, 1803, 1804, 1806, and 1812 Pop-up Full or Part Circle Spray Sprinkler

installation to the middle of the nozzle orifice shall be 4".

The sprinkler body, stem, nozzle, and screen shall be constructed of heavy-duty, ultra-violet resistant plastic. It shall have a heavy-duty stainless steel retract spring for positive pop-down and a ratcheting system for easy alignment of the pattern. The sprinkler shall have a soft elastomer pressure activated co-molded wiper seal for cleaning debris from the pop-up stem as it retracts into the case to prevent the sprinkler from sticking up and to minimize "flow-by".

The sprinkler shall have a matched precipitation rate (MPR) plastic or brass nozzle with an adjusting screw capable of regulating the radius and flow. The sprinkler shall be capable of housing protective, non-clogging filter screens or pressure compensating screens (PCS) under the nozzles. The screen shall be used in conjunction with the adjusting screw for regulating. The 6" (15 cm) and 12" (30 cm) models shall have both a side and bottom 1/2" (15/21) Female National Pipe Thread inlet (FNPT) for ease of installation.

The sprinkler shall have a Pop-Top (TM) Flush Plug pre-installed. The plug shall prevent debris from clogating the sprinkler during installation and allow for system to be flushed before nozzling. The pluq shall be bright orange in color and constructed of polypropylene material.

The sprinkler shall be as manufactured by Rain Bird Corporation, Azusa, California

ELECTRIC REMOTE CONTROL VALVES

100-PGA 150-PGA 200-PGA Electric Remote Control Plastic Globe/Angle Valve With Optional PRS-D Pressure Regulating Feature

The electric remote control valve shall be a normally closed 24 VAC 50/60 Hz (cycles/second) solenoid actuated globe/angle pattern design.

The valve pressure rating shall not be less than 150 PSI (10,35) Bars.

The valve body and bonnet shall be constructed of high impact, weather resistant PVC with stainless steel screws.

The valve shall have manual open/close control (internal bleed) for manually opening and closing the valve without electrically energizing the solenoid. The valve's internal bleed shall prevent flooding of the valve box.

The valve shall house a fully-encapsulated, one-piece solenoid. The solenoid shall have a captured plunger with a removable retainer for easy servicing, and a leverage handle for easy turning. This 24 VAC 50/60 Hz solenoid shall open with 19.6 VAC minimum at 150 psi (10,35 bar). At 24 VAC, average inrush current shall not exceed 0.41 amps. Average holding current shall not exceed 0.28 amps.

The valve shall have a flow control stem for accurate manual regulation and/or shut off of outlet flow. The valve must open or close in less than I minute at 150 PSI (10,35 bar), and less than 30 seconds at 20 PSI (1,38 bar).

The valve construction shall provide for all internal parts to be removable from the top of the valve without disturbing the valve installation. The body shall have a removable O-ringed plug for installation in either globe or angle configuration.

The valve shall be as manufactured by Rain Bird Corporation, Azusa, California.

DRIP TRRIGATION COMPONENTS

A. Rain Bird Control Zone Kits

- General Information
- b. Control zone kit assemblies for dripline irrigation zones must include control valve,

a. Provide control zone kits manufactured by Rain Bird as indicated on construction

- filtration, and pressure regulation components sized to meet the hydraulic demands and flow requirements of the zones that they service.
- 2. Rain Bird Low Flow Control Zone Kit for dripline zones with flows from 0.2 to 5.0 GPM (0.8 to 18.9 lpm), including low flow valve (LFV) and pressure regulating filter (PRF).
- a. Available model numbers: I) XCZ-O75-PRF [$\frac{3}{4}$ " (19 mm) Low Flow valve and $\frac{3}{4}$ " (19 mm) PR filter]
- 2) XCZ-LF-100-PRF [1" (25 mm) Low Flow valve and $\frac{3}{4}$ " (19 mm) PR filter] 3) XACZ-075-PRF [¾" (19 mm) Low Flow Anti-siphon valve and ¾" (19 mm) PR filter]
- b. Low Flow Valve (LFV) component specifications include: 1) Valve body and bonnet constructed of high impact, weather-resistant plastic,
- stainless steel and other chemical/UV resistant materials 2) Diaphragm with a double-knife seal, constructed of durable Buna-N rubber with a
- clog-resistant metering orifice
- 3) Energy-efficient, low-power encapsulated solenoid with captured plunger and 90 mesh (200 micron) solenoid filter
- 4) External bleed for manual system flushing during start-up, internal bleed for manual zone activation during maintenance operations
- 5) Inlet pressure rating: 20 to 120 PSI (1,4 to 8,3 bar)
- 6) Female threaded inlet and outlet connections 7) Anti-siphon valve configuration includes listed features and incorporates atmospheric vacuum breaker with I.A.P.M.O and A.S.S.E. listing approval
- c. Pressure Regulating Filter (PRF) combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. PRF component specifications include:
- 1) Compact "Y" filter body and cap configuration constructed of glass-filled, UV-resistant polypropylene, with 120 PSI (8,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 4 1/2" (11,4 cm), Length: 5 1/2" (14 cm), Width: 2" (5,1 cm)
- 2) Standard 200 mesh (75 micron) filter screen constructed of durable polyester fabric attached to propylene frame. Screen is serviceable for cleaning purposes by unscrewing cap from filter body and removing filter element.
- 3) Normally-open pressure regulating device with preset outlet pressure of approximately 30 PSI (2,1 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce
- 4) Male threaded $\frac{3}{4}$ " (19 mm) inlet and outlet connections.

- 3. Rain Bird Medium Flow Control Zone Kit for dripline zones with flows from 3.0 to 15.0 GPM (II.4 to 56.8 lpm), including Rain Bird DV or ASVF valve and pressure regulating filter (PRF).
- a. Available model numbers:
- I) XCZ-100-PRF [I" (25 mm) DV valve and I" (25 mm) PR filter] 2) XACZ-100-PRF [1" (25 mm) Anti-siphon Valve and 1" (25 mm) PR Filter]
- b. DV Valve component specifications include:
- 1) Valve body and bonnet constructed of high impact, weather-resistant plastic,
- stainless steel and other chemical/UV resistant materials 2) Diaphragm with a double-knife seal, constructed of durable Buna-N rubber with a cloq-resistant metering orifice
- 3) Energy-efficient, low-power encapsulated solenoid with captured plunger and 90
- mesh (200 micron) solenoid filter 4) External bleed for manual system flushing during start-up, internal bleed for
- manual zone activation during maintenance operations
- 5) Inlet pressure rating: 20 to 120 PSI (1.4 to 8.3 bar) 6) Female threaded inlet and outlet connections
- 7) Anti-siphon valve configuration includes listed features and incorporates atmospheric vacuum breaker with I.A.P.M.O and A.S.S.E. listing approval
- c. Pressure Regulating Filter (PRF) combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. PRF component specifications include:
- 1) Compact "Y" filter body and cap configuration constructed of glass-filled, UV-resistant polypropylene, with 120 PSI (8,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 4 1/2" (11,4 cm), Length: 5 1/2" (14 cm), Width: 2" (5,1 cm)
- 2) Standard 200 mesh (75 micron) filter screen constructed of durable polyester fabric attached to propylene frame. Screen is serviceable for cleaning purposes by unscrewing cap from filter body and removing filter element.
- 3) Normally-open pressure regulating device with preset outlet pressure of approximately 40 PSI (2,8 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce downstream pressure.
- 4) Male threaded I" (25 mm) inlet and outlet connections.

- 4. Rain Bird Medium Flow Commercial Control Zone Kit for dripline zones with flows from 3.0 to 20.0 GPM (II.4 to 75.7 lpm), including PVC ball valve, Rain Bird PESB valve, and Rain Bird pressure regulating quick-check basket filter.
- a. Available model numbers: 1) XCZ-100-B-COM [1" (25 mm) PVC ball valve, 1" (25 mm) Rain Bird PESB valve, and I" (25 mm) PRB-QKCHK pressure regulating basket filter]
- b. PESB valve assembly component specifications include: l) I" (25 mm) PVC full-port ball valve with female threaded inlet and outlet
- 2) PESB valve body and bonnet constructed of durable glass-filled nylon, stainless steel and other chemical/UV resistant materials 3) Diaphragm constructed of a durable Buna-N rubber material reinforced with
- 4) One-piece solenoid with captured plunger and 90 mesh (200 micron) solenoid
- 5) External bleed for manual system flushing during start-up, internal bleed for
- 6) Inlet pressure rating: 20 to 200 PSI (1.4 to 13.8 bar) 7) Female threaded inlet and outlet connections

manual zone activation during maintenance operations

c. Pressure Regulating Quick Check Basket Filter combines filtration and pressure regulation in one integrated unit for protection of downstream components of drip irrigation system. Pressure regulating basket filter component specifications include:

- 1) Basket style body and jar-top cap constructed of heavy-duty glass-filled, UV-resistant polypropylene, with 150 PSI (10,3 bar) operating pressure rating. Maximum dimensions of filter body; Height: 6 1/2" (16,5 cm), Length: 6 1/2" (16,5 cm), Width: 3 1/2" (8,9 cm)
- 2) Indicator incorporated into filter cap that changes color from green to red
- during operation when the filter element requires cleaning. 3) Standard 200 mesh (75 micron) filter screen constructed of stainless steel attached to propylene frame. Screen is serviceable for cleaning purposes by
- unscrewing cap from filter body and removing filter element. 4) Normally-open in-line pressure regulating device, constructed of durable, UV resistant non-corrosive material able to accommodate an inlet pressure rating of not less than 150 PSI (10,3 bar), with preset outlet pressure of approximately 40 PSI (2,8 bar). Pressure regulating device allows full flow with minimal pressure loss unless inlet pressure is greater than preset level. As inlet pressure increases above preset level, internal spring compresses to reduce downstream pressure.
- 5) Male threaded I" (25 mm) inlet and outlet connections.

B. Rain Bird XF Series Dripline Components

- I. General Information
- a. Provide flexible dual-layered pressure-compensating inline XF Series Dripline manufactured by Rain Bird, with emitter spacing and dripline row spacing as indicated on construction drawings.
- Provide insert or compression fittings manufactured by Rain Bird that are compatible with inline emitter tubing as indicated on construction drawings.
- 2. Rain Bird XFD On-Surface Dripline with pressure-compensating inline emitters. a. Available Rain Bird XFD On-Surface Dripline model numbers for POTABLE water systems; brown colored dripline tubing with emitter flow rates and spacing as shown:
 - 1) Rain Bird XFD-06-12; O.6 GPH (2,3 lph) emitters spaced 12" (30,5 cm) on-center 2) Rain Bird XFD-06-18; 0.6 GPH (2,3 lph) emitters spaced 18" (45,7 cm) on-center 3) Rain Bird XFD-06-24; O.6 GPH (2,3 lph) emitters spaced 24" (61 cm) on-center
- 4) Rain Bird XFD-09-12; 0.9 GPH (3,4 lph) emitters spaced 12" (30,5 cm) on-center 5) Rain Bird XFD-09-18; 0.9 GPH (3,4 lph) emitters spaced 18" (45,7 cm) on-center 6) Rain Bird XFD-09-24; 0.9 GPH (3,4 lph) emitters spaced 24" (61 cm) on-center
- Available Rain Bird XFDP On-Surface Dripline model numbers for NON-POTABLE water systems; purple colored dripline tubing with emitter flow rates and spacing as shown: 1) Rain Bird XFDP-06-12; O.6 GPH (2,3 lph) emitters spaced 12" (30,5 cm)
 - 2) Rain Bird XFDP-06-18; O.6 GPH (2,3 lph) emitters spaced 18" (45,7 cm)
 - 4) Rain Bird XFDP-09-12; 0.9 GPH (3,4 lph) emitters spaced 12" (30,5 cm) 5) Rain Bird XFDP-09-18; 0.9 GPH (3,4 lph) emitters spaced 18" (45,7 cm) on-center

3) Rain Bird XFDP-06-24; 0.6 GPH (2,3 lph) emitters spaced 24" (61 cm) on-center

- 6) Rain Bird XFDP-09-24; O.9 GPH (3,4 lph) emitters spaced 24" (61 cm) on-center c. Dripline tubing material specifications and features include: 1) XFD tubing; brown in color, conforming to an outside diameter (O.D.) of 0.634 inches (16 mm) and an inside diameter (1.D.) of 0.536 inches (13,6 mm) and wall
- thickness of 0.049 inches (1,2 mm) 2) XFDP tubing; purple in color, conforming to an outside diameter (O.D.) of 0.634 inches (16 mm) and an inside diameter (1.D.) of 0.536 inches (13,6 mm) and wall thickness of 0.049 inches (1,2 mm)
- 3) Factory installed, pressure-compensating, inline emitters welded to the inner circumference of the polyethylene tubing at spacing specified by model number 4) Inline emitters designed to pressure-compensate by lengthening the emitter's
- turbulent flow path (Rain Bird patent pending) 5) Consistent flow rate from each installed inline emitter when emitter inlet pressure is supplied between recommended operating range of 8.5 to 60 PSI
- (0.7 to 4.1 bar) 6) Required filtration for XF Series dripline tubing and emitters is 120 mesh (125

PART 3 - EXECUTION

3.01 INSPECTIONS AND REVIEWS

- A. Pre-construction Site Inspection
- I. Verify construction site conditions and note irregularities affecting work of this section. Report irregularities in writing to Owner's Representative prior to beginning work. Commencement of work implies acceptance of existing site conditions.
- B. Utility Locates ("Call Before You Diq") I. Arrange and coordinate Utility Locates with local authorities prior to construction.
- 2. Repair underground utilities that are damaged during construction. Make repairs at no additional cost to contract price. 3,02DRIPLINE LAYOUT OF WORK
- A. Stake out dripline irrigation system. Items staked include manifold/header pipe and tubing, sleeves, control zone assemblies, flush valves, air relief valves, and check valves. B. Dripline Irrigation System Layout Review: Dripline irrigation system layout review will occur
- review. Modifications will be identified by Owner's Representative at this review. 3.03DRIPLINE EXCAVATION, TRENCHING, AND BACKFILL
- A. Excavate and install pipes at minimum cover indicated in drawings or specifications. Excavate trenches at appropriate width for connections and fittings.

after staking has been completed. Notify Owner's Representative one week in advance of

- Minimum cover for dripline components (distance from top of pipe to finish grade): I. Buried PVC manifold and supply header pipe to dripline grid layouts: 12" (30,5 cm) to top of pipe.
- 2. Buried dripline lateral pipe downstream PVC manifold and supply header pipe: 4" (10 On-grade dripline lateral pipe downstream PVC manifold and supply header pipe: Secure to finish grade with approved tubing stakes. Install and test prior to installation of landscape
- fabric and mulch. C. Backfill only after buried lines have been reviewed, tested, and approved.
- D. Excavated material is generally satisfactory for backfill. Use backfill free from rubbish, vegetable matter, frozen materials, and stones larger than 2" (50 mm) in maximum diameter. Remove material not suitable for backfill. Use backfill free of sharp objects next to pipe. E. Dress backfilled areas to original grade. Incorporate excess backfill into existing site grades. Dispose of excess backfill off site
- Contact Owner's Representative for trench depth adjustments where utilities conflict with irrigation trenching and pipe work.

Keep ends of assembled pipe capped. Remove caps only when necessary to continue

<u>3.04ASSEMBLING PIPE AND FITTINGS</u>

- A. General:
- I. Keep pipe free from dirt and debris. Cut pipe ends square, debur and clean as recommended by pipe manufacturer.
- B. PVC Pipe and Fittings:
 - 1. Use only strap-type friction wrenches for threaded plastic pipe.
 - 2. PVC Solvent Weld Pipe and Fittings:
- a. Use appropriate primer and solvent cement. Join pipe in manner recommended by pipe and fitting manufacturers and in accordance with accepted industry practices. b. Cure for thirty (30) minutes before handling and twenty-four (24) hours before pressurizing or installing with vibratory plow.
- Snake pipe from side to side within trench.
- 3. PVC Threaded Connections:
- a. Use only factory-formed threads. Field-cut threads are not permitted. b. Apply thread sealant in manner recommended by component, pipe and sealant
- manufacturers and in accordance with accepted industry practices. C. Dripline Tubing and Fittings: Use only Rain Bird XF-Series Insert Fittings or Rain Bird Easy Fit Compression Fittings

the Manufacturer's representative for the specific site and system conditions.

a. Install dripline tubing and fittings in manner recommended by manufacturer and in

for Rain Bird XF-Series dripline tubing connections or transitions as recommended by

3. Dripline Compression Fittings:

accordance with accepted industry practices.

a. Install dripline tubing and fittings in manner recommended by manufacturer and in accordance with accepted industry practices. 3.05 INSTALLATION OF DRIPLINE IRRIGATION COMPONENTS

- A. Control Zone Kit Assembly:
- I. Flush mainline pipe before installing Control Zone Kit assembly.
- 2. Locate where shown on drawings, Connect control wires to remote control valve wires using specified wire connectors and waterproof sealant. Provide connectors and sealant per manufacturer's recommendations.
- Install a maximum of four (4) Low Flow or Medium Flow Control Zone Kits per standard rectangular valve box. Install a maximum of one (1) Medium Flow Commercial Control Zone Kits per standard rectangular valve box. Install a maximum of one High Flow Commercial Control Zone Kits per jumbo rectanqular valve box.
 - a. Locate valve boxes at least I" (30,5 cm) from, and align with, nearby walls or edges of paved areas.
- b. Group Control Zone Kit assemblies together where practical, Alian grouped valve boxes in uniform patterns. Allow at least 12" (30,5 cm) between valve boxes.
- c. Brand controller letter and station numbers on valve box lid in 2" (50 mm) high letters. B. Lateral Piping and Dripline Tubing:
- I. Install lateral piping and dripline tubing at locations and in grid patterns as indicated on drawings and installation details, and in strict accordance with manufacturer 2. Thoroughly flush PVC lateral piping, supply headers, and dripline tubing immediately upon
- C. Air Relief Valve Kit Assembly: Install at all high points in dripline tubing grid as shown and
- directed on drawings and installation details. D. Flush Point Assembly: Install in flush header or at ends of each dripline zone segment as shown and directed on drawings and installation details. Install at least 12-inches from and align
- with adjacent walls or edges of paved areas. 3.06PROJECT RECORD (AS-BUILT) DRAWINGS
- A. Document field changes from original design and construction documents. Maintain on-site and separate from original construction documents, one complete set of documents labeled "Project Field Documents". Keep documents current. Do not permanently cover work until accurate "record drawings" information is recorded.
- B. Record pipe network alterations on a daily basis. Record work that is installed differently than shown on construction documents. Record accurate reference dimensions, measured from at least two permanent reference points, of each control zone kit assembly, each dripline zone boundary, each air relief valve assembly, each flush point assembly, and other dripline irrigation components enclosed within valve box.
- C. Obtain from Owner's Representative one set of drawings or CAD files prior to construction completion. Duplicate information contained on "Record Documents" maintained on-site using technical drafting pen or AutoCAD. Label each sheet "Record Drawing".
- D. Provide "Record Drawings" to Owner's Representative. Completion of Record Drawings is required prior to final construction review at completion of irrigation system installation. 3.07 WINTERIZATION AND SPRING START-UP
- A. Winterize irrigation system in fall following completion, or partial completion, of irrigation system construction. Start-up irrigation system in spring following completion, or partial completion, of irrigation system construction. Repair any damage caused in improper winterization at no additional cost to Owner. Coordinate winterization and start-up with landscape maintenance
- A. Maintain irrigation system for duration of 30 calendar days from formal written acceptance by Owner's Representative. Make periodic examinations and adjustments to irrigation system components in order to achieve the most efficient and uniform application of water. B. Following completion of Contractor's maintenance period, Owner will be responsible for maintaining system in working order during remainder of quarantee/warranty period, for performing necessary minor maintenance, for protecting against vandalism, and for preventing damage after landscape maintenance operation.
- A. Remove from site machinery, tools, excess materials, and rubbish upon completion of work.

Valve Box Specifications

3.08 MAINTENANCE

The valve box shall have corrugated sides.

or other means of identification.

VB-6RND SERIES 6" Round Valve Boxes Valve boxes shall be used as durable, rigid enclosures for valves or other irrigation system components requiring subsurface protection for installation or maintenance. The valve box shall be made of HDPE resin that is resistant to UV light, weather, moisture, and chemical action of

The body shall have two openings molded into the sides.

Lids shall have beveled edges to prevent or minimize potential damage from lawn equipment.

The valve box shall be manufactured by Rain Bird Corporation, Glendora, California. VB-IORND IO△ Round Valve Boxes Valve boxes shall be used as durable, rigid enclosures for valves or other irrigation system

be made of structural foam HDPE resin that is resistant to UV light, weather, moisture, and chemical action of soils. The body shall have knock-outs molded into the sides that can easily be removed. The

knock-outs shall remain an integral part of the body unless to run pipes or wires through the

components requiring subsurface protection for installation or maintenance. The valve box shall

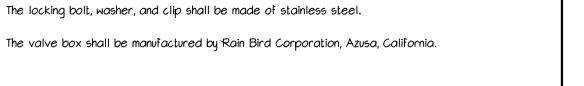
The valve box shall have corrugated sides. The valve box shall have a stepped feature on the bottom that securely interlocks two boxes together when mated bottom - to-bottom for use in a

deep installation. There shall be no hole in the valve box lid unless the bolt-hole knock-out is removed in order to use the locking bolt. Lids shall have beveled edges to minimize potential damage from lawn equipment. Lids shall be clearly marked with the words "Irrigation Control Valve" molded onto the top. Lids shall have a marking area measuring at least 6" by 2" that is suitable for branding

ROTOR POP-UP SPRINKLER - 5004

NOT TO SCALE

The locking bolt, washer, and clip shall be made of stainless steel.



(1) FINISH GRADE

(4) PVC SCH 40 ELL

(6) PVC LATERAL PIPE

) ROTOR POP-UP SPRINKLER:

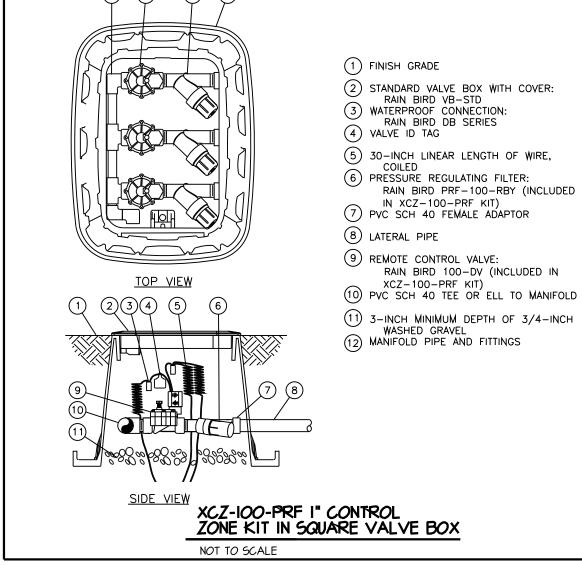
RAIN BIRD 5004

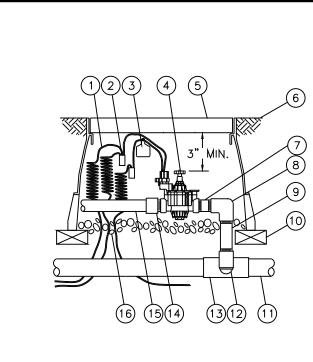
(3) PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)

(5) PVC SCH 40 STREET ELL

7) PVC SCH 40 TEE OR ELL

-INDOOR WALL -1) MODULAR HYBRID CONTROLLER RAIN BIRD ESP-4Mi INSIDE WALL MOUNT 2) 1-INCH PVC SCH 40 CONDUIT (3) WIRES TO REMOTE CONTROL INSIDE FRONT COVER - INDOOR WALL -(1) OPTIONAL MODULES FOR 13-STATION CONTROLLER (2) (7) WIRES TO REMOTE CONTROL INSIDE CONNECTION MODULAR HYBRID CONTROLLER ESP-MODULAR SERIES (OUTDOOR) NOT TO SCALE





1 30-INCH LINEAR LENGTH OF WIRE, COILED (3) ID TAG: RAIN BIRD VID SERIES

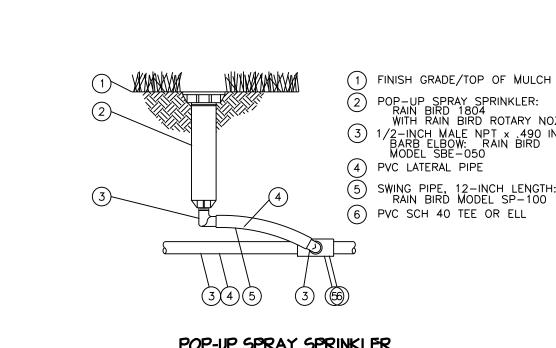
(6) FINISH GRADE/TOP OF MULCH 7) PVC SCH 80 NIPPLE (CLOSE) (8) PVC SCH 40 ELL

9 PVC SCH 80 NIPPLE (LENGTH AS REQUIRED) (10) BRICK (1 OF 4) 11) PVC MAINLINE PIPE 12) SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL

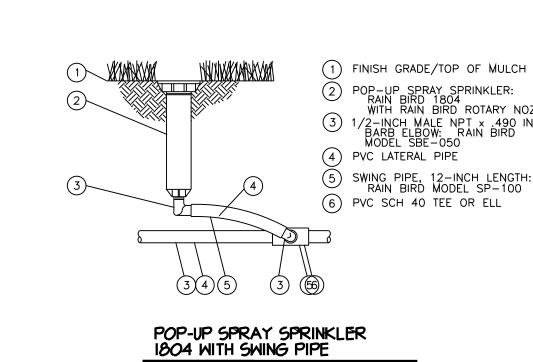
(15) PVC LATERAL PIPE

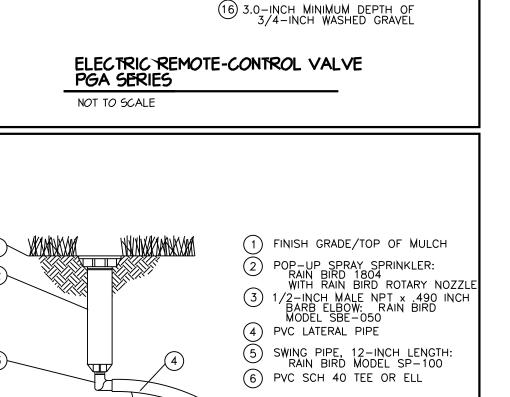
(13) PVC SCH 40 TEE OR ELL

(14) PVC SCH 40 MALE ADAPTER



NOT TO SCALE



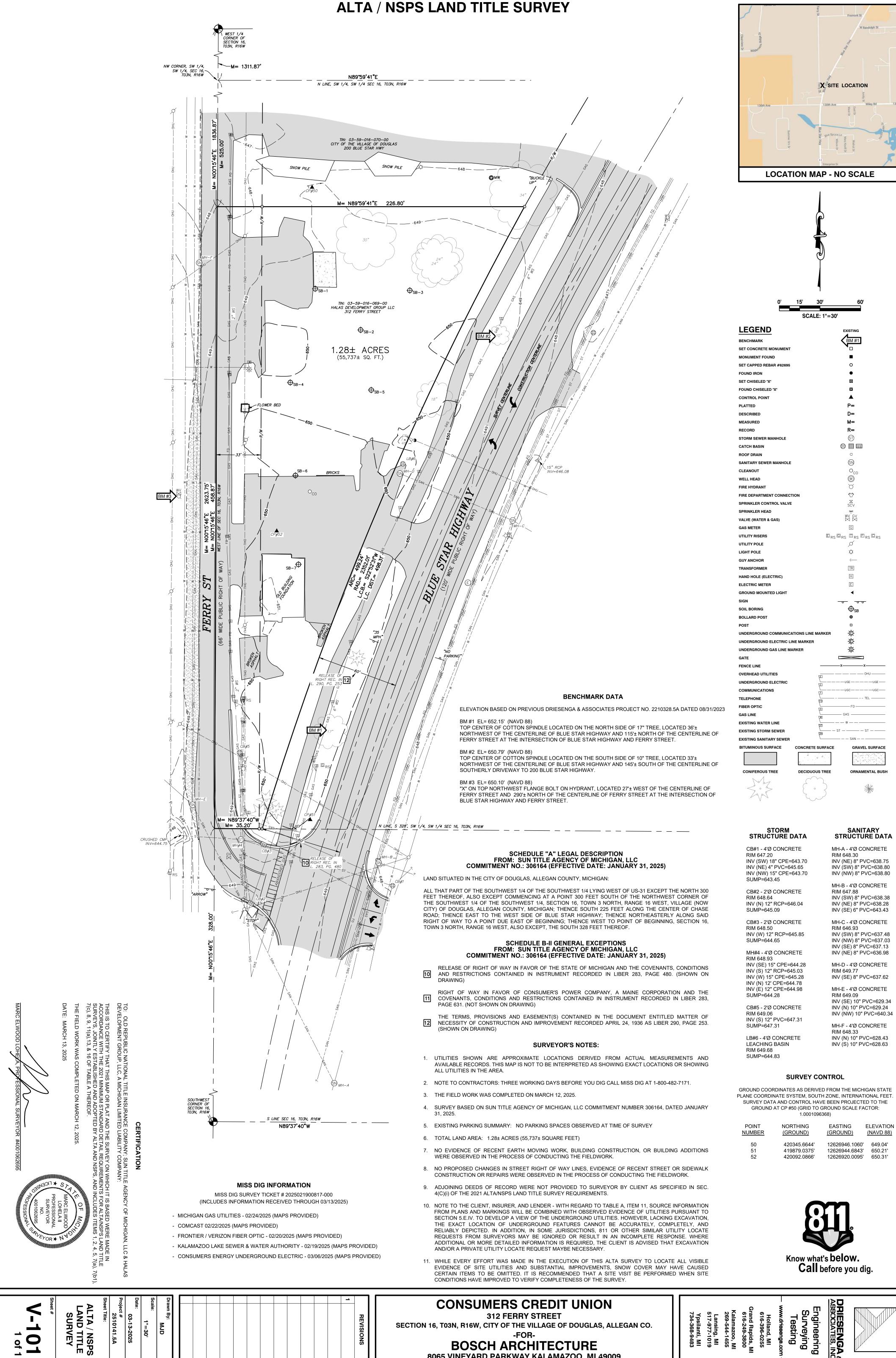




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312 FERRY STREET

SECTION 16, T03N, R16W, CITY OF THE VILLAGE OF DOUGLAS, ALLEGAN CO.

BOSCH ARCHITECTURE 8065 VINEYARD PARKWAY KALAMAZOO, MI 49009

REVISIONS