

Appendix A - Existing Conditions

In this section:

- Existing Conditions Maps

The following maps are available in the City of Deadwoods GIS system for Main Street: manholes, sanitary sewer system, water system, storm sewer system, street lights, property lines, study area, street centerlines, and aerial imagery. These maps are not representative of the updated field survey since the weather has not permitted Ferber Engineering to complete the survey effort. The signage map is in the process of being developed.

The maps below were also developed from the City of Deadwoods GIS system for the Main Street Master Planning efforts:

- Existing Conditions - Planning Map (identifies the location of a various of Main Street assets, building footprints and parcel lines for planning purposes)
- Topography - Planning Map
- Historic Structures - Planning Map

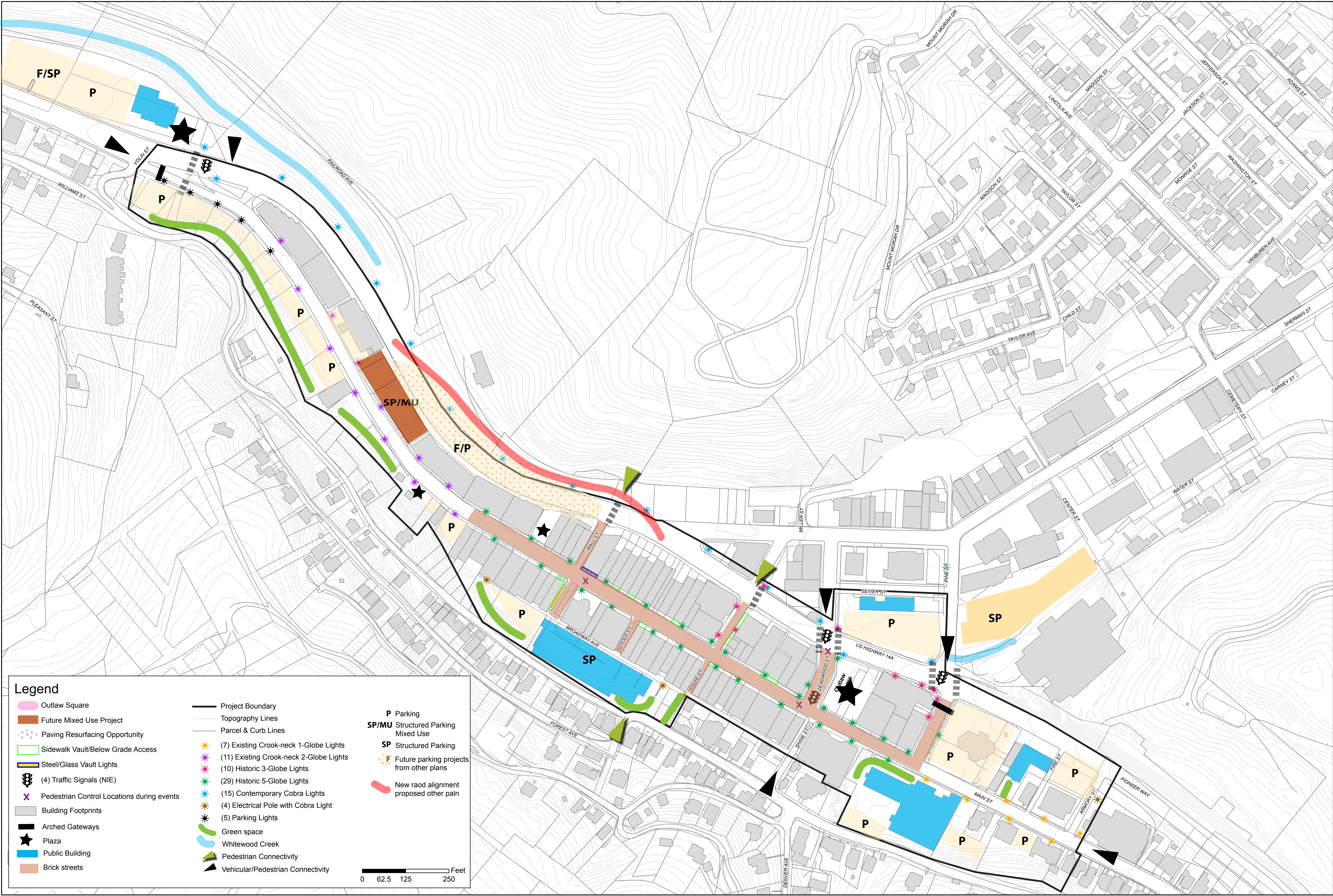
- Existing Conditions Maps & Vault Tour

The following list of documents is an assembly of pertinent construction CDs that help to inform the location of newly constructed, and yet to be constructed Main Street improvements. These aren't as-built drawings, but do help to inform the project.

- Outlaw Square Construction Documents (partial set & product cut sheets)
 - Site Plan
 - Various Pages of Product Cut Sheets
- 1991 Construction Documents (partial set & product cut sheets)
- Lower Main Visitor Center Construction Documents (site plans x 3)
- Four Point Construction Documents (site plan)
- Gateway Construction Documents (site plans x 2)

In addition, there is a preliminary vault tour map and summary. This information provides a high-level understanding of the current underground conditions along Main Street sidewalks. It identifies some locations where further professional engineering studies and improvements will need to be conducted. Many of the vault and similar type covers are historic and should be reinstalled during Main Street improvements. There are several vault covers with glass pucks that should be reconstructed for historic interpretive purposes as well.

- Vault Tour Email Summary and Map





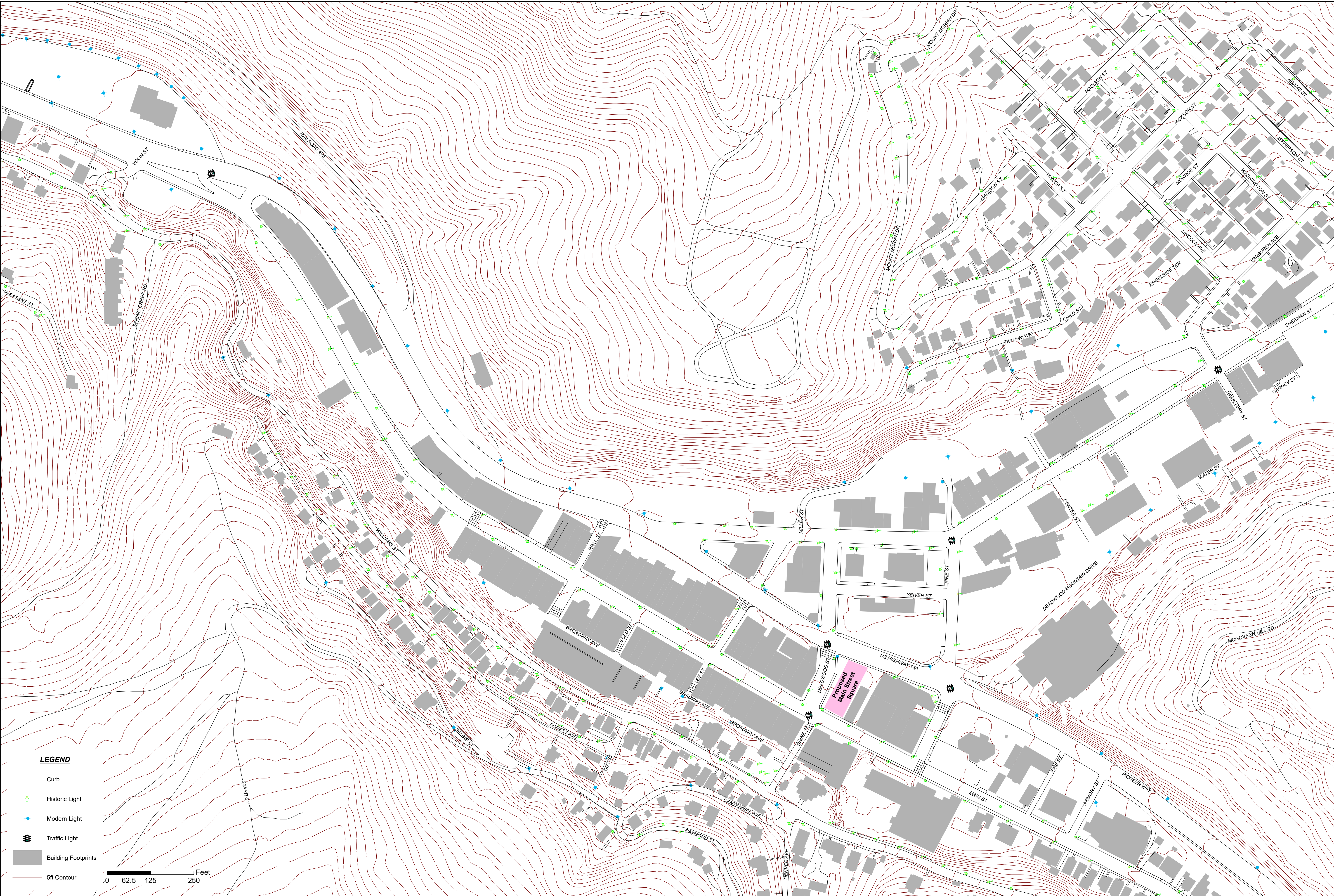
Prepared By:



Prepared For:

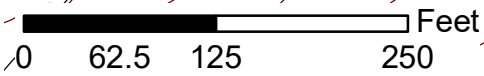


CITY OF DEADWOOD
Existing Conditions &
Potential Main Street Improvements Map
for high-level cost estimates
March 5, 2019



LEGEND

- Curb
- Historic Light
- Modern Light
- Traffic Light
- Building Footprints
- 5ft Contour



North arrow pointing North.

Prepared By:

Ferber Engineering Company, Inc.

Prepared For:

DEADWOOD
1876
HISTORIC PRESERVATION

CITY OF DEADWOOD
MAINSTREET MASTER PLAN
SOUTH DAKOTA

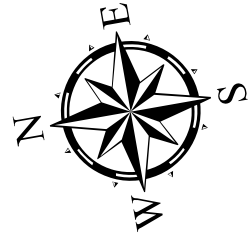
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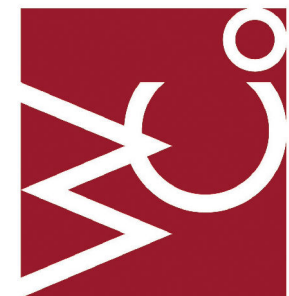
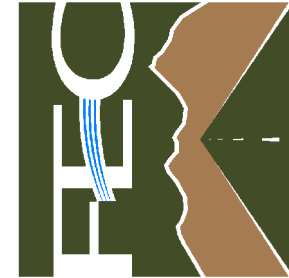
OVERVIEW
PLANNING
MAP

Sheet:

1



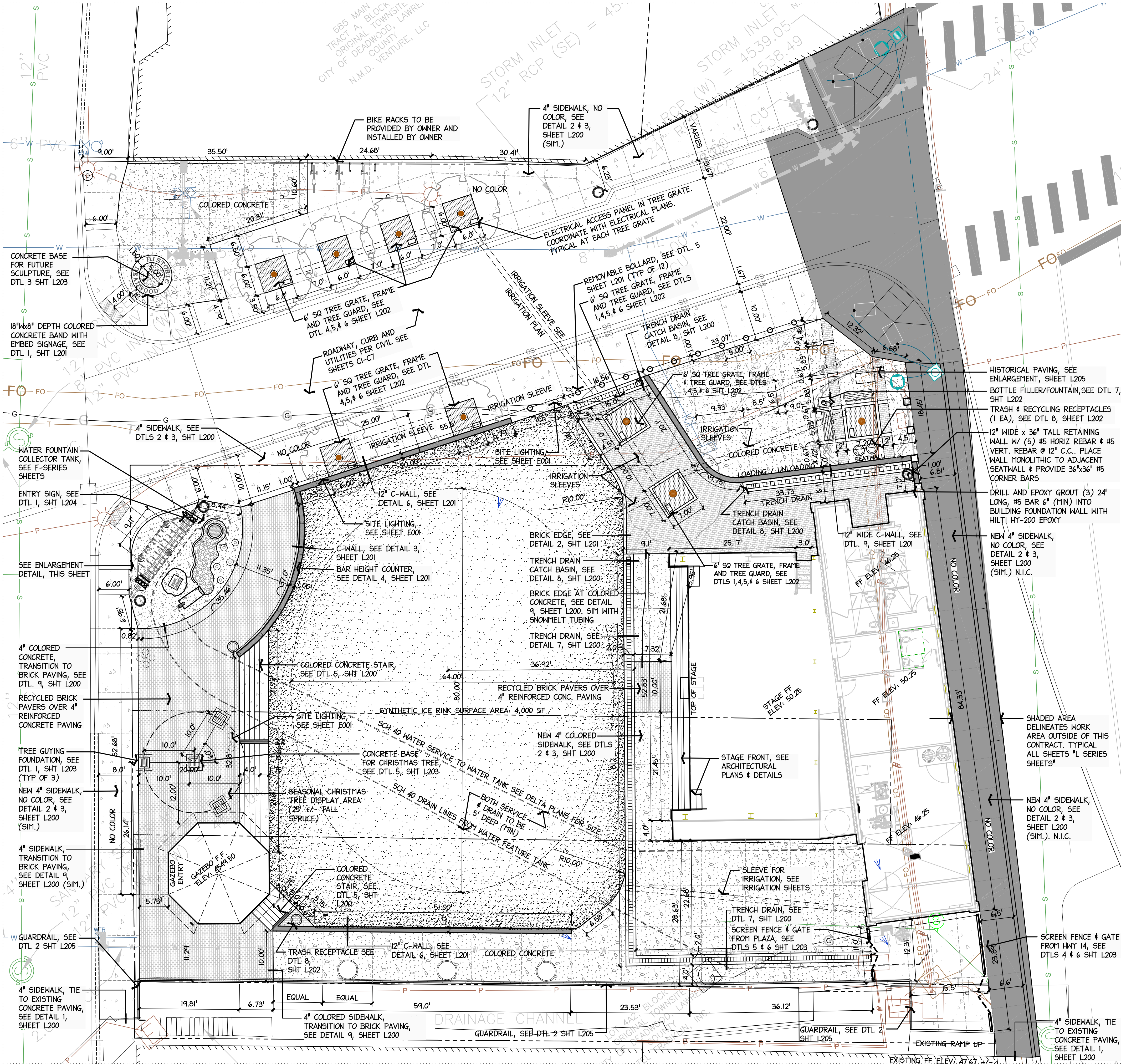
Prepared By:
Ferber Engineering Company, Inc.



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CITY OF DEADWOOD
MAINSTREET MASTER PLAN
SOUTH DAKOTA

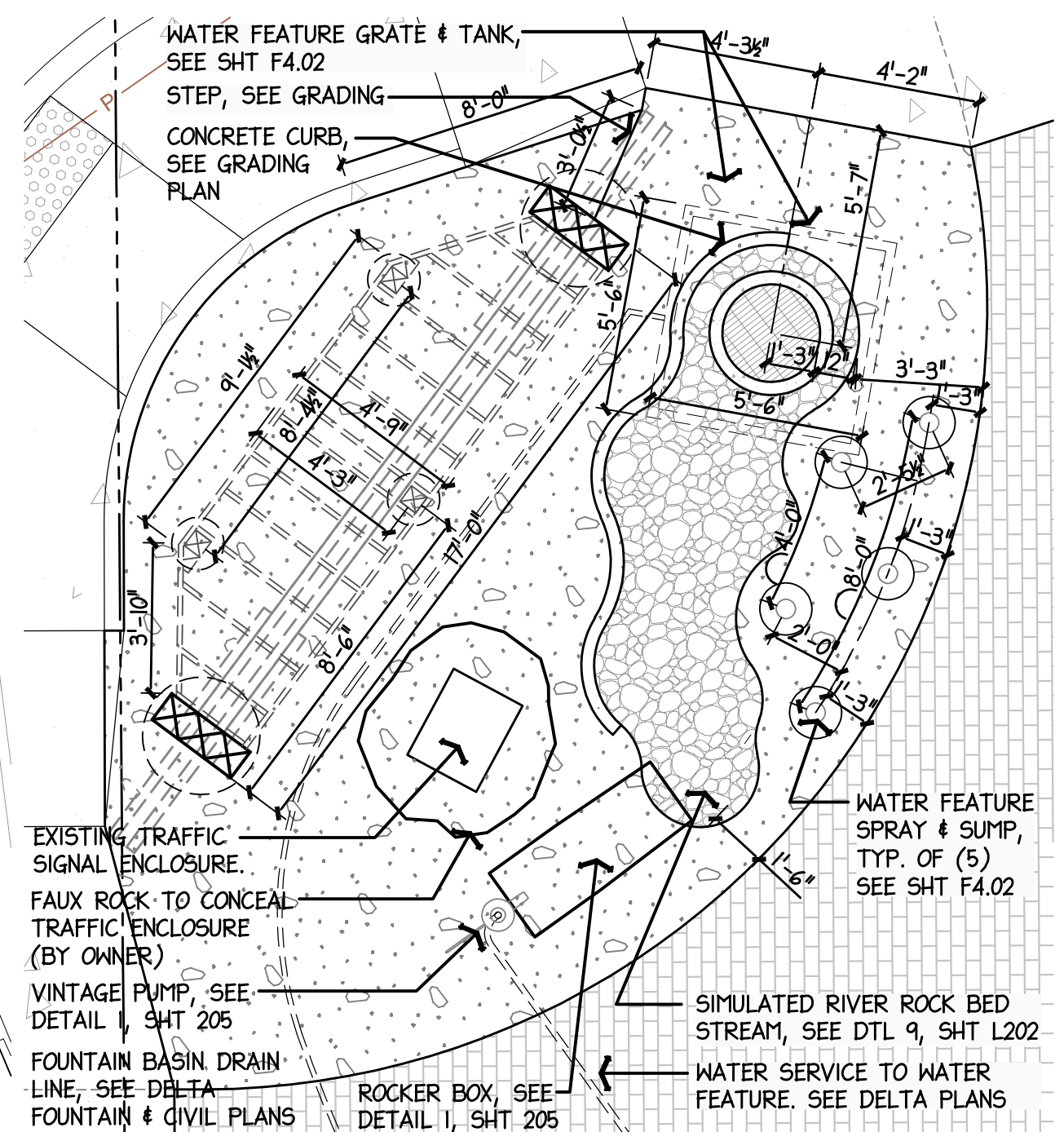
Sheet Title:
HISTORIC STRUCTURES

Sheet:
1



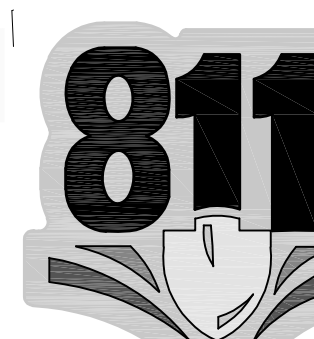
GENERAL NOTES:

1. THIS PROJECT REQUIRES COORDINATION WITH THE CITY OF DEADWOOD PLANNING DEPT. THE AWARDED CONTRACTOR WILL NEED TO COORDINATE WITH THE OWNER ON THE CONSTRUCTION SEQUENCING AND COORDINATE WORK WITH THE MANY EVENTS THAT ARE SCHEDULED FOR DEADWOOD MAIN STREET.
2. ON-SITE VERIFICATION OF ALL DIMENSIONS & CONDITIONS SHALL BE THE RESPONSIBILITY OF THE GC. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALE, LARGER SCALE OVER SMALLER SCALE, ADDENDA & CLARIFICATIONS OVER PREVIOUS DOCUMENTS. FOR DIMENSIONS OF EXISTING BUILDINGS, PROPOSED BUILDING IMPROVEMENTS, AND RELATED WORK, REFER TO THE ARCHITECTURAL DRAWINGS.
3. CAD DRAWINGS WILL BE PROVIDED TO THE CONTRACTOR THAT IS AWARDED THE CONTRACT FOR STAKING AND LAYOUT PURPOSES.
4. QUANTITIES LISTED ON ALL PROJECT SHEETS ARE FOR THE CONTRACTOR'S CONVENIENCE. ALL QUANTITIES ARE TO BE VERIFIED BY THE CONTRACTOR.
5. AWARDED CONTRACTOR WILL BE REQUIRED TO ACQUIRE ALL NECESSARY PERMITS, INCLUDING BUT NOT LIMITED TO GRADING PERMIT, EROSION & SEDIMENT CONTROL PERMIT, BUILDING PERMIT AS REQUIRED BY THE STATE AND LOCAL GOVERNING AGENCY OR COUNTY. WORK WITHIN SD HWY 14A ROW MUST MEET SD DOT SPECIFICATIONS.
6. CONTRACTOR SHALL COMPLETE ROW PERMIT PRIOR TO ANY WORK WITHIN SD DOT RIGHT OF WAY.
7. CONTACT LOCAL UNDERGROUND UTILITY SERVICES FOR UTILITY LOCATION & IDENTIFICATION, PRIOR TO COMMENCING WORK.
8. PERFORM EXCAVATION IN THE VICINITY OF UNDERGROUND UTILITIES WITH CARE AND BY HAND, IF NECESSARY. THE CONTRACTOR BEARS FULL RESPONSIBILITY FOR THIS WORK AND DISRUPTION OF DAMAGE TO UTILITIES SHALL BE REPAIRED IMMEDIATELY AND AT NO EXPENSE TO THE OWNER.
9. IF WORK REQUIRES ANY PART OF SD HIGHWAY 14A TO BE SHUT DOWN TEMPORARILY, CONTRACTOR SHALL COORDINATE WITH THE SD DOT REGION OFFICE, THE OWNER AND LANDSCAPE ARCHITECT ON THE TEMPORARY TRAFFIC CONTROLLING, SIGNAGE AND OTHER TRAFFIC CONTROL DEVICES. CONTRACTOR TO SUBMIT TRAFFIC CONTROL PLAN TO OWNER, SD DOT AND LANDSCAPE ARCHITECT.
10. ALL WALKWAYS, SURFACES, TREE GRATES, STAIRS & HANDRAILS ARE DESIGNED TO MEET AMERICAN DISABILITY ACT ACCESSIBILITY STANDARDS.
11. SEE IRRIGATION PLAN FOR IRRIGATION SLEEVE LOCATIONS. SLEEVE INSTALLATIONS WILL NEED TO BE COORDINATED WITH THE SITE CONSTRUCTION.
12. CONCRETE SLAB FINISHING: SCREED WITH STRAIGHTEDGE TO REMOVE LOW AND HIGH SPOTS BRINGING THE SURFACE TO THE REQUIRED FINISH ELEVATION OF SLOPE AND FLOAT WITH A STEEL FLOAT AT LEAST THREE (3) FEET IN WIDTH. WHEN THE CONCRETE HAS REACHED ITS INITIAL SET, FINISH WITH A STEEL TROWEL. USE A STEEL POWER TROWEL FOR LARGE AREAS. LEAVE FINISH ESSENTIALLY FREE OF TROWEL MARKS, UNIFORM IN TEXTURE & APPEARANCE AND PLANE TO THE CORRECT TOLERANCE. DUSTING THE SURFACE WITH DRY CEMENT, SAND, OR SPRINKLING WITH WATER IS PROHIBITED.
13. NO WETTING (WITH WATER) OF CONCRETE SURFACES DURING SLAB FINISHING OPERATIONS SHALL BE PERMITTED. NO CONCRETE FINISHING OPERATION SHALL BE PERMITTED WHILE THERE IS WATER ON THE SURFACE OF SLABS & OTHER FLATWORK. SURFACE EVAPORATION RETARDERS ARE PERMITTED.
14. FINISHES THAT ARE EXPOSED AND SUBJECT TO FOOT TRAFFIC SHALL RECEIVE A BROOM FINISH WITH A TEXTURE OF PLUS OR MINUS $\frac{1}{8}$ ".
15. TOPS OF WALLS WITH BEARINGS: STRIKE SMOOTH TOPS OF WALLS AND SIMILAR UNFORMED SURFACES THAT SHALL HAVE BEARINGS OR BEARING PADS, AND FINISH WITH A STEEL TROWEL.
16. CONCRETE STAIRS & SIDEWALKS: STRIKE SMOOTH TOPS OF STAIRS & WALKS. FINISH WITH A LIGHT BROOM PROVIDING A TEXTURE OF PLUS OR MINUS $\frac{1}{8}$ ".
17. COLORED CONCRETE SHALL BE CURED WITH WET BURLAP OR CURING BLANKETS. DO NOT SPRAY CONCRETE CURE ON COLORED CONCRETE.
18. HONEYCOMBED, DELAMINATED, SPALLING, & OTHER DEFECTIVE CONCRETE SHALL BE REMOVED IN ITS ENTIRETY OR TO ITS NEAREST TYPICAL EXPANSION JOINT. IF THE SURFACE OF CONCRETE IS DETERMINED TO BE DEFECTIVE, A SURFACE TREATMENT MAY BE ACCEPTABLE WITH APPROVAL OF THE OWNER AND LANDSCAPE ARCHITECT.
19. PROVIDE EXPANSION JOINTS WHERE CONCRETE FLATWORK MEETS VERTICAL STRUCTURES SUCH AS WALLS, CURBS, STEPS AND BUILDING ELEMENTS. EXPANSION JOINTS IN CONCRETE WALKWAYS SHALL BE LOCATED TWENTY FEET 20'-0" O.C. MAXIMUM OR AS INDICATED.
20. WARRANTY PERIOD: OWNER REQUIRES THAT THE PROJECT CONTRACTOR WARRANT AND GUARANTEE ITS WORK AGAINST DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR, COMMENCING ON THE DATE OF THE OWNER'S ACCEPTANCE OF THE WORK. OWNER WILL REQUIRE THE PROJECT CONTRACTOR TO CORRECT ANY CONSTRUCTION DEFECTS OR INCOMPLETE WORK IDENTIFIED BY OWNER'S REPRESENTATIVE DURING THE WARRANTY PERIOD AT THE CONTRACTOR'S SOLE EXPENSE.
21. OWNER AGREES TO MAKE A WARRANTY INSPECTION(S) WITHIN THE WARRANTY PERIOD. OWNER'S REPRESENTATIVE AND THE PROJECT CONTRACTOR AT THEIR OPTION IF DESIRED MAY BE PRESENT DURING THE WARRANTY INSPECTION(S) BY OWNER.
22. REFER TO THE CIVIL ENGINEERING PLANS FOR SPECIFICS ON THE THE ROADWAY LAYOUT, STRIPING, ROADWAY SIGNAGE & DIRECTIONAL TURN ARROWS.



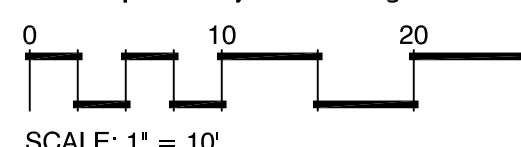
ENLARGEMENT

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



**Know what's below.
Call before you dig.**

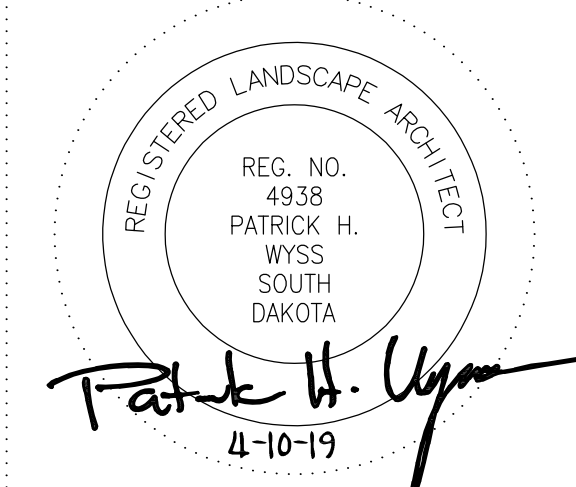
The locations of all existing utilities are shown in an approximate location. The Contractor is responsible for coordination and location of all existing utilities. Contractor is fully responsible for any and all damages resulting from the Contractor's failure to exactly locate and preserve any and all existing utilities.



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OUTLAW SQUARE BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

SITE LAYOUT PLAN

ISSUED FOR: DATE:

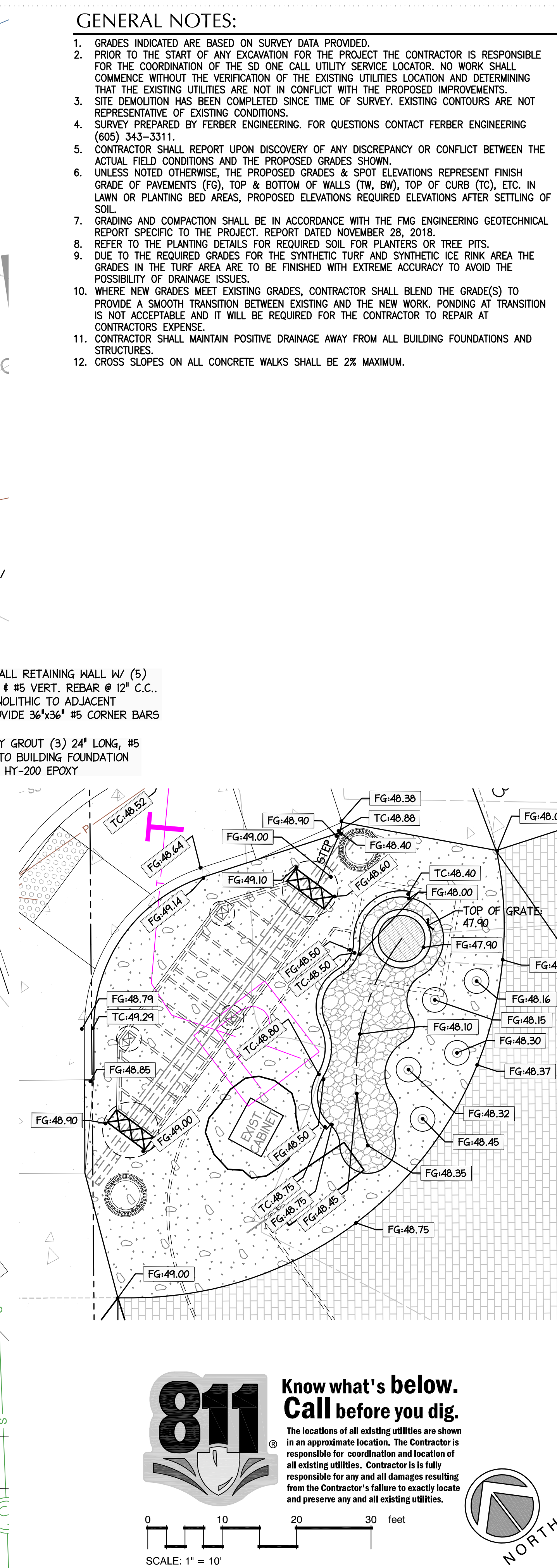
PROJECT STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: CMW CHECKED BY: PHW

DATE:
4/10/2019 SHEET NO:

PROJECT NO:
L100

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1. GRADES INDICATED ARE BASED ON SURVEY DATA PROVIDED.
2. PRIOR TO THE START OF ANY EXCAVATION FOR THE PROJECT THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE SD ONE CALL UTILITY SERVICE LOCATOR. NO WORK SHALL COMMENCE WITHOUT THE VERIFICATION OF THE EXISTING UTILITIES LOCATION AND DETERMINING THAT THE EXISTING UTILITIES ARE NOT IN CONFLICT WITH THE PROPOSED IMPROVEMENTS.
3. SITE DEMOLITION HAS BEEN COMPLETED SINCE TIME OF SURVEY. EXISTING CONTOURS ARE NOT REPRESENTATIVE OF EXISTING CONDITIONS.
4. SURVEY PREPARED BY FERBER ENGINEERING. FOR QUESTIONS CONTACT FERBER ENGINEERING (605) 343-3311.
5. CONTRACTOR SHALL REPORT UPON DISCOVERY OF ANY DISCREPANCY OR CONFLICT BETWEEN THE ACTUAL FIELD CONDITIONS AND THE PROPOSED GRADES SHOWN.
6. UNLESS NOTED OTHERWISE, THE PROPOSED GRADES & SPOT ELEVATIONS REPRESENT FINISH GRADE OF PAVEMENTS (FG), TOP & BOTTOM OF WALLS (TW, BW), TOP OF CURB (TC), ETC. IN LAWN OR PLANTING BED AREAS, PROPOSED ELEVATIONS REQUIRED ELEVATIONS AFTER SETTLING OF SOIL.
7. GRADING AND COMPACTION SHALL BE IN ACCORDANCE WITH THE FMG ENGINEERING GEOTECHNICAL REPORT SPECIFIC TO THE PROJECT. REPORT DATED NOVEMBER 28, 2018.
8. REFER TO THE PLANTING DETAILS FOR REQUIRED SOIL FOR PLANTERS OR TREE PITS.
9. DUE TO THE REQUIRED GRADES FOR THE SYNTHETIC TURF AND SYNTHETIC ICE RINK AREA THE GRASS IN THE TURF AREA ARE TO BE FINISHED WITH EXTREME ACCURACY TO AVOID THE POSSIBILITY OF DRAINAGE ISSUES.
10. WHERE NEW GRADES MEET EXISTING GRADES, CONTRACTOR SHALL BLEND THE GRADE(S) TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND THE NEW WORK. PONDING AT TRANSITION IS NOT ACCEPTABLE AND IT WILL BE REQUIRED FOR THE CONTRACTOR TO REPAIR AT CONTRACTORS EXPENSE.
11. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS AND STRUCTURES.
12. GROSS SLOPES ON ALL CONCRETE WALKS SHALL BE 2% MAXIMUM.

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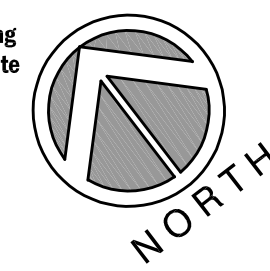
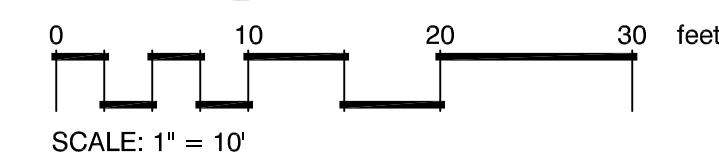


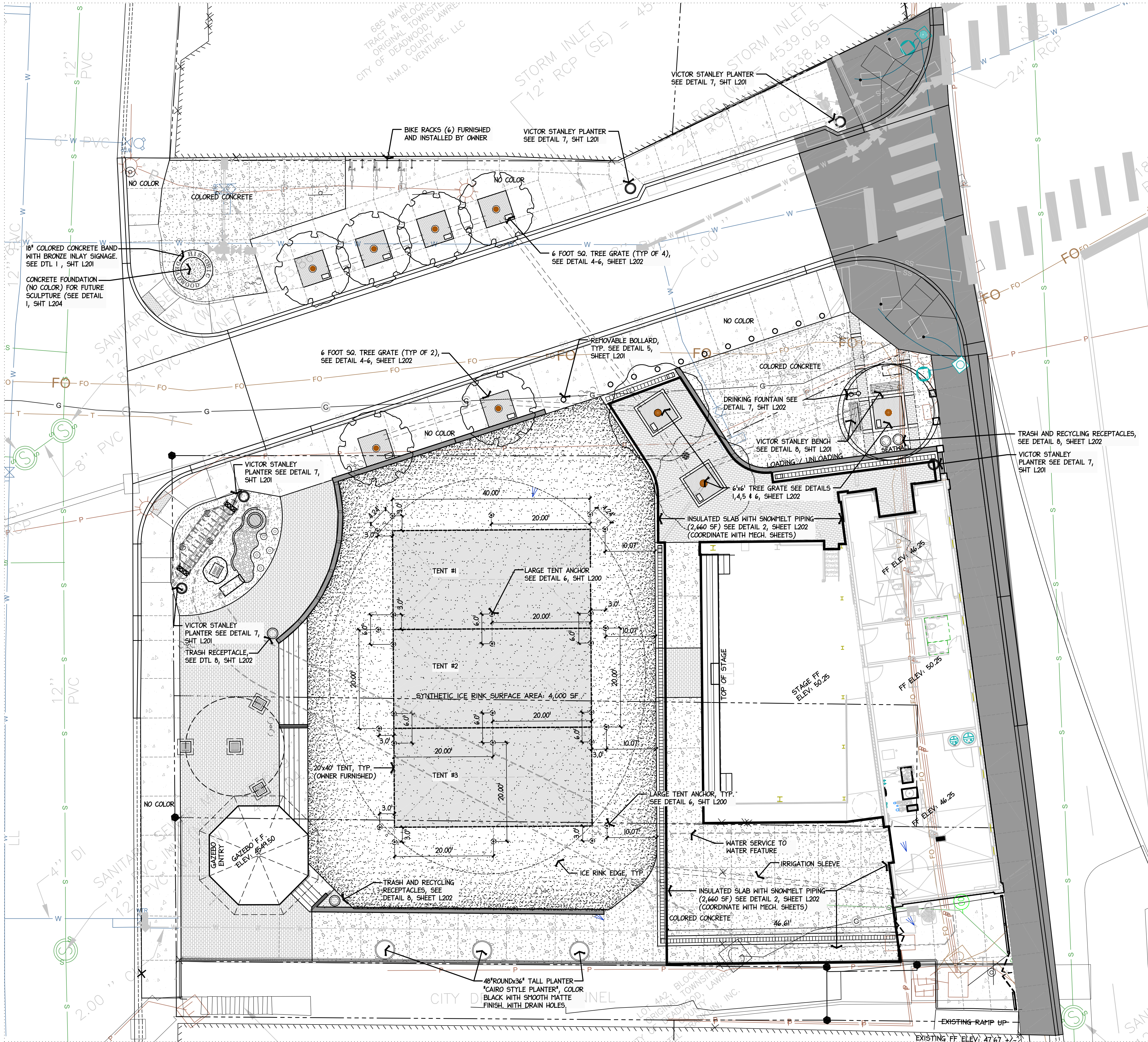
PROJECT NO: **L101**



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Call before you dig.**

The locations of all existing utilities are shown in an approximate location. The Contractor is responsible for coordination and location of all existing utilities. Contractor is fully responsible for any and all damages resulting from the Contractor's failure to exactly locate and preserve any and all existing utilities.





GENERAL NOTES:

- CAIRO PLANTER (3) SHOWN ON PLAN. AS SUPPLIED FROM THE PARK CATALOG. ITEM #300-1186. PLANTER TO BE 48" ROUND, 36" TALL, BLACK WITH MATTE FINISH. INCLUDE THE DRAIN HOLE OPTION. www.theparkcatalog.com
- THE TREE GRATES ARE TO BE INSTALLED AS SHOWN WITH THE ACCESS PANEL ORIENTED AS SHOWN ON THE SITE PLAN. ELECTRICAL PANEL TO BE CENTERED DIRECTLY BELOW THE ACCESS PANEL. COORDINATE WITH THE SITE ELECTRICAL PLAN SHEET "E002 SITE POWER PLAN".
- TREE GRATES - URBAN ACCESSORIES. WHEN PURCHASING THE TREE GRATES, REFER TO QUOTE "#10719JF REV3". DUE TO THE TREE GRATES NEEDING THE ACCESS PANEL, THE TREE GRATES ARE A SPECIAL FABRICATED GRATE.

- SYNTHETIC TURF OVER CONCRETE PAVING - SYNLAWN TURF MODEL SYNBLUE 949 SEE DETAIL 4 SHEET L200
6,424 SF
- CONCRETE - NO COLOR, SEE DTLS 1,2 & 3 SHT L200
5,881 SF
- CONCRETE - COLORED SEE DTLS 1,2 & 3 SHT L200 SCOFIELD COLORS CHROMIX L - C27 WESTWOOD BROWN (18" BAND ON OUTSIDE OF 5' CIRCLE)
30 SF
- CONCRETE - COLORED SEE DTLS 1,2 & 3 SHT L200 SCOFIELD COLORS CHROMIX L - C21 ADOBE TAN
4,750 SF
- RECYCLED BRICK PAVING - SEE DETAIL 9, SHEET L200
2,600 SF
- RIVER ROCK IN PAVING - SEE DETAIL 9, SHEET L200
65 SF

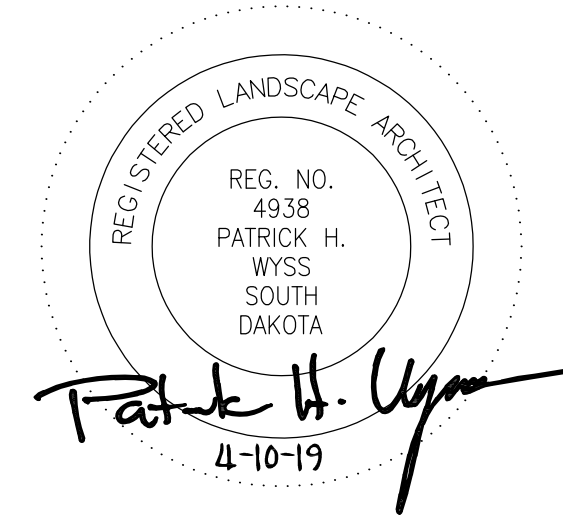
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OUTLAW SQUARE
BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

SITE AMENITY &
FINISHES PLAN

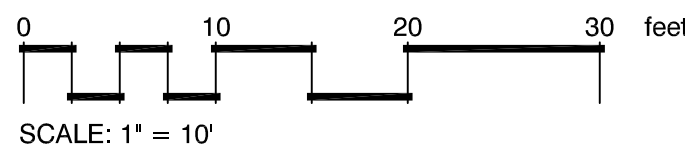
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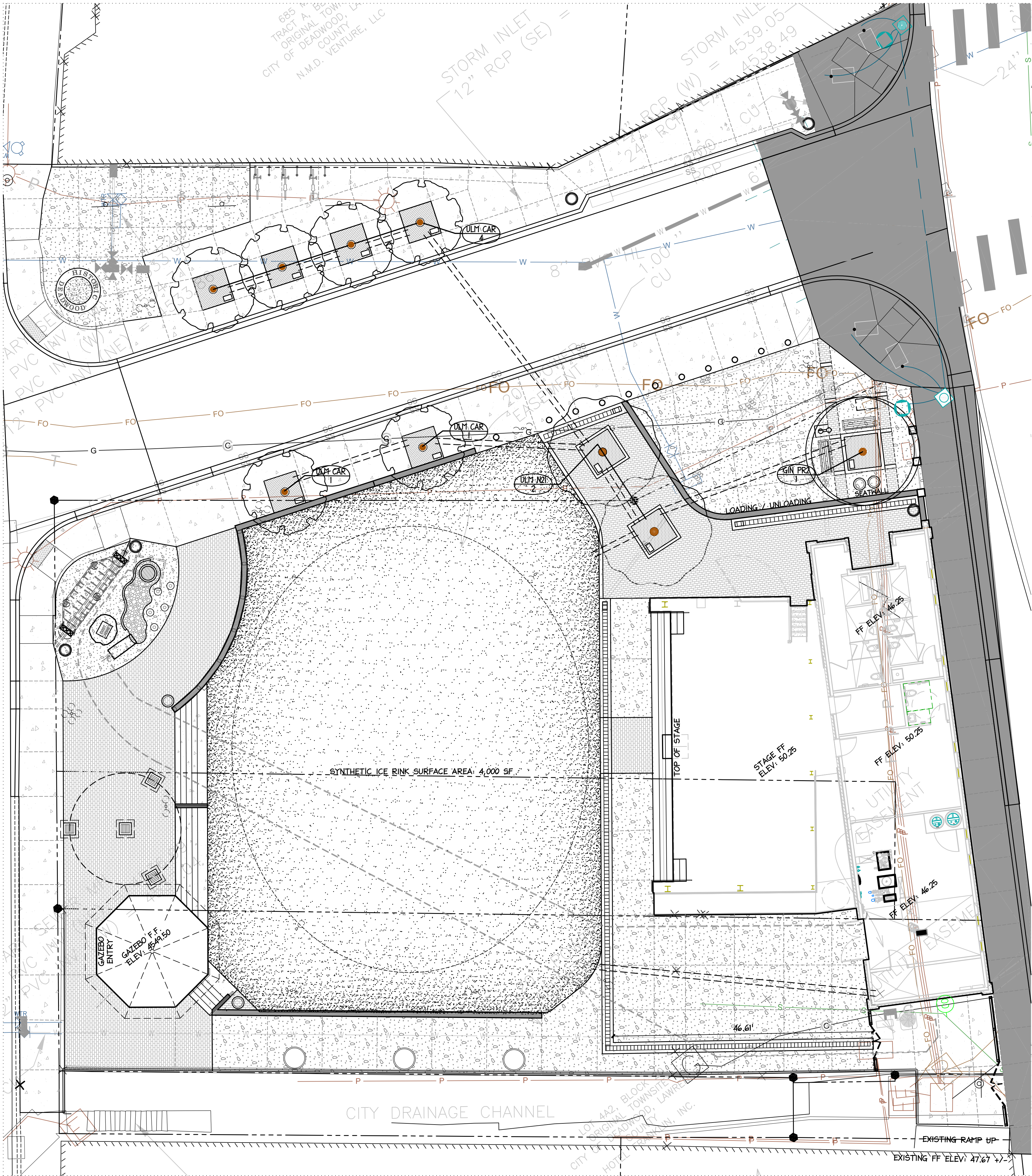
PROJECT STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: CMW CHECKED BY: PHW

DATE:
4/10/2019 SHEET NO:

PROJECT NO:
L102






PLANT SCHEDULE						
TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	CAL	DETAIL
	GIN PR2	1	Ginkgo biloba 'Princeton Sentry' / Princeton Sentry Ginkgo	B & B	2.5"Cal	
	ULM N21	2	Ulmus americana 'New Horizon' / New Horizon American Elm	B & B	2.5"Cal	
	ULM CAR	6	Ulmus x 'Frontier' / American Elm	B & B	2.5"Cal	

NOTE: EACH PLANTER SHALL RECEIVE A MIX OF HEARTY PERENNIALS COORDINATED WITH DAKOTA GREENS NURSERY.

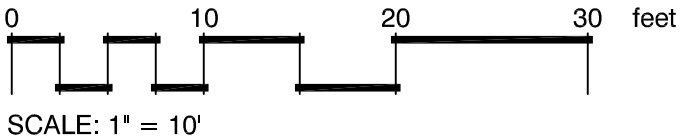
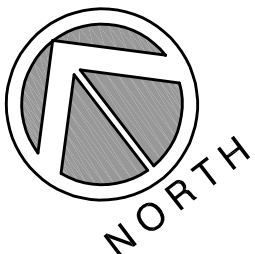
GENERAL NOTES:

- FOR ALL TREE PLANTING PITS THE SOIL SHALL BE AMENDED AS FOLLOWS:
 - IMPORT CLEAN TOPSOIL FROM NURSERY.
 - REFER TO PLANTING DETAILS FOR FERTILIZER TABLETS TO BE INSTALLED IN THE PLANTING PIT.
- CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED UTILITIES AT NO COST TO OWNER.
- ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSEYMEN.
- ALL TREE LOCATIONS SHALL BE STAKED OR LAID OUT BY CONTRACTOR AND APPROVED BY PROJECT LANDSCAPE ARCHITECT.
- ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING.
- PLANTING SEASONS SHALL BE FROM APRIL 15 TO JUNE 15 AND FROM SEPTEMBER 1 TO NOVEMBER 1 UNLESS OTHERWISE COORDINATED. EXCEPTIONS SHALL BE COORDINATED THROUGH THE LANDSCAPE ARCHITECT AND OWNER.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING HEALTH OF ALL TREES, SHRUBS, & PERENNIALS UNTIL FINAL ACCEPTANCE OF PROJECT & MAINTENANCE PERIOD IS COMPLETE.
- MAINTENANCE PERIOD STARTS AT SUBSTANTIAL COMPLETION AND EXTENDS FOR 30 DAYS.
- REMOVE UNSATISFACTORY PLANT MATERIAL WITHIN (7) DAYS OF NOTIFICATION.
- TREES SHALL BE WRAPPED WITH NURSERYMAN'S STANDARD CREPE TAPE NOT LESS THAN 4" WIDE, CONSISTING OF TWO LAYERS OF CRINKLED PAPER CEMENTED TOGETHER WITH BITUMINOUS MATERIAL.
- GUY/ANCHOR TREES IMMEDIATELY UPON PLANTING TREE.
- CONTRACTOR SHALL PROVIDE A ONE (1) YEAR WARRANTY FOR ALL PLANT MATERIAL. REPLACEMENT PLANT MATERIAL IS SUBJECT TO THE SAME ONE (1) YEAR WARRANTY. LIMITED TO (1) REPLACEMENT.
- PLANT SUBSTITUTIONS NEED TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- LANDSCAPE ARCHITECT TO INSPECT THE TREES PRIOR TO PLANTING. IF TREES ARE IN DEFECT OR HAVE SIGN OF HEALTH ISSUES THE TREES WILL BE REJECTED AND NOT APPROVED FOR PLANTING.
- LANDSCAPE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE. ANY DIRT OR DEBRIS ON THE HARDSCAPE OR RADWAYS FROM LANDSCAPE WORK ACTIVITIES SHALL BE CLEANED IN A REASONABLE FASHION AND AT THE END OF EACH WORK DAY.



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**C H A M B E R L I N
A R C H I T E C T S**

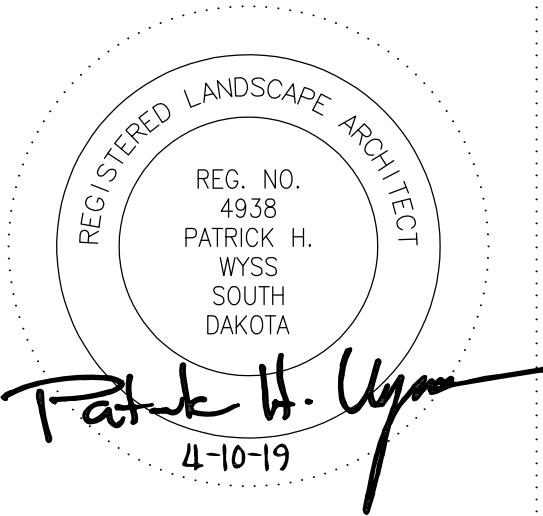
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WYSS
SOUTH
DAKOTA

Patrick H. Wyss
4-10-19



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OUTLAW SQUARE
BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

LANDSCAPE PLAN

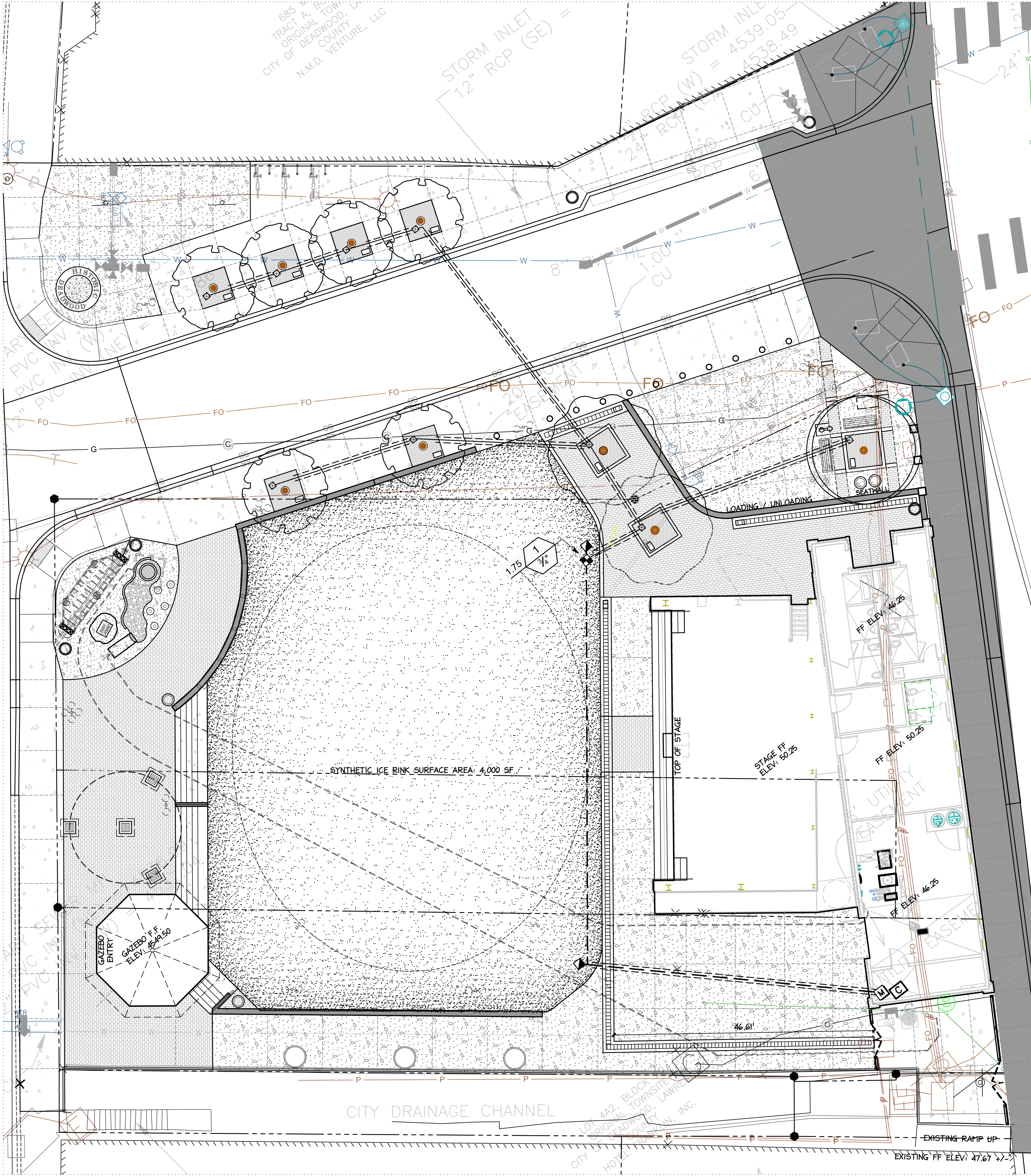
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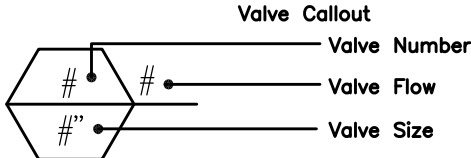
DRAWN BY: CMW CHECKED BY: PHW

DATE:
4/10/2019 SHEET NO:

PROJECT NO:
L103



IRRIGATION SCHEDULE				
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	DETAIL
	Rain Bird RWS-B-C-SOCK 1401 Root Watering System with 4.0" diameter x 36.0" long with locking grate, semi-rigid mesh tube. Check Valve and Sand Sock. Rain Bird bubbler option as indicated: 1401 0.25 gpm, 1402 0.5 gpm, 1404 1.0 gpm, 1408 2.0 gpm.	8	30	
	Rain Bird XZ-075-PRF Low Flow Drip Control Kit, 3/4" Low Flow Valve, 3/4" Pressure Regulating RBY Filter, and 30psi pressure regulator. 0.2gpm-5gpm.	1		
	Rain Bird 5-RC 1" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, and 1-Piece Body.	2		
	Rain Bird ESP4-SMTEi 4 Station indoor Smart Modular Control System for Residential and Light Commercial Use. Wall Mount, Tipping Bucket Rain Sensor that Measures Rainfall.	1		
	Water Meter: SEE MECHANICAL PLANS.	1		
	Irrigation Lateral Line: PVC Schedule 40 (1")	201.0 l.f.		
	Irrigation Mainline: PVC Schedule 40 (1")	129.3 l.f.		
	Pipe Sleeve: PVC Schedule 40 (MIN PIPE SIZE IS 2X THE CARRYING PIPE SIZE)	212.9 l.f.		



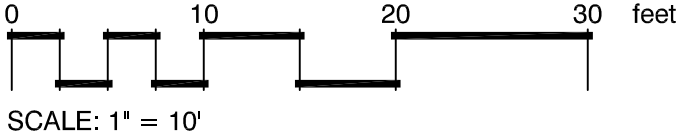
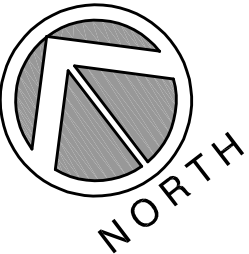
GENERAL NOTES:

- CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC AND PRIVATE UTILITIES WITHIN THE CONSTRUCTION AREA PRIOR TO CONSTRUCTION. NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS.
- IRRIGATION MAINLINE AND LATERAL PIPE THAT IS TO BE INSTALLED UNDER PAVEMENT SHALL BE INSTALLED IN A SLEEVE.
- EXCAVATED MATERIAL IS GENERALLY SUITABLE FOR BACKFILL MATERIAL. BACKFILL SHALL BE FREE OF RUBBISH, VEGETATIVE MATERIAL AND ROCK LARGER THAN 2 INCHES. FROZEN MATERIAL IS NOT ALLOWED. DRESS BACKFILLED AREAS TO FINISH GRADE.
- ALL TRENCHES SHALL BE WIDE ENOUGH TO ACCOMMODATE A MIN. OF 2" BETWEEN PIPE & TRENCH WALL.
- CONTRACTOR IS RESPONSIBLE FOR ANY TRENCH SETTLING DURING WARRANTY PERIOD.
- LATERAL PIPE SHALL BE SOLVENT WELDED AT ALL PLASTIC PIPE & FITTINGS USING SOLVENTS & METHODS RECOMMENDED BY THE PRODUCT MANUFACTURER. ALL THREADED FITTINGS SHALL BE INSTALLED W/ TEFLON TAPE OR AS RECOMMENDED BY MANUFACTURER.
- PIPE MAY BE ASSEMBLED & WELDED ON THE SURFACE. SNAKE PIPE FROM SIDE TO SIDE OF TRENCH BOTTOM TO ALLOW FOR EXPANSION & CONTRACTION.
- ALL CONNECTIONS BETWEEN PVC PIPE & METAL SHALL BE THREADED CONNECTIONS W/ THREADED TOE NIPPLES AND S-80 PVC COUPLINGS. SCHEDULE 40 MALE ADAPTORS AND FITTINGS ARE NOT ACCEPTABLE AT ANY LOCATION ON THE NEW IRRIGATION PIPING.
- CAP ALL OPENINGS AS SOON AS LINES ARE INSTALLED TO PREVENT ENTRANCE OF FOREIGN MATERIALS.
- THOROUGHLY FLUSH ALL LINES PRIOR TO THE OPERATION OF SPRINKLER HEADS & VALVES.
- INSTALL WIRES A MIN. OF 27" BELOW GRADE (SEE IRRIGATION TRENCH DETAIL) & LAY TO THE SIDE & BELOW PIPING. SPLICES ARE PROHIBITED IN THE TRENCH. PROVIDE AN EXPANSION LOOP AT EACH CHANGE TO DIRECTION OF TRENCH. SNAKE WIRES TO ALLOW FOR EXPANSION. CONTROL WIRES SHALL BE BUNDLED AT 10' INTERVALS.
- REFER TO PROJECT MANUAL IRRIGATION SPECIFICATIONS FOR ALL IRRIGATION PRESSURE TESTING REQUIREMENTS. COORDINATE ALL TESTING WITH DESIGNER AND OWNER.
- UPON COMPLETION OF ALL TESTING, COMPLETE ASSEMBLY OF EQUIPMENT & ADJUST TO PROPER DISTRIBUTION.
- ALL IRRIGATION EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE TO ALL FEDERAL, STATE & LOCAL LAWS & ORDINANCES THAT MAY APPLY.
- SUBMITTALS: SUBMIT ALL EQUIPMENT SPECIFIED FOR REVIEW BY LANDSCAPE ARCHITECT. NUMBER OF COPIES OR SUBMITTAL PROCESS TO BE DETERMINED BY PROJECT MANAGER.
- AS BUILT DRAWINGS ARE CONSIDERED PART OF THIS CONTRACT AND SHALL BE PRESENTED PRIOR TO FINAL PAYMENT.
- ALL CLAMPS TO BE WORM GEAR SS CLAMPS. DOUBLE CLAMP 1 1/2"
- CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY ON ALL IRRIGATION EQUIPMENT.
- WARRANTY SHALL COMMENCE FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.
- PRODUCT SUBSTITUTION REQUESTS SHALL BE MADE PRIOR TO BIDDING FOR APPROVAL.
- COMBINING CONTROL VALVES IN A SINGLE VALVE BOX IS PROHIBITED. CORRECTIONS TO NON CONFORMING WORK IS TO BE MADE AT CONTRACTORS EXPENSE.

SEE MECHANICAL PLANS FOR METER & BACKFLOW. INSTALL WIRELESS RAIN SENSOR ON BUILDING EXTERIOR. COORDINATE MOUNTING LOCATION WITH OWNER

**Know what's below.
Call before you dig.**

The locations of all existing utilities are shown in an approximate location. The Contractor is responsible for coordination and location of all existing utilities. Contractor is fully responsible for any and all damages resulting from the Contractor's failure to exactly locate and preserve any and all existing utilities.

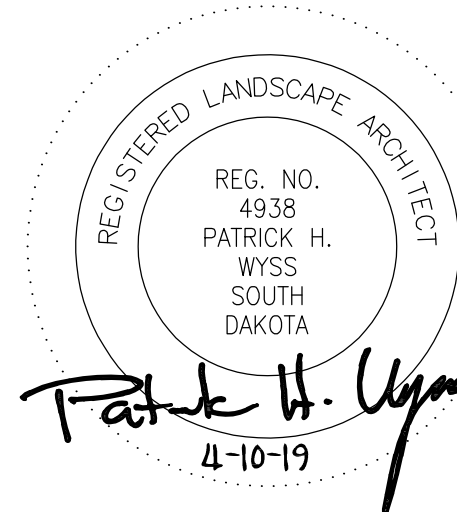


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OUTLAW SQUARE
BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

IRRIGATION PLAN

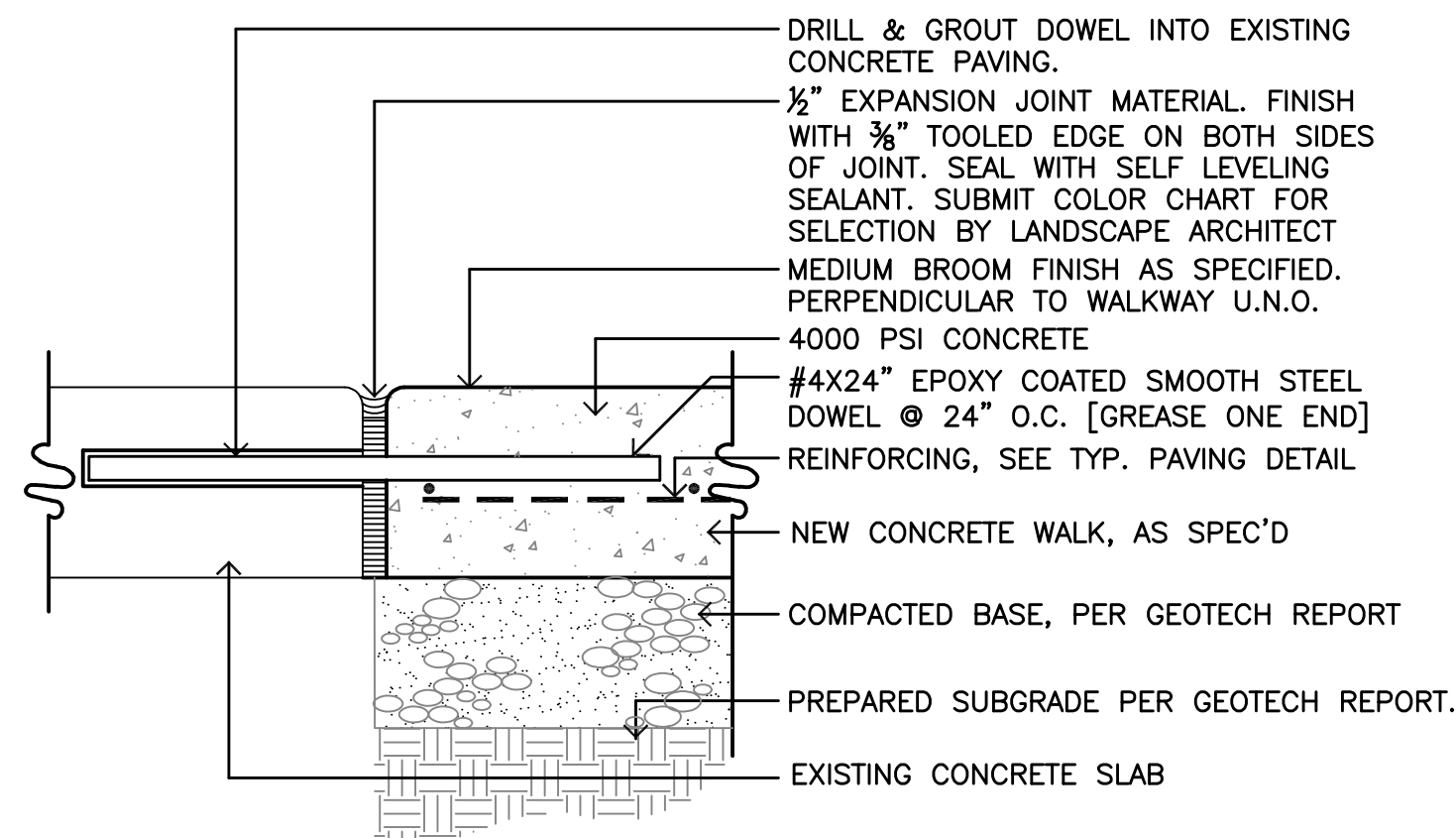
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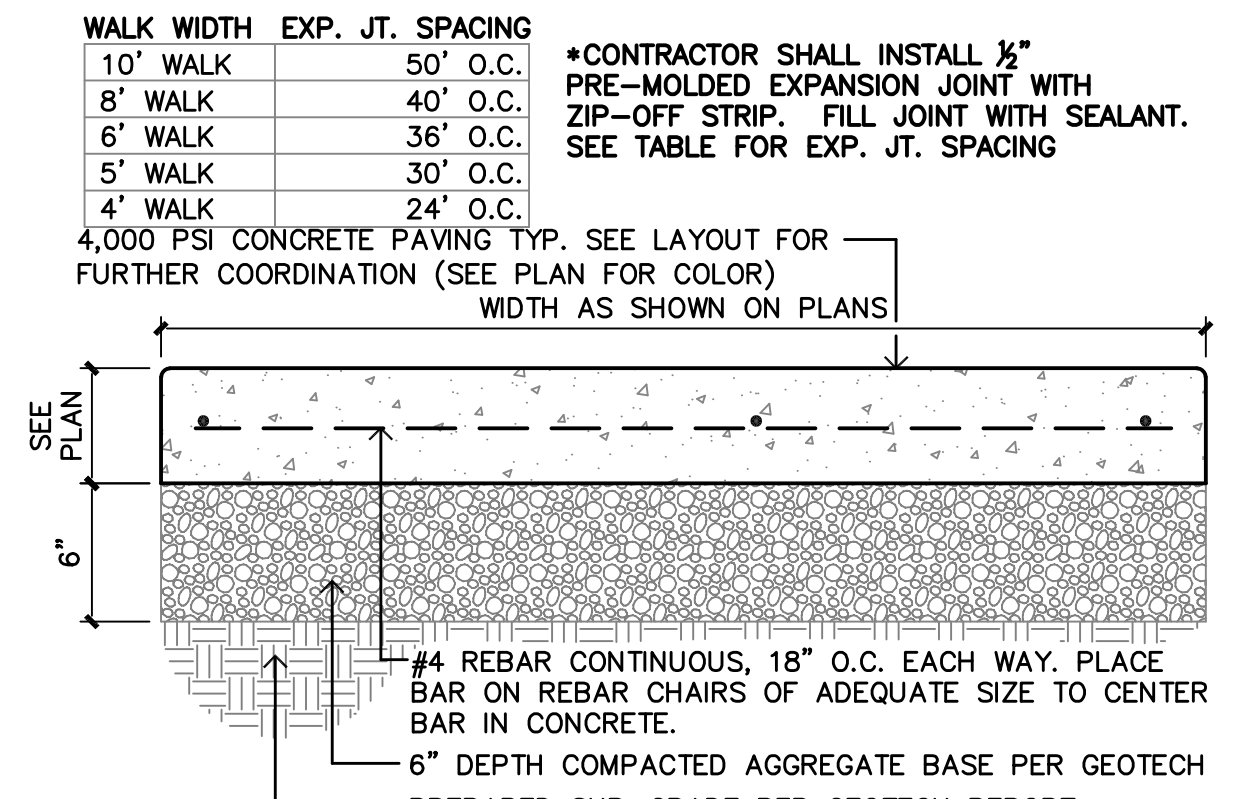
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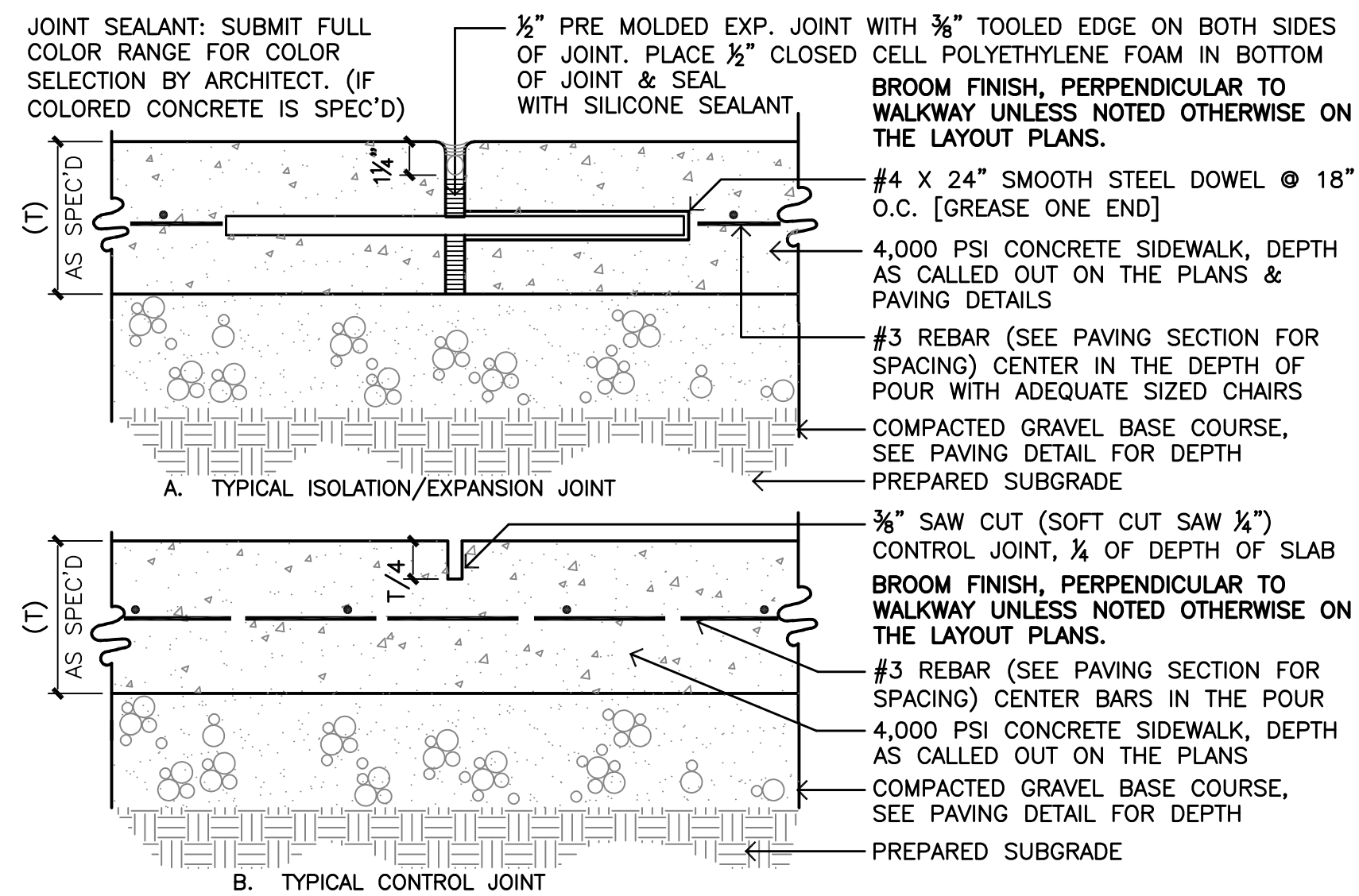
PROJECT NO:
L104



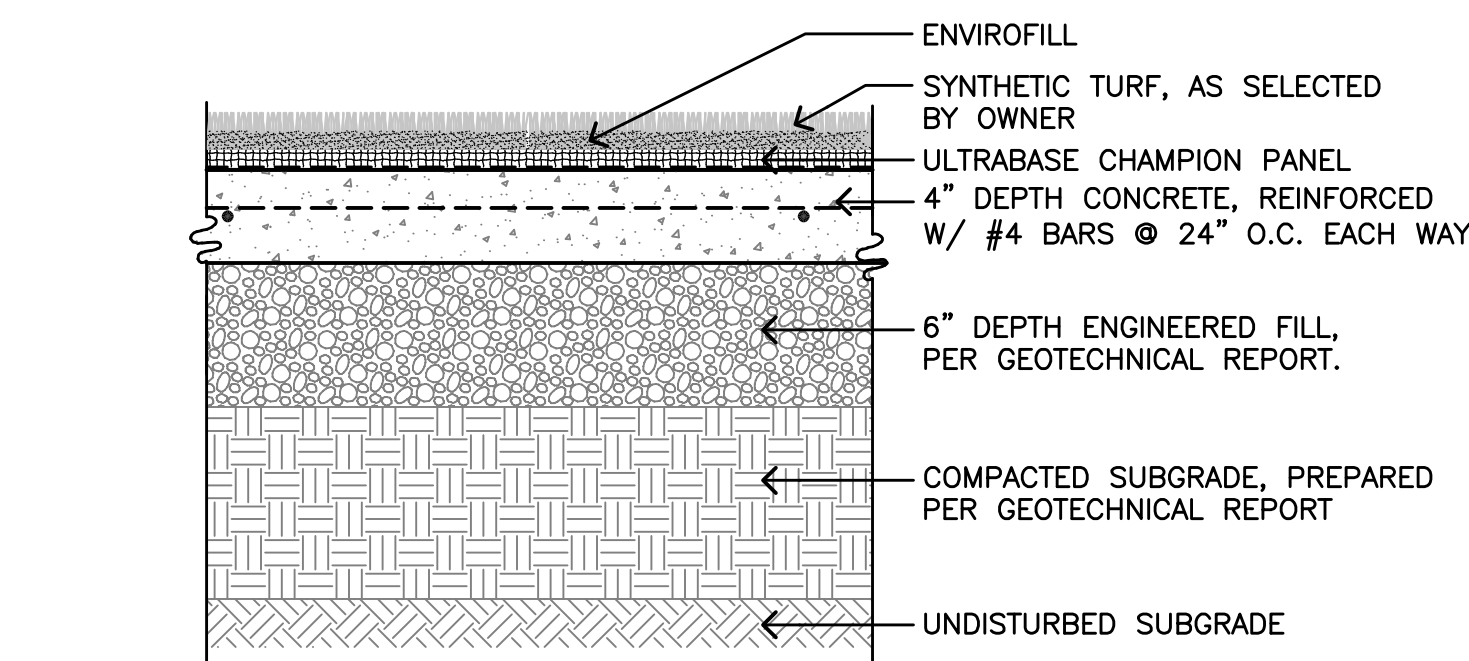
1 SECTION: NEW TO EXIST. SIDEWALK INSTALLATION
L200 SCALE: 3" = 1'-0"



2 SECTION: TYPICAL CONCRETE PAVING
L200 SCALE: 1 1/2" = 1'-0"

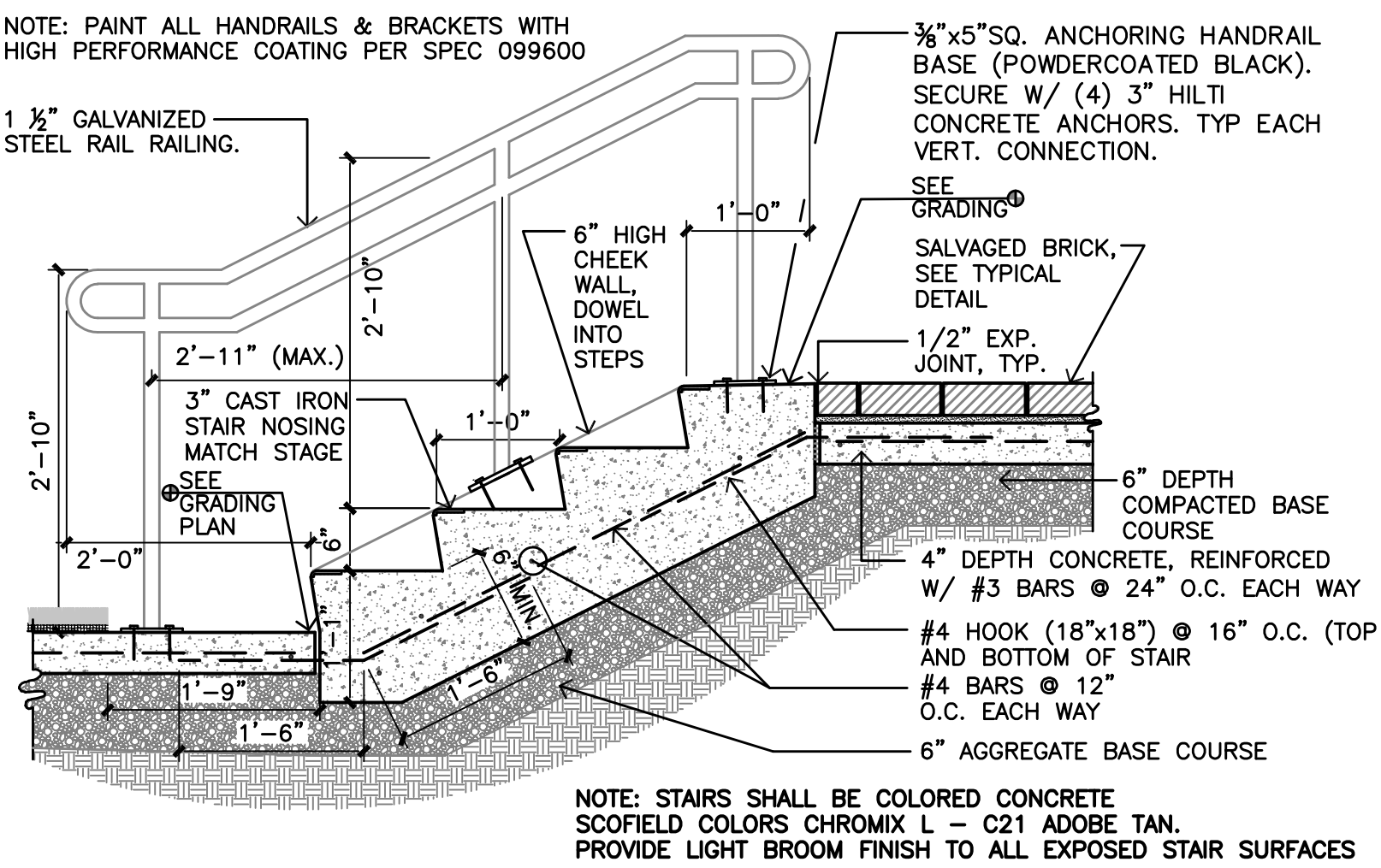


3 SECTION: TYPICAL CONCRETE JOINT DETAILS
L200 SCALE: 3" = 1'-0"

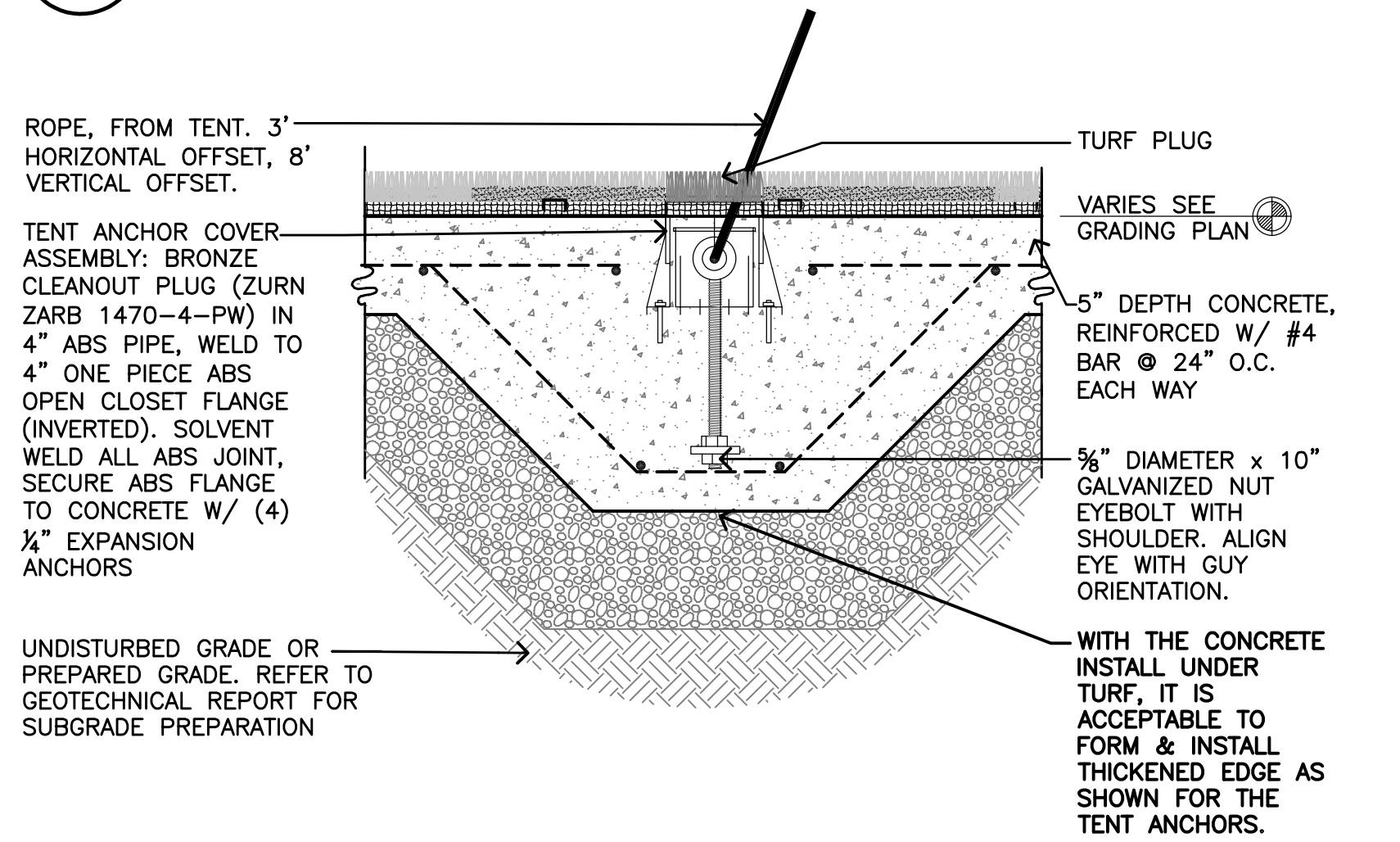


GENERAL NOTES:
1. INSTALL SYNTHETIC TURF PER MANUFACTURER RECOMMENDATIONS.
SYNLAWN OF SOUTH DAKOTA
OFFICE: 605.340.0863
2308 JANET ST
RAPID CITY SD, 57702

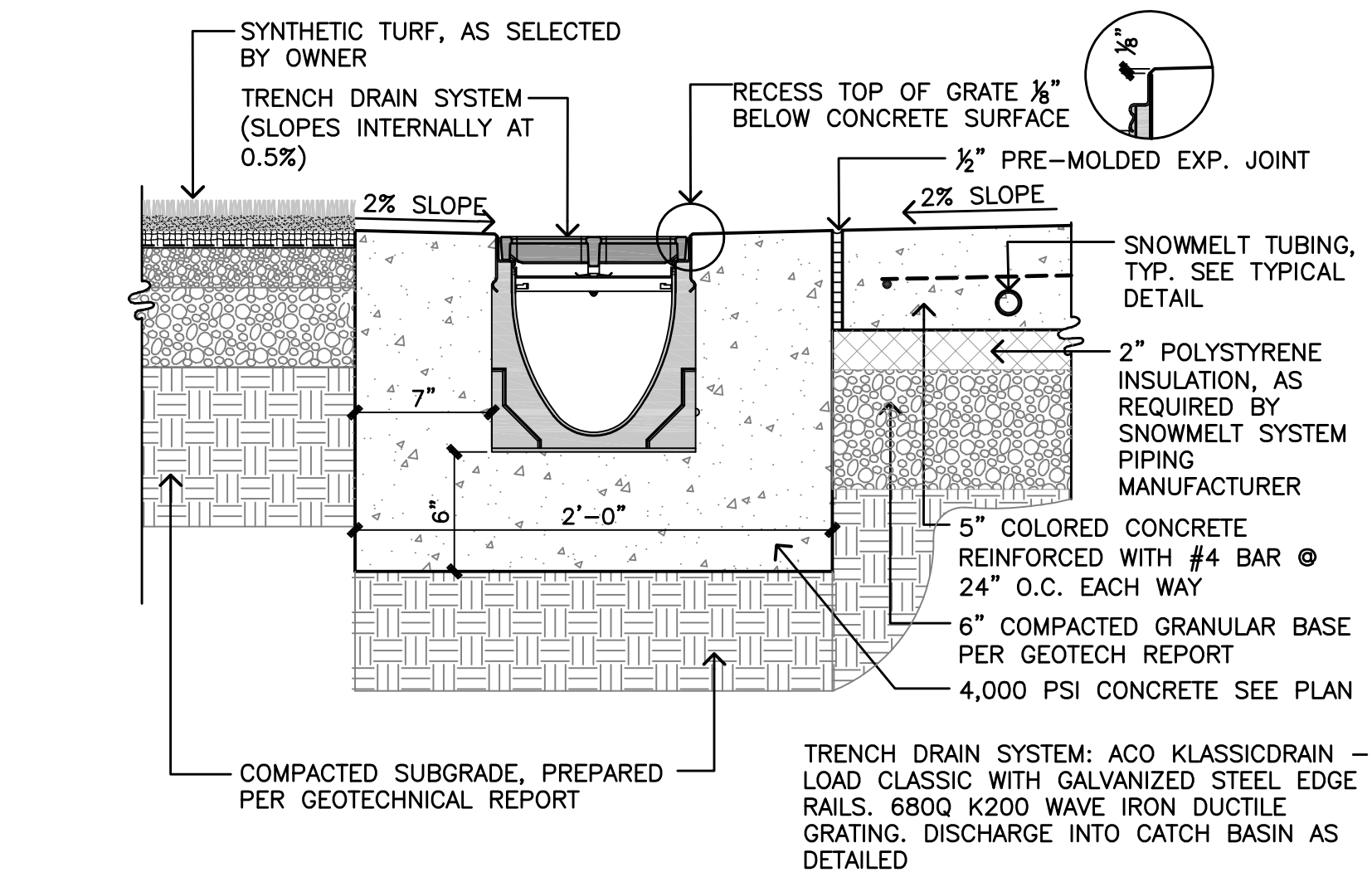
4 SECTION: SYNTHETIC TURF SURFACING
L200 SCALE: 1 1/2" = 1'-0"



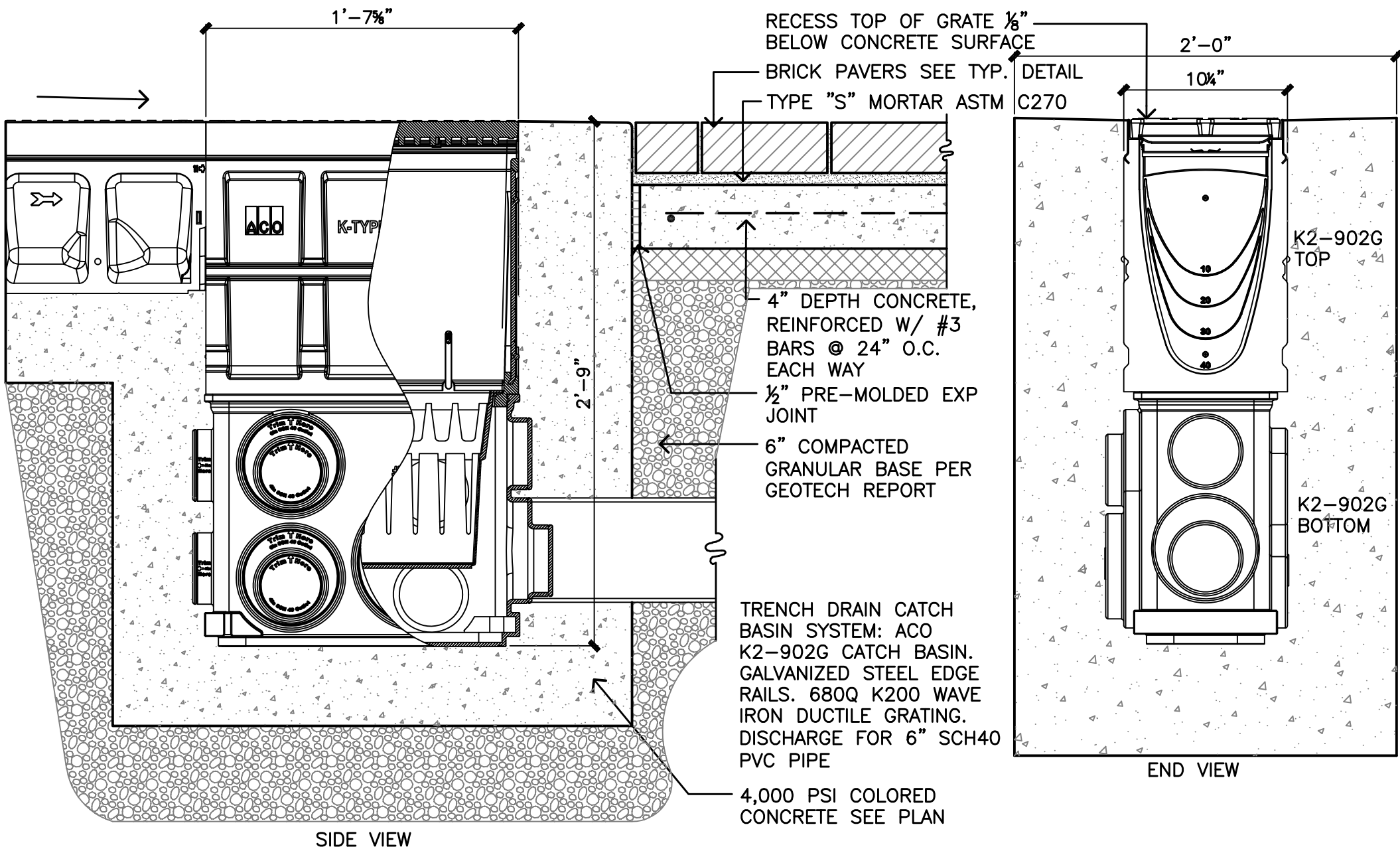
5 SECTION: STAIR / HANDRAIL DETAIL
L200 SCALE: 3/4" = 1'-0"



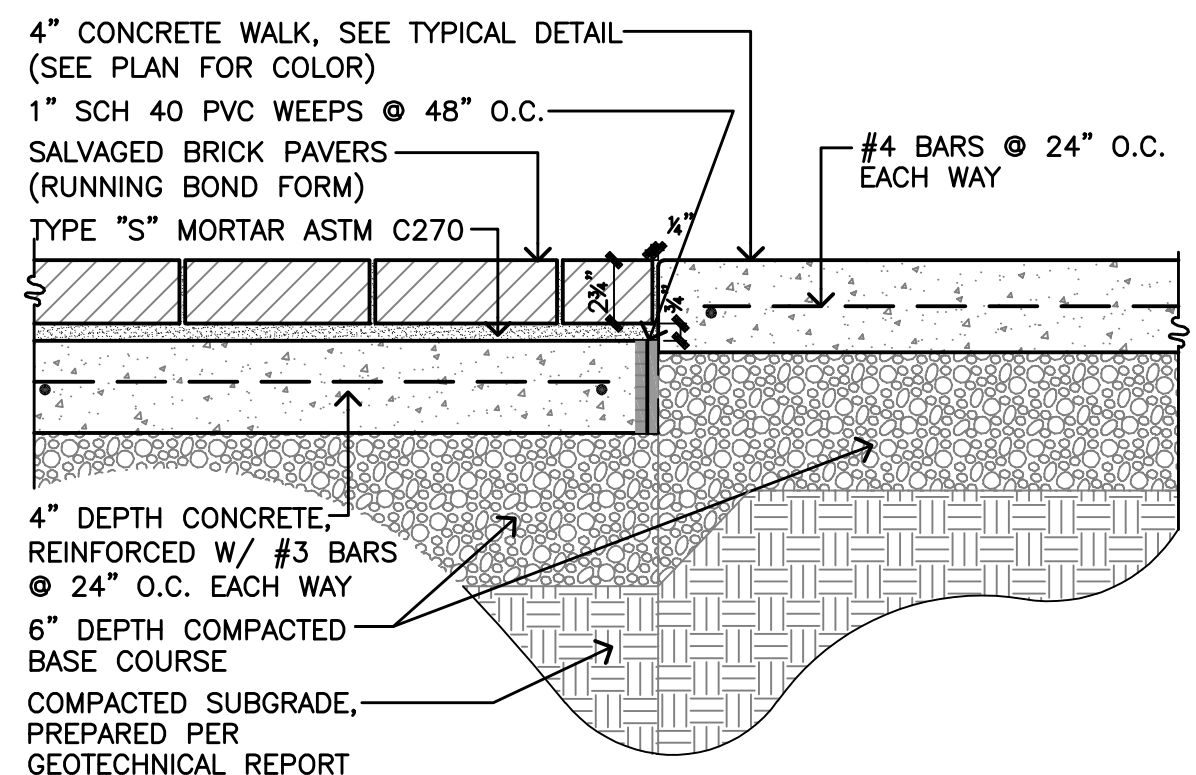
6 SECTION: LAWN TENT ANCHOR - THICKENED EDGE
L200 SCALE: 1 1/2" = 1'-0"



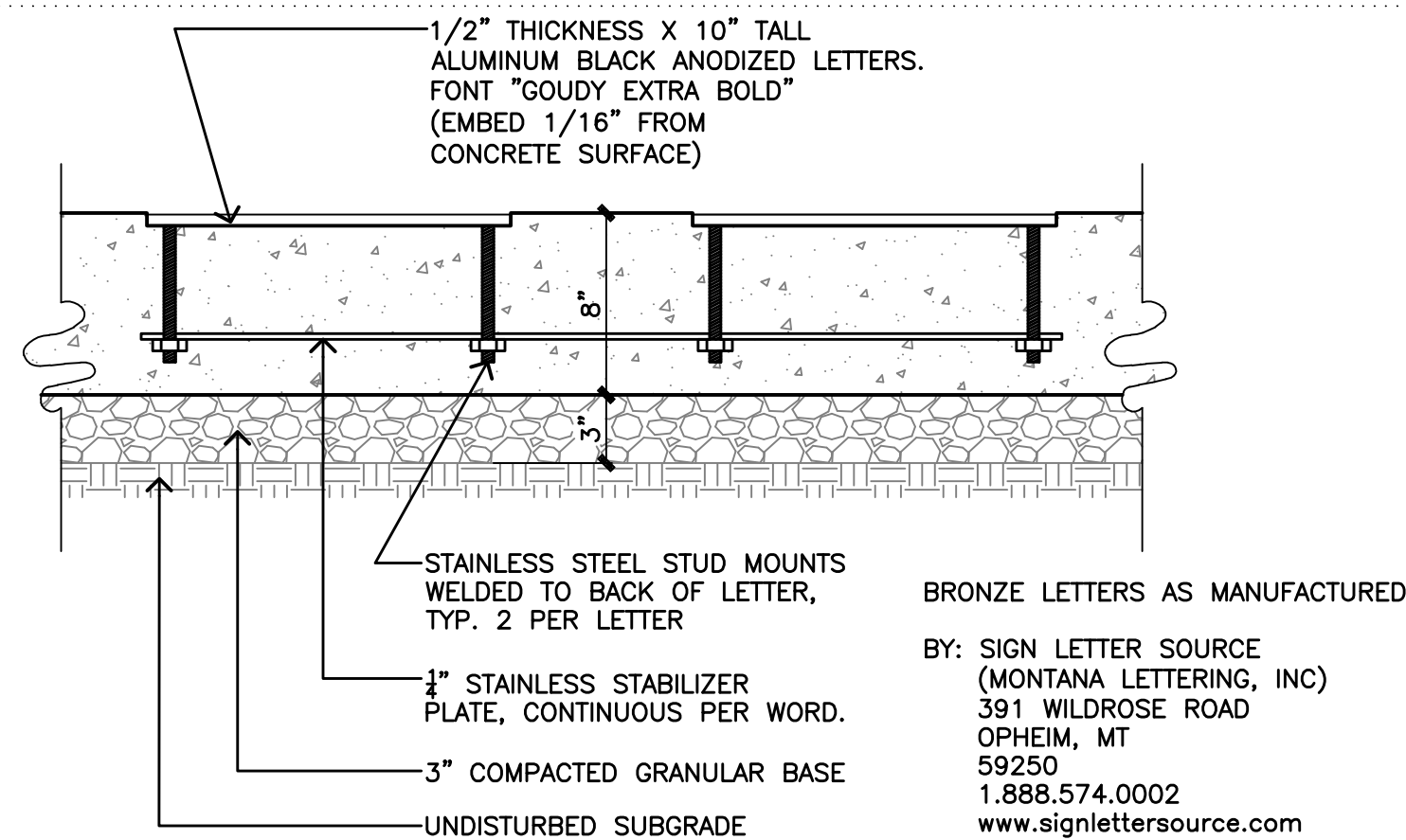
7 DETAIL: TRENCH DRAIN
L200 SCALE: 1 1/2" = 1'-0"



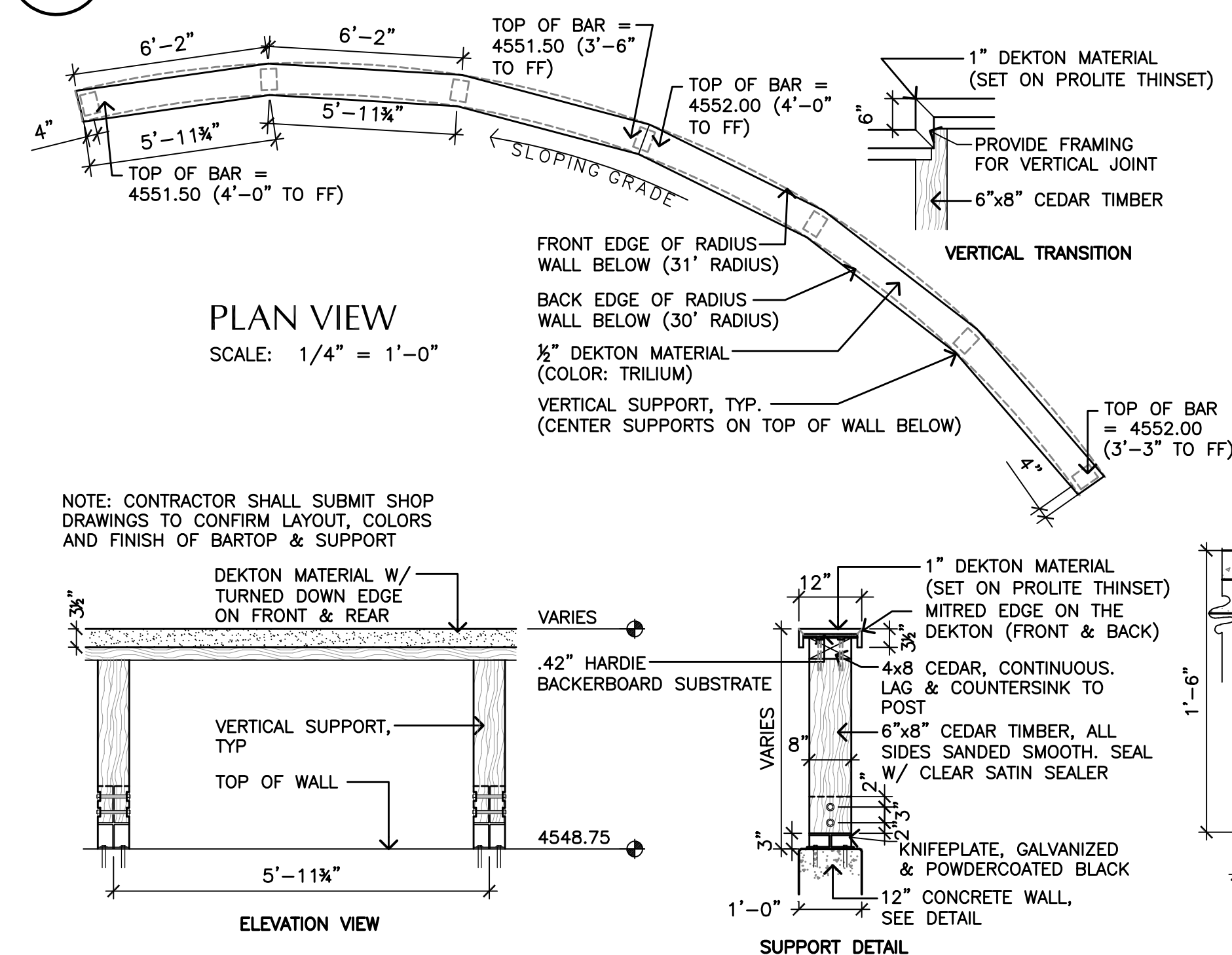
8 DETAIL: TRENCH DRAIN CATCH BASIN
L200 SCALE: 1 1/2" = 1'-0"



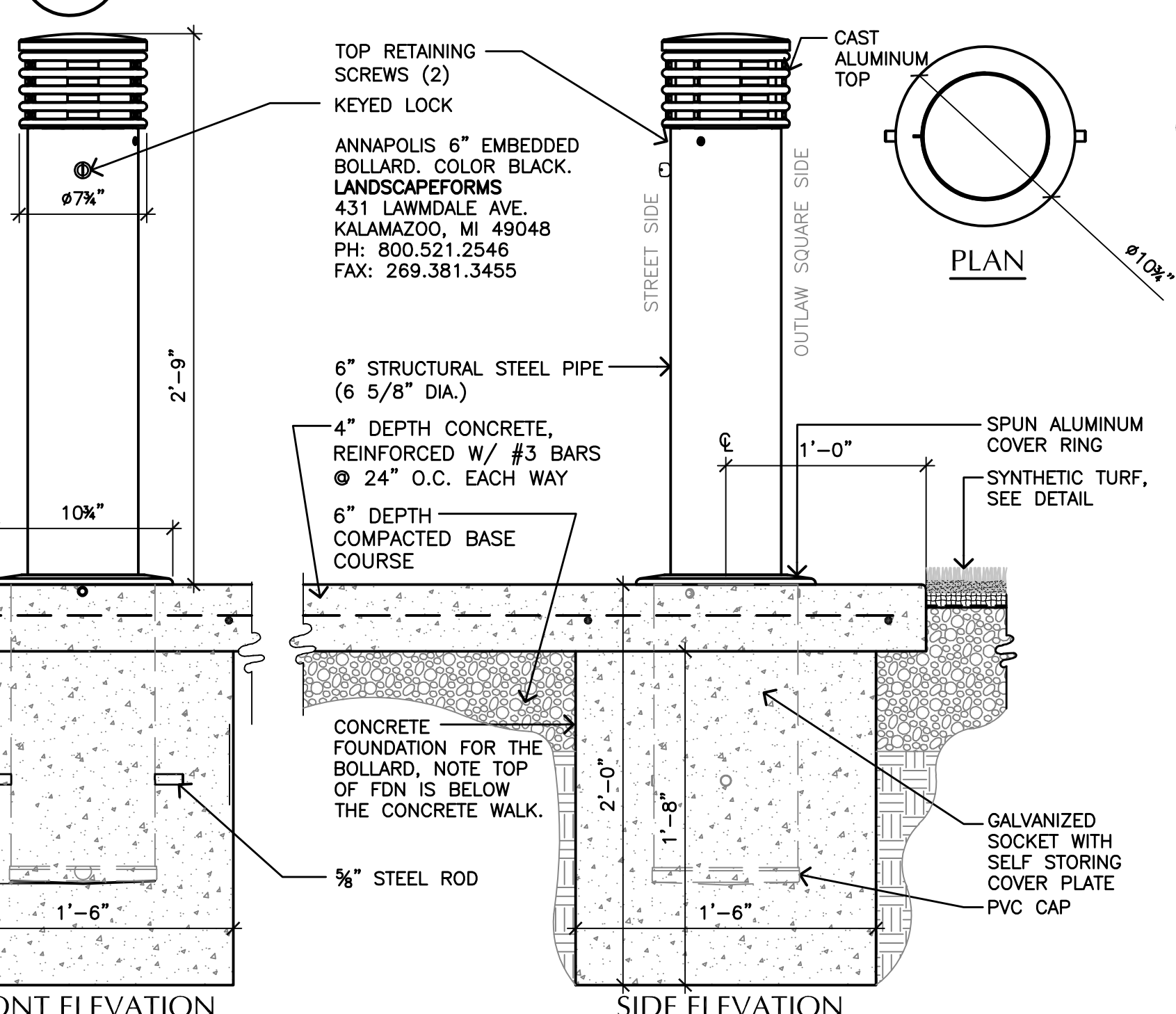
9 DETAIL: BRICK PAVING AT SIDEWALK
L200 SCALE: 1 1/2" = 1'-0"



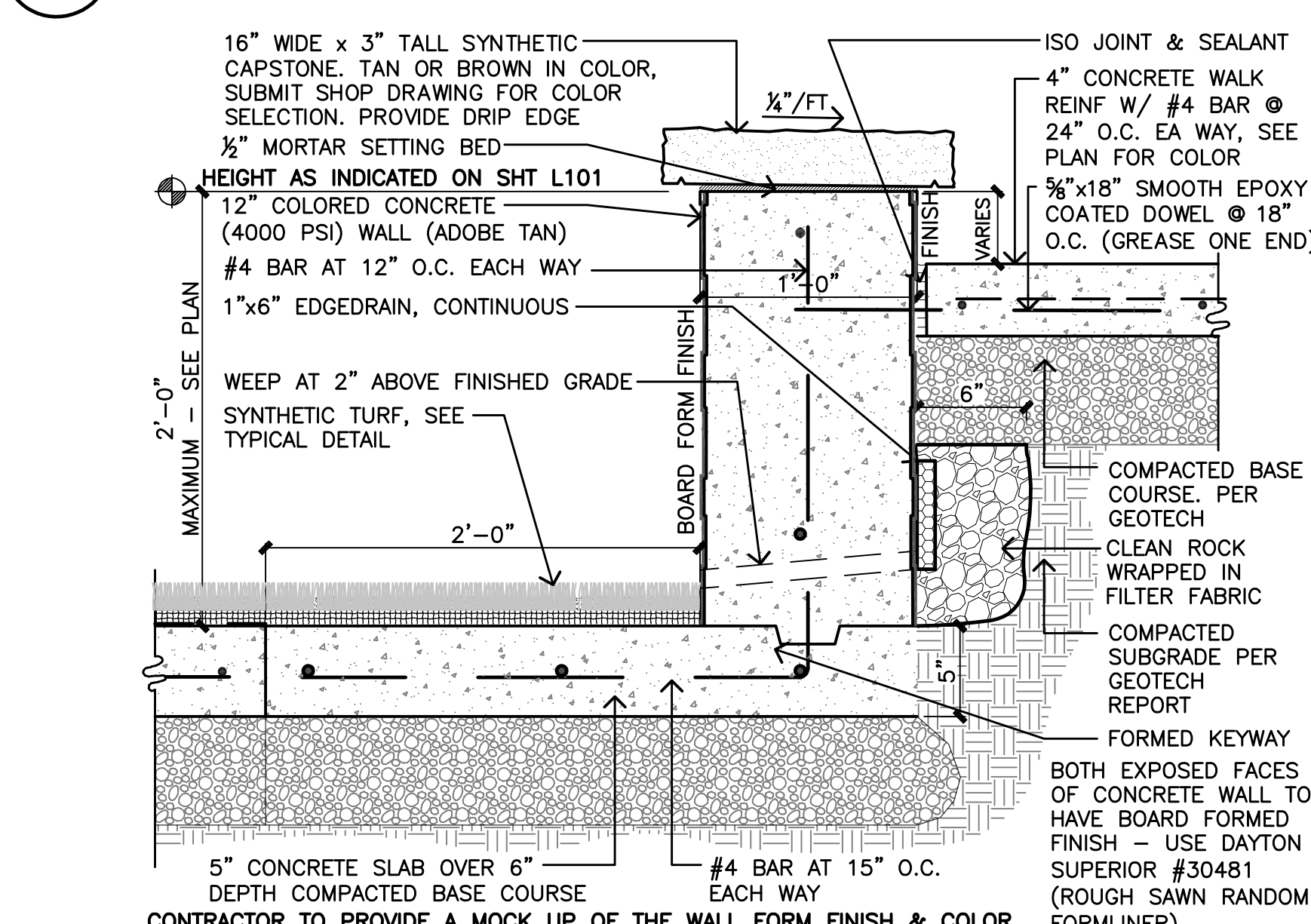
1 SECTION: SIGN LETTERS EMBED INTO CONCRETE
 L201 SCALE: 1 1/2" = 1'-0"



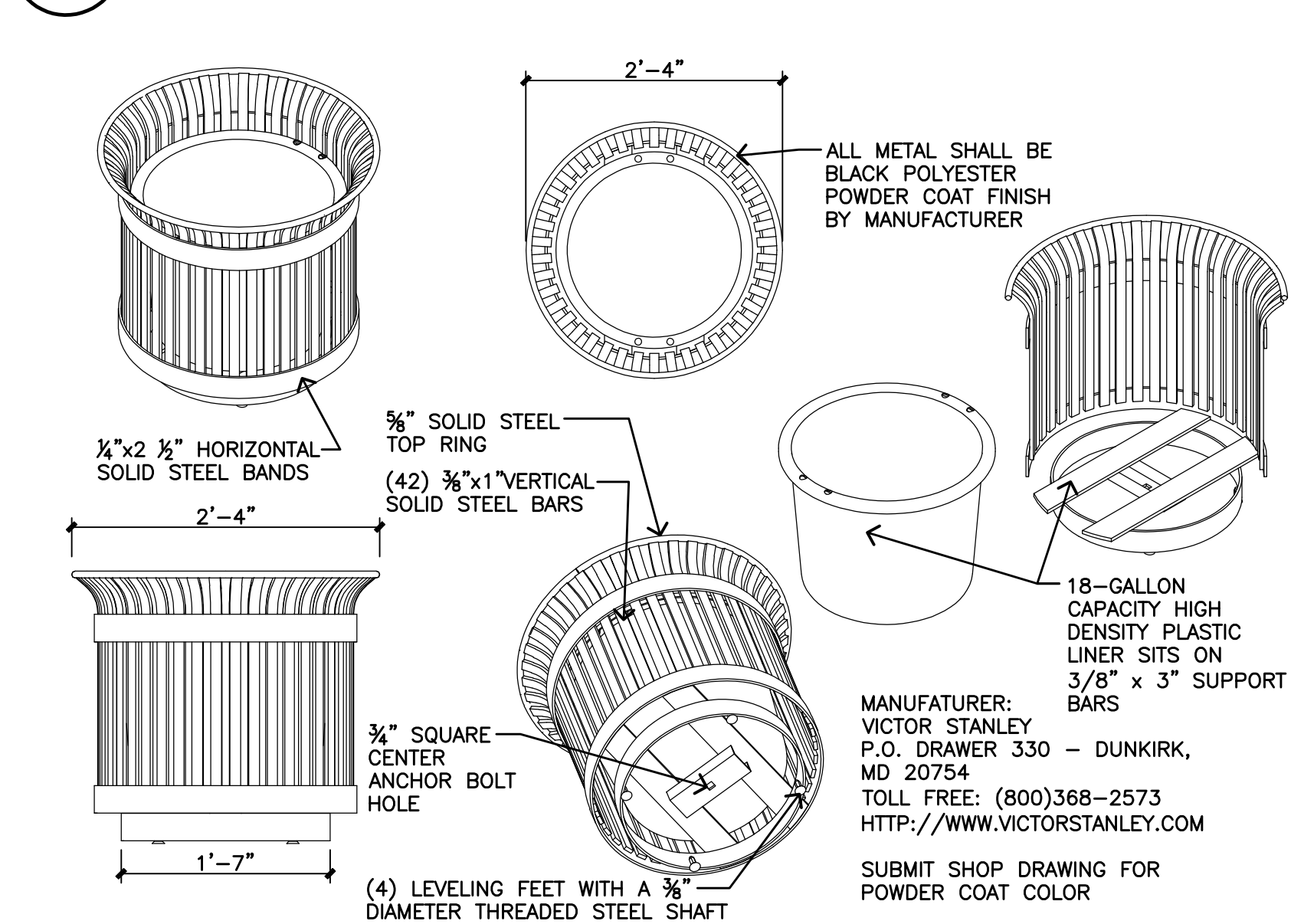
2 DETAIL: BRICK PAVING EDGE RESTRAINT
 L201 SCALE: 1 1/2" = 1'-0"



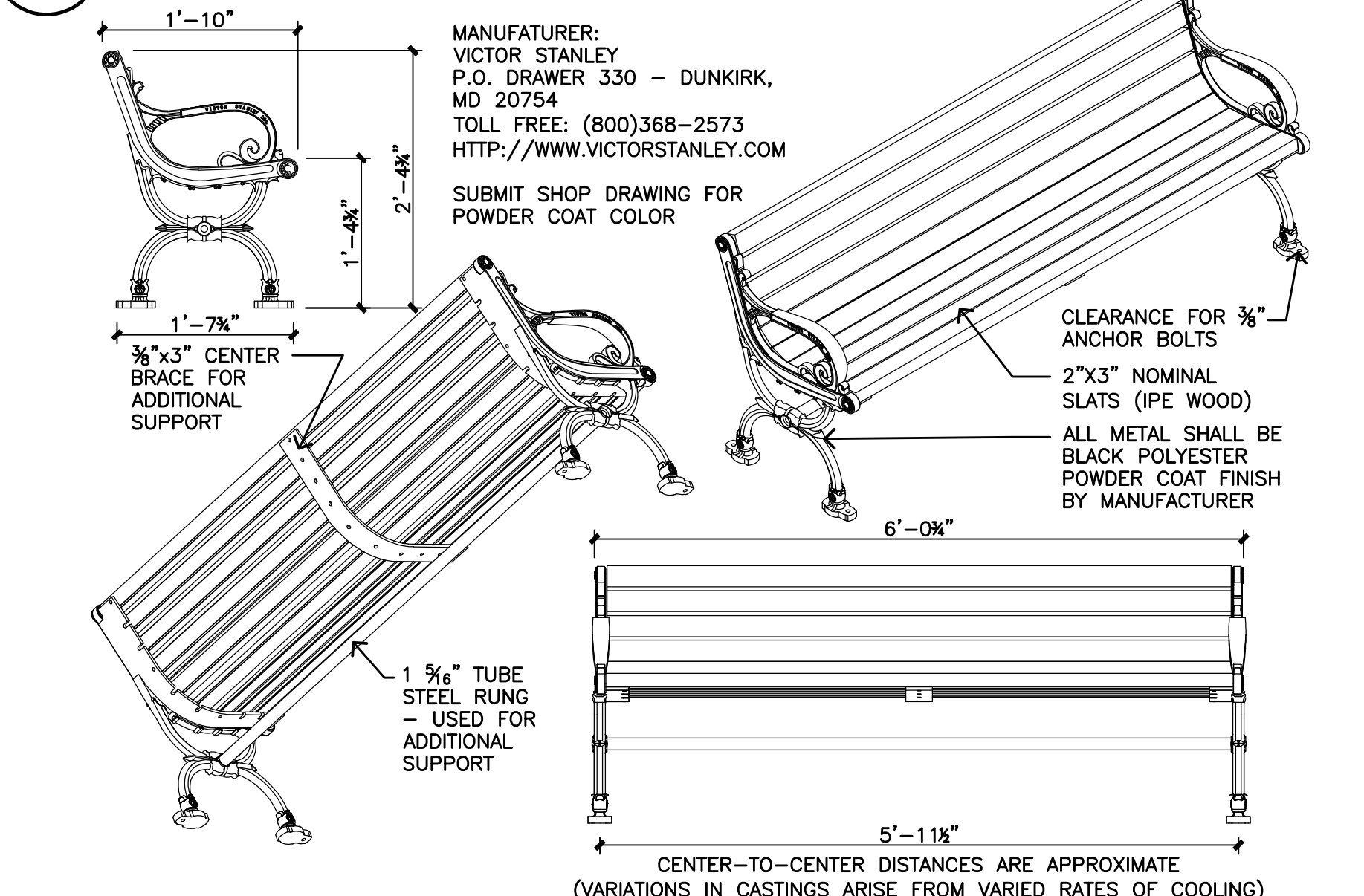
3 SECTION: C-WALL (12" CONSTRUCTION AT PLAZA
 L201 SCALE: 1 1/2" = 1'-0"



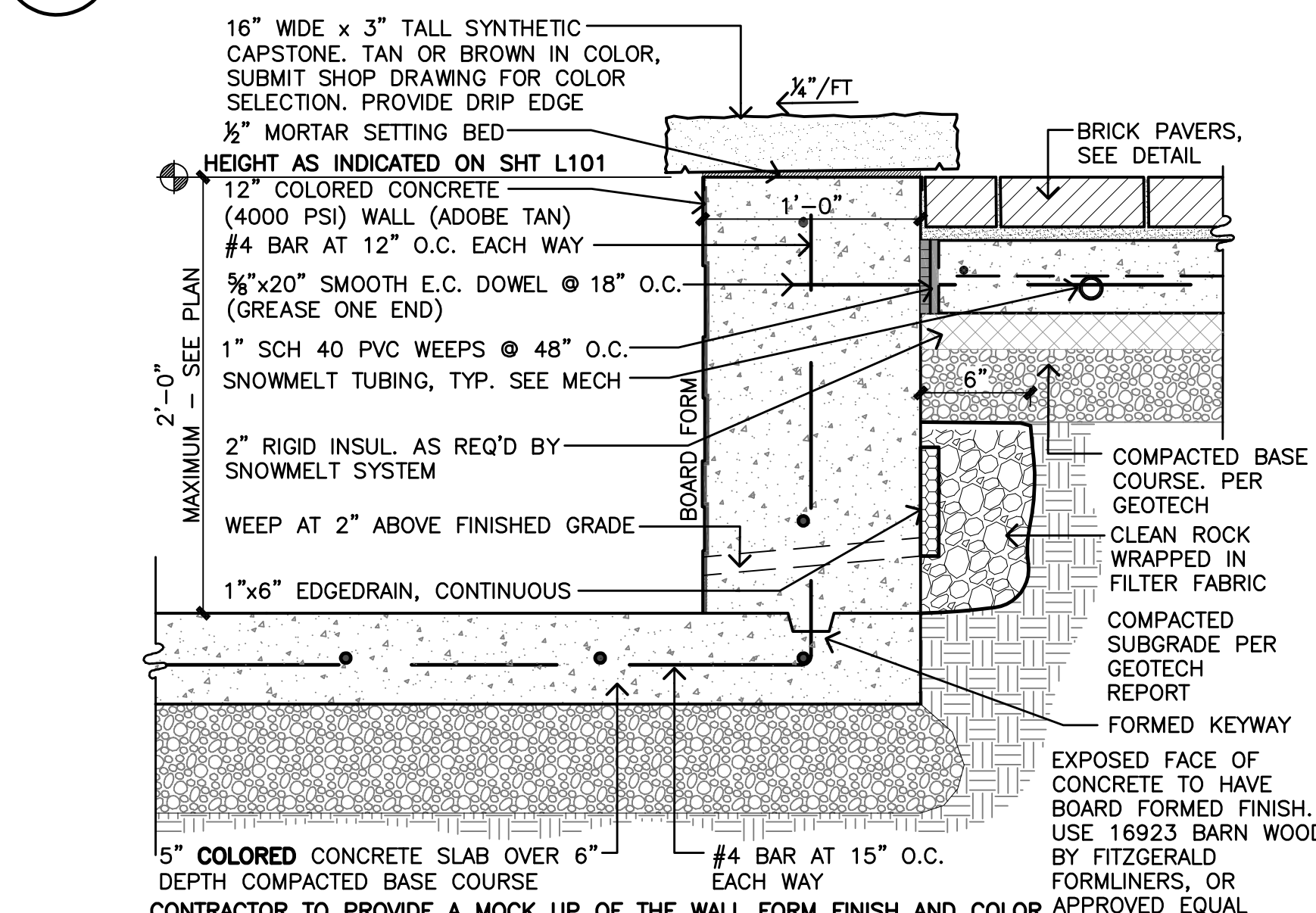
4 DETAIL: BARTOP RAILING
 L201 SCALE: 1/2" = 1'-0"



5 DETAIL: DECORATIVE BOLLARD
 L201 SCALE: 1-1/2" = 1'-0"

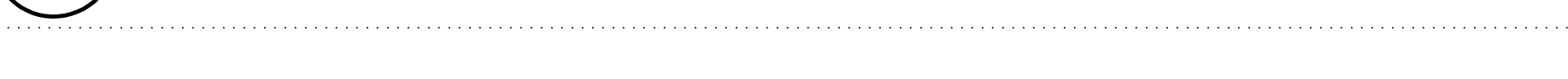


6 SECTION: C-WALL (12" CONSTRUCTION AT PLAZA
 L201 SCALE: 1 1/2" = 1'-0"

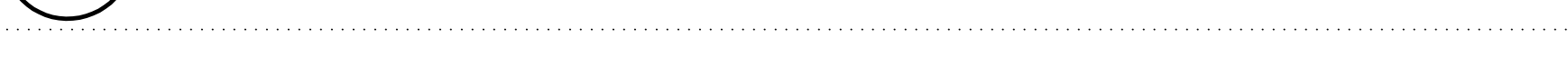


7 VICTOR STANLEY S-24 PLANTER (18 GALLON)
 L201 SCALE: 3/4" = 1'-0"

8 VICTOR STANLEY CLASSIC C-10 BENCH (6 FOOT)
 L201 SCALE: 3/4" = 1'-0"



9 SECTION: C-WALL (12" CONSTRUCTION AT PLAZA
 L201 SCALE: 1 1/2" = 1'-0"



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 REG. NO. 4938
 PATRICK H. WYSS
 SOUTH DAKOTA

Patrick H. Wyss
 4-10-19

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OUTLAW SQUARE BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

SITE DETAILS

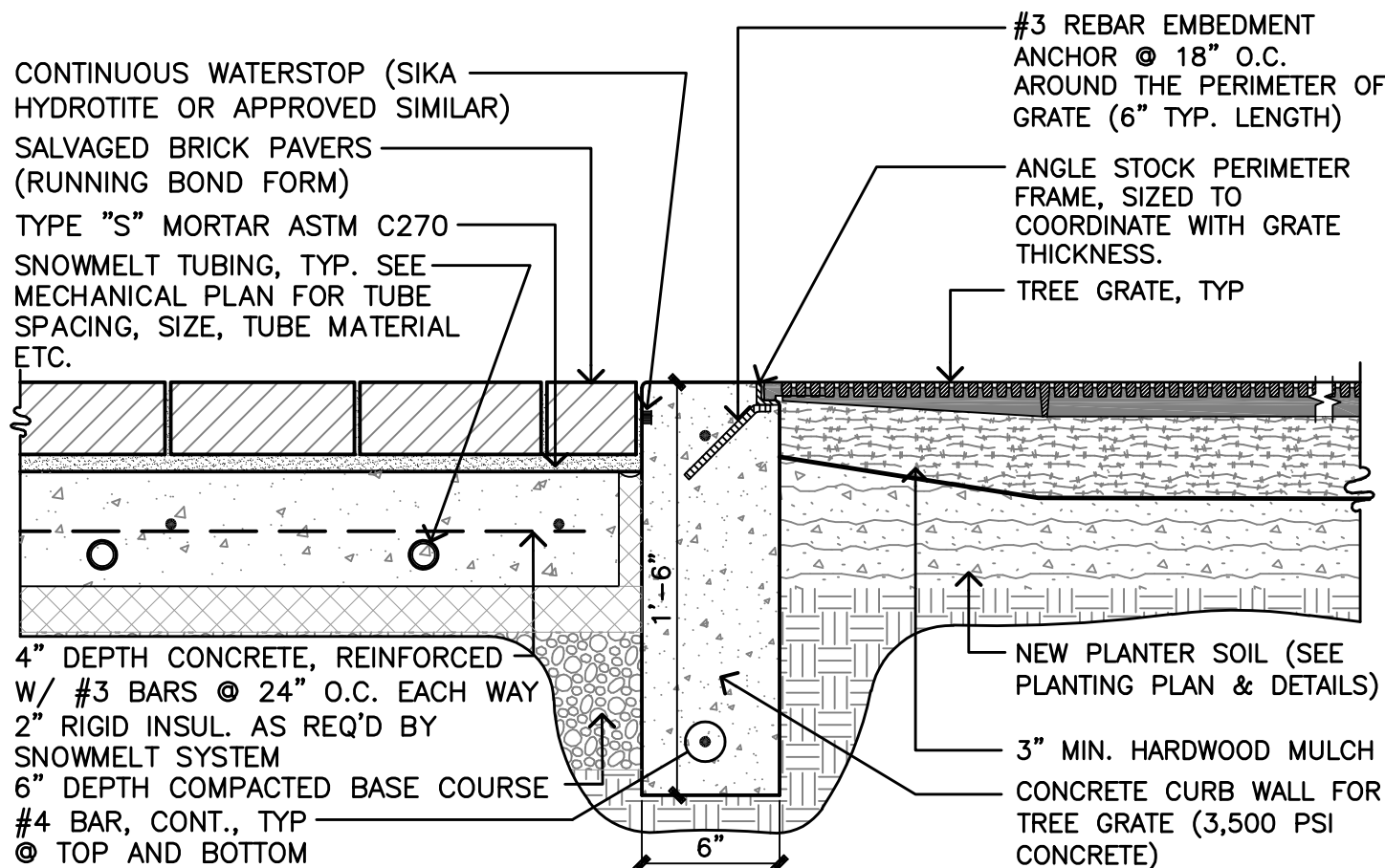
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PROJECT STATUS: CONSTRUCTION DOCUMENTS

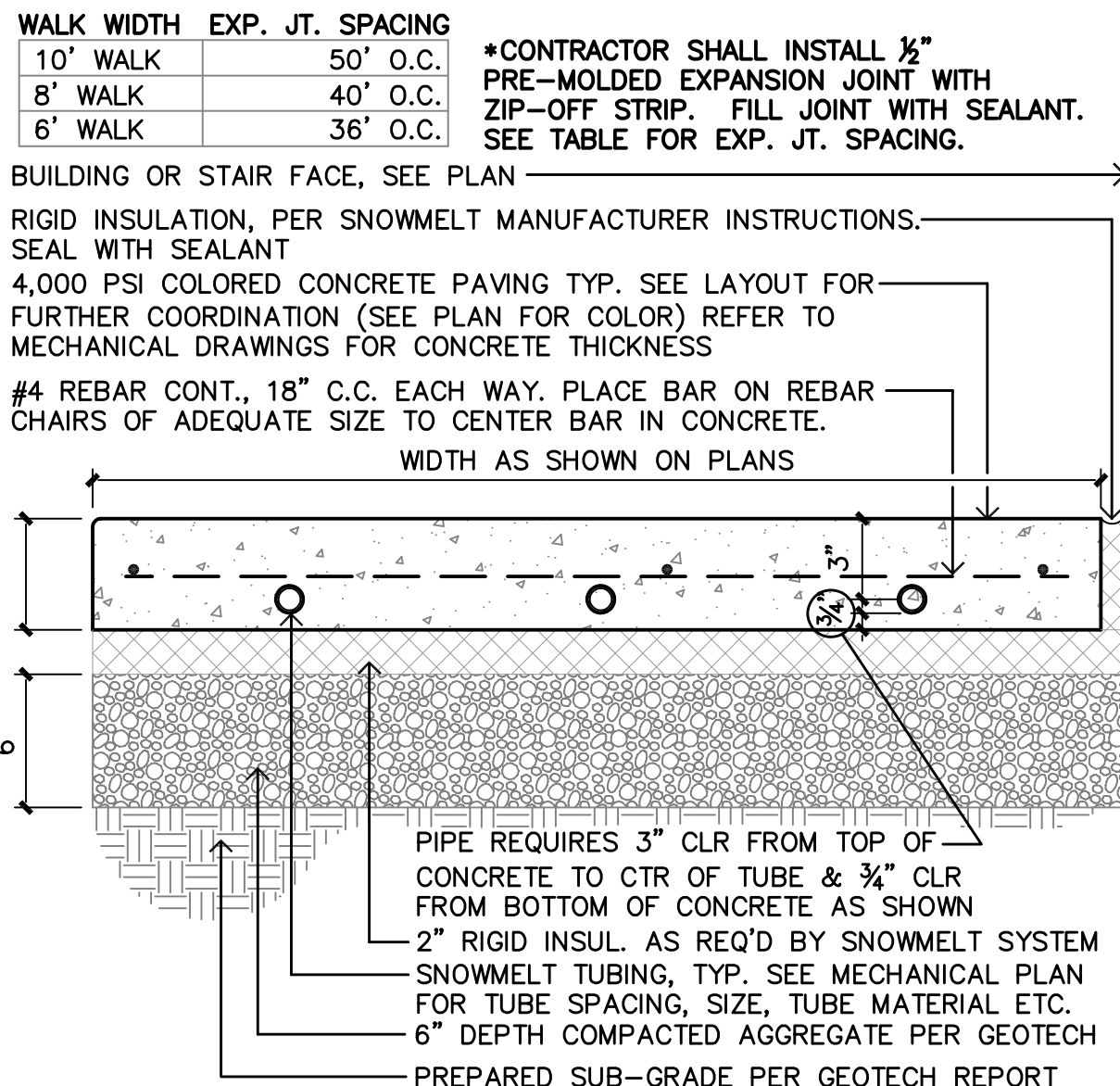
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DATE: 4/10/2019 SHEET NO:

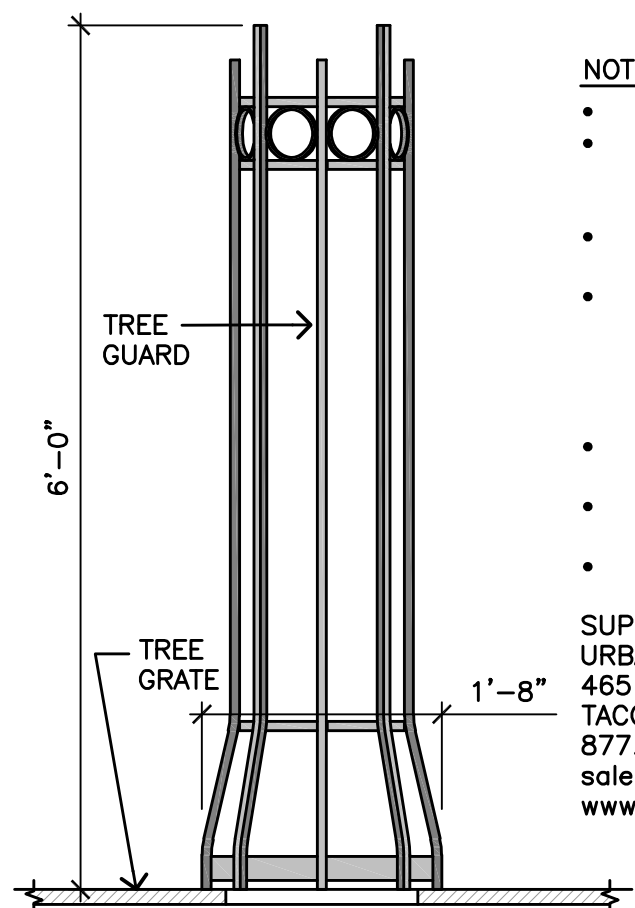
PROJECT NO: **L201**



1 SECTION: TREE GRATE AT BRICK PAVING SURROUND
L202 SCALE: 1 1/2" = 1'-0"

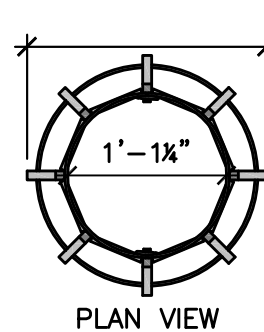


2 SECTION: CONCRETE PAVING AT SNOW MELT AREAS
L202 SCALE: 1 1/2" = 1'-0"

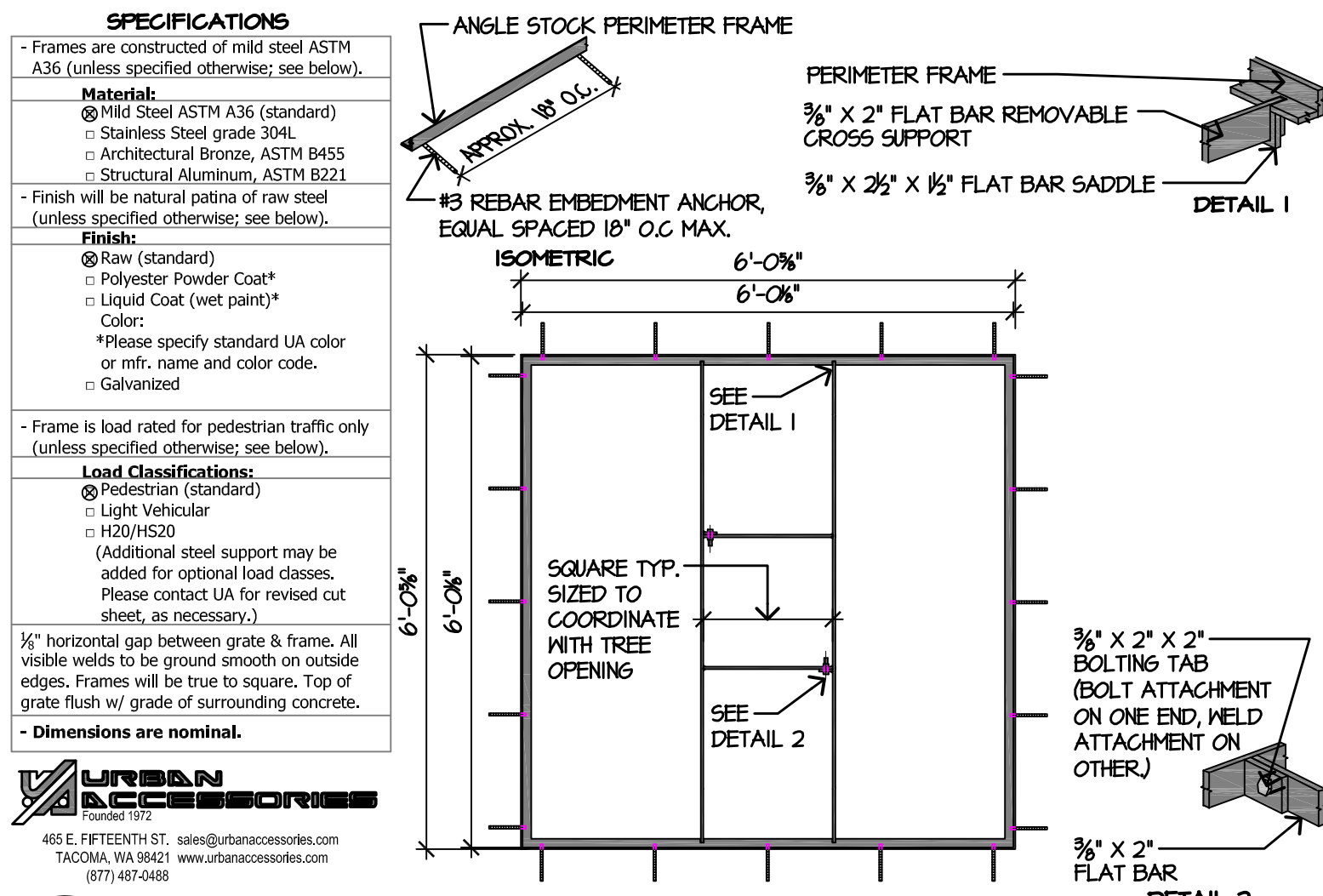


- NOTES:
- TREE GRATE MODEL: 'OLD TOWN 24' - 8' SQUARE
 - FABRICATED COMPONENTS WILL BE MILD CARBON STEEL, ASTM A36. FABRICATION WILL BE TRUE TO SQUARE, OR DIAMETER AND SIZED WITHIN 1/8"
 - GRATE SHALL BE MANUFACTURED FROM RECYCLED ALUMINUM, ASTM B261 STANDARD FINISH
 - CASTINGS WILL BE SQUARED & FLAT, FREE OF BURRS, SLAG, AIR POCKETS, BLOW HOLES, FLASHING, & GRINDING OR WELDING ON EXPOSED SURFACES. EXCESSIVE WARPING OR SHRINKAGE IS NOT ACCEPTABLE.
 - EACH TREE GUARD SHALL BE POWDERCOATED BY THE MANUFACTURER. COLOR TO BE BLACK
 - ALL WELDS SHALL BE GROUND SMOOTH PRIOR TO FINAL FINISHING
 - INSTALL PER MANUFACTURER'S INSTRUCTIONS.

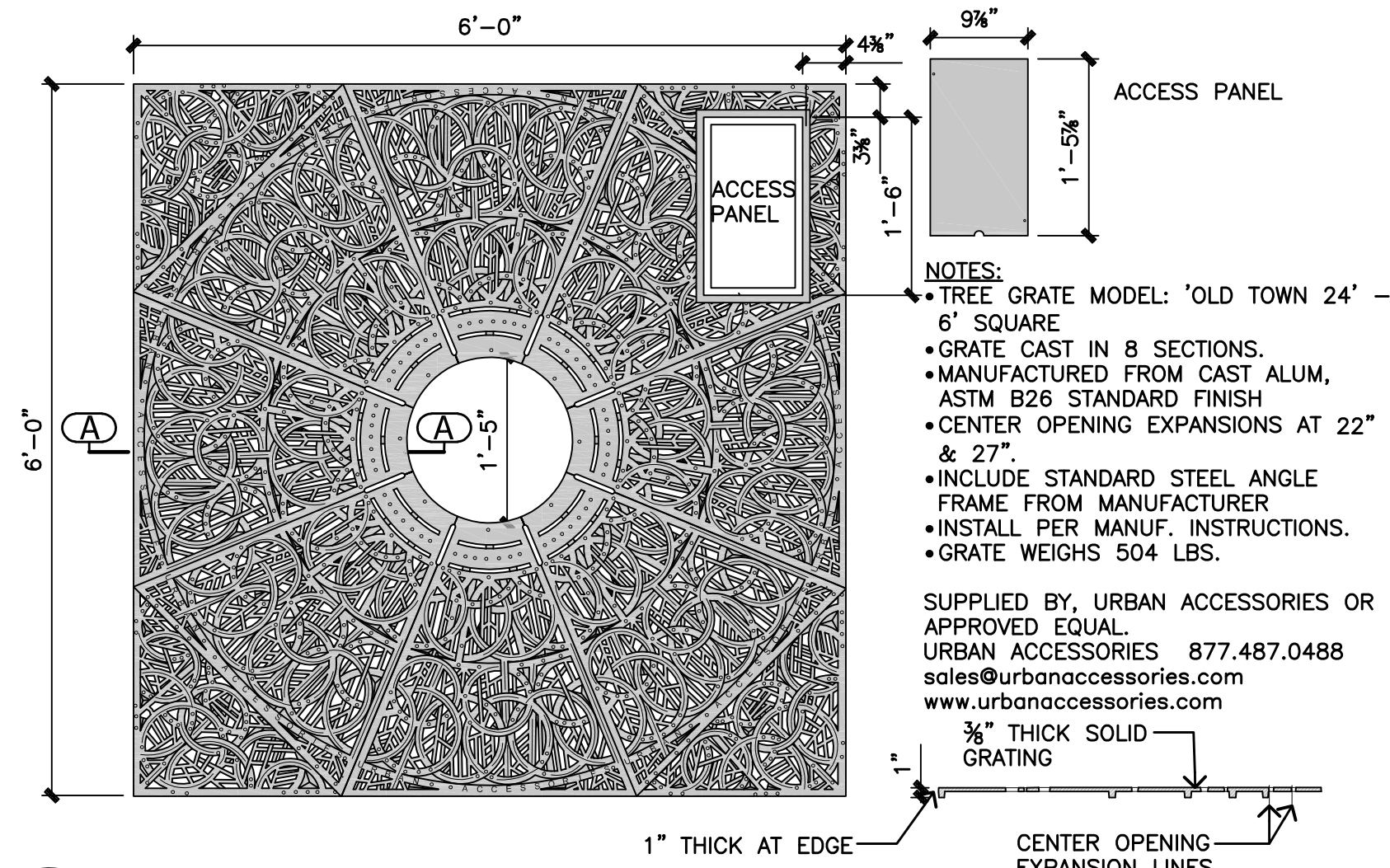
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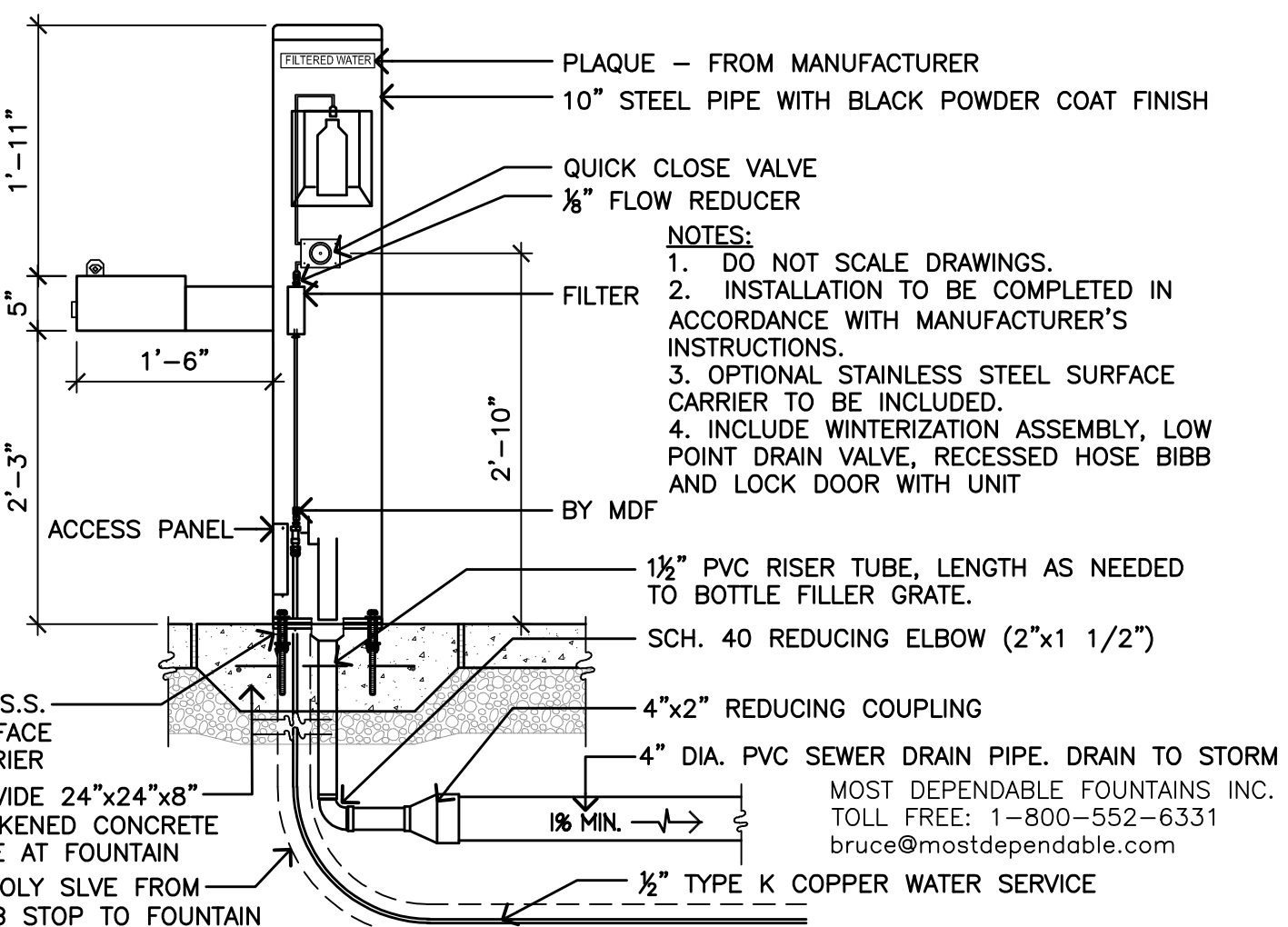
4 DETAIL: TREE GUARD
L202 SCALE: 3/4" = 1'-0"



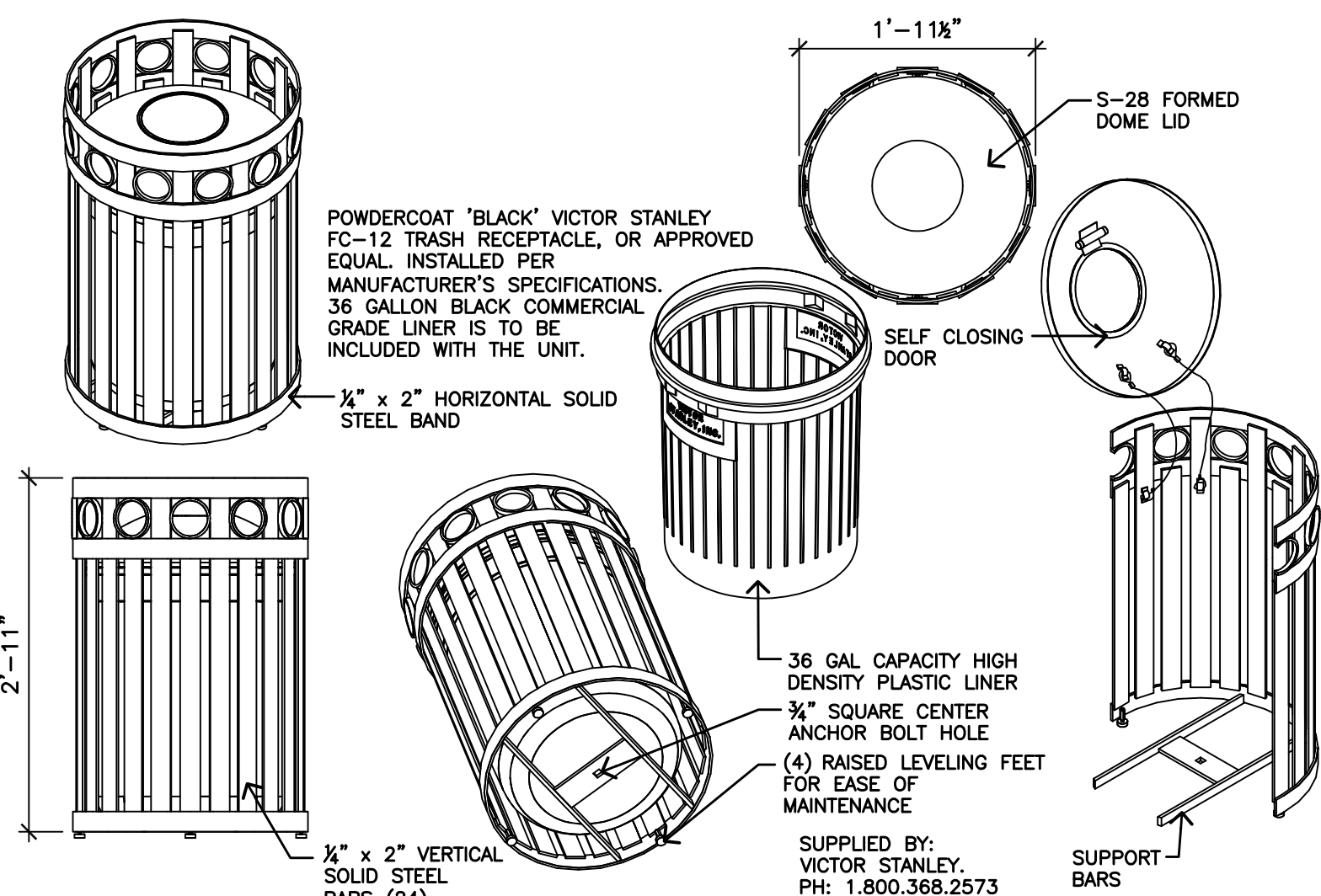
5 DETAIL: 6'X6' TREE GRATE FRAME
L202 SCALE: 1/2" = 1'-0"



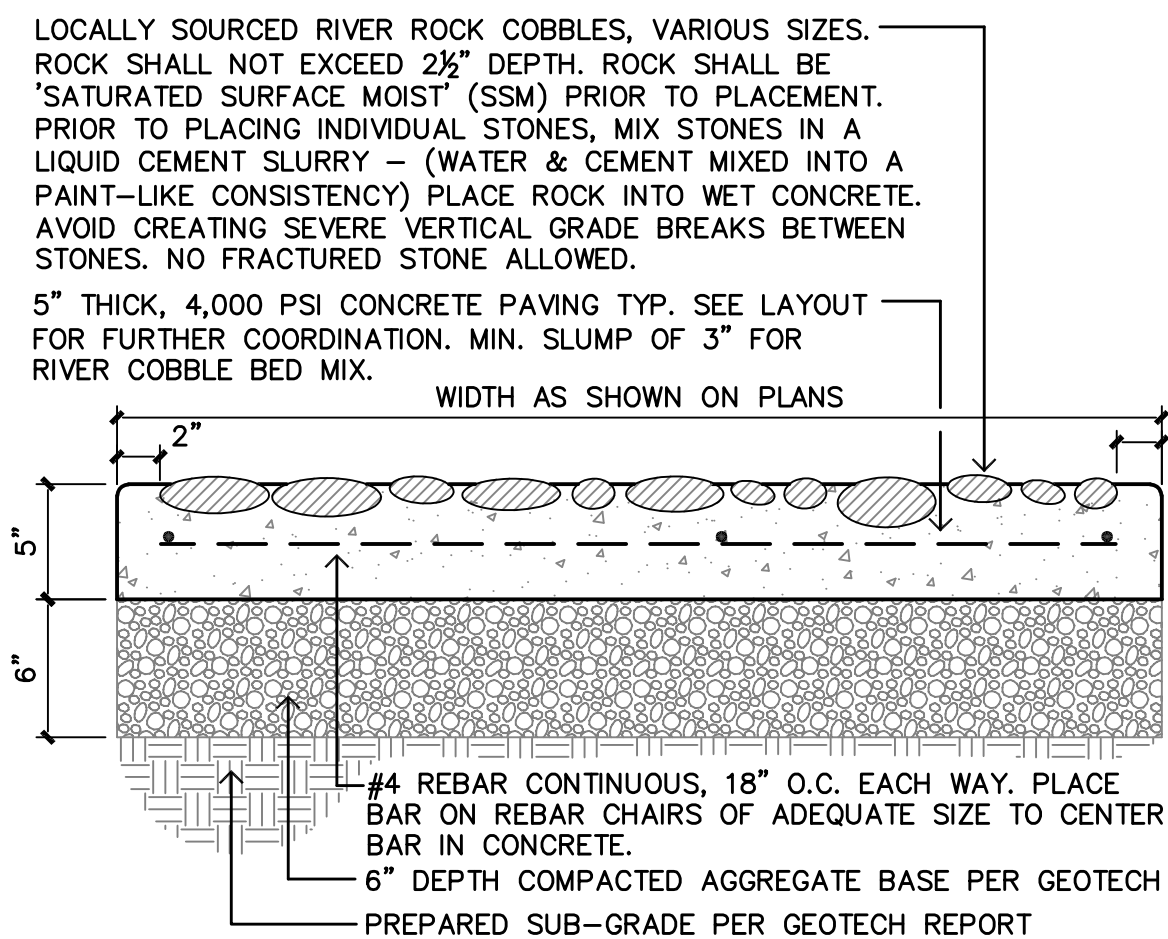
6 DETAIL: SQUARE TREE GRATE 6'x6' (OLD TOWN TITLE 24)
L202 SCALE: 3/4" = 1'-0"



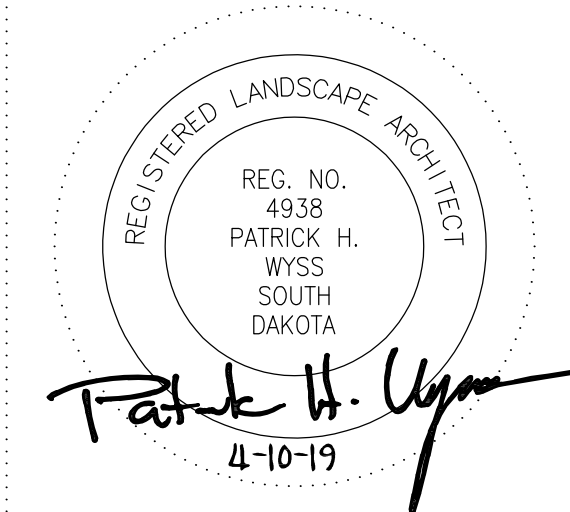
7 DETAIL: BOTTLE FILLER MDF MODEL # 10135 SM
L202 SCALE: 3/4" = 1'-0"



8 DETAILS: VICTOR STANLEY 32GAL RECEPTACLE
L202 SCALE: 3/4" = 1'-0"



9 SECTION: RIVER ROCK BED IN CONCRETE BASE
L202 SCALE: 1 1/2" = 1'-0"



OUTLAW SQUARE BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

SITE DETAILS

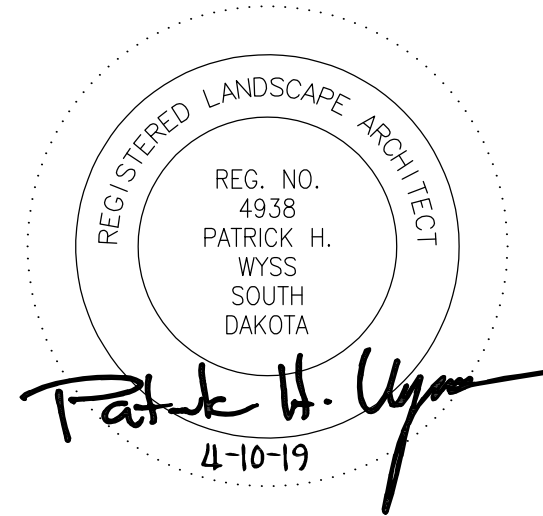
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OUTLAW SQUARE BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

SITE DETAILS

ISSUED FOR: DATE:

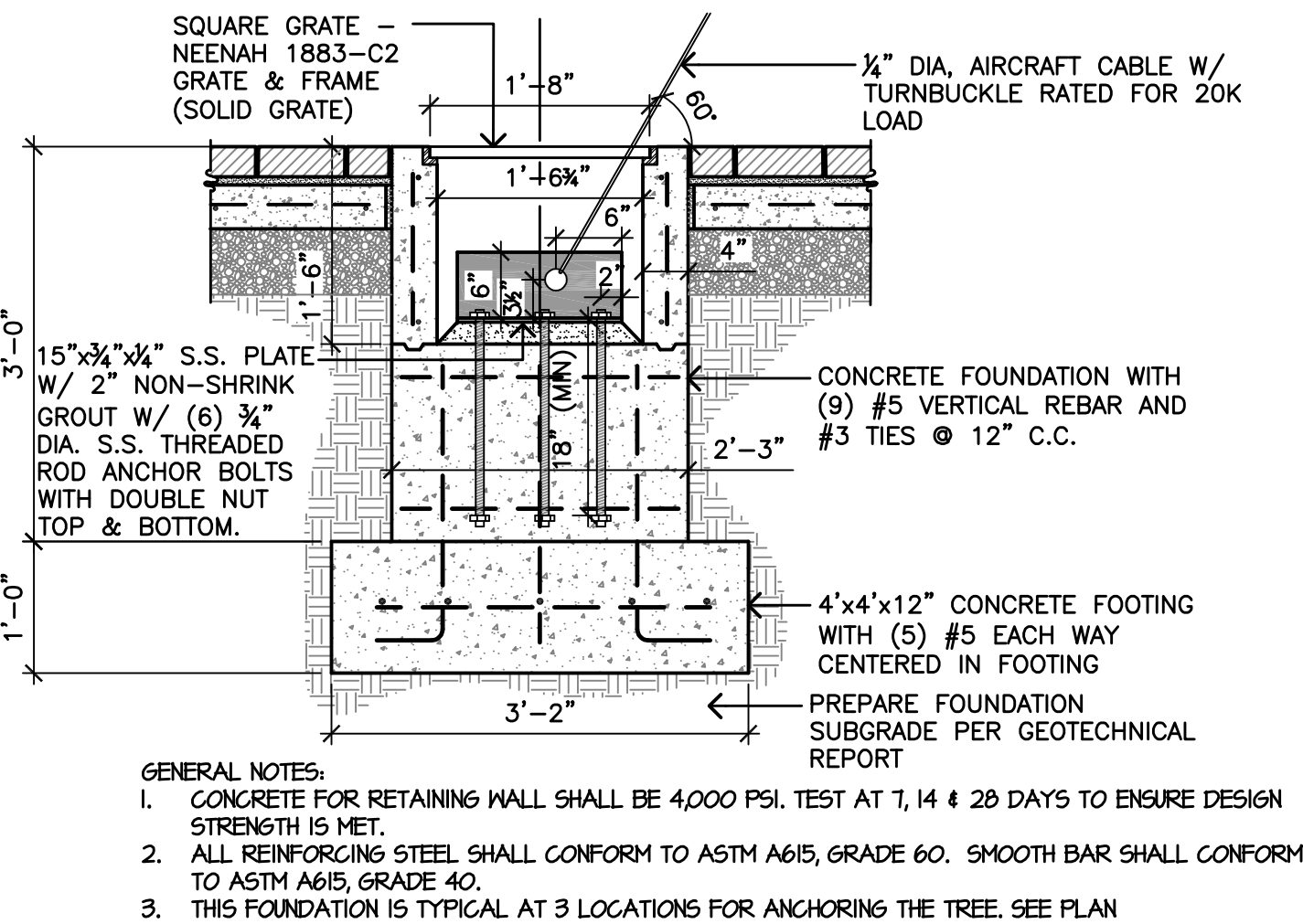
PROJECT STATUS:
CONSTRUCTION DOCUMENTS

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DATE:
4/10/2019 SHEET NO:

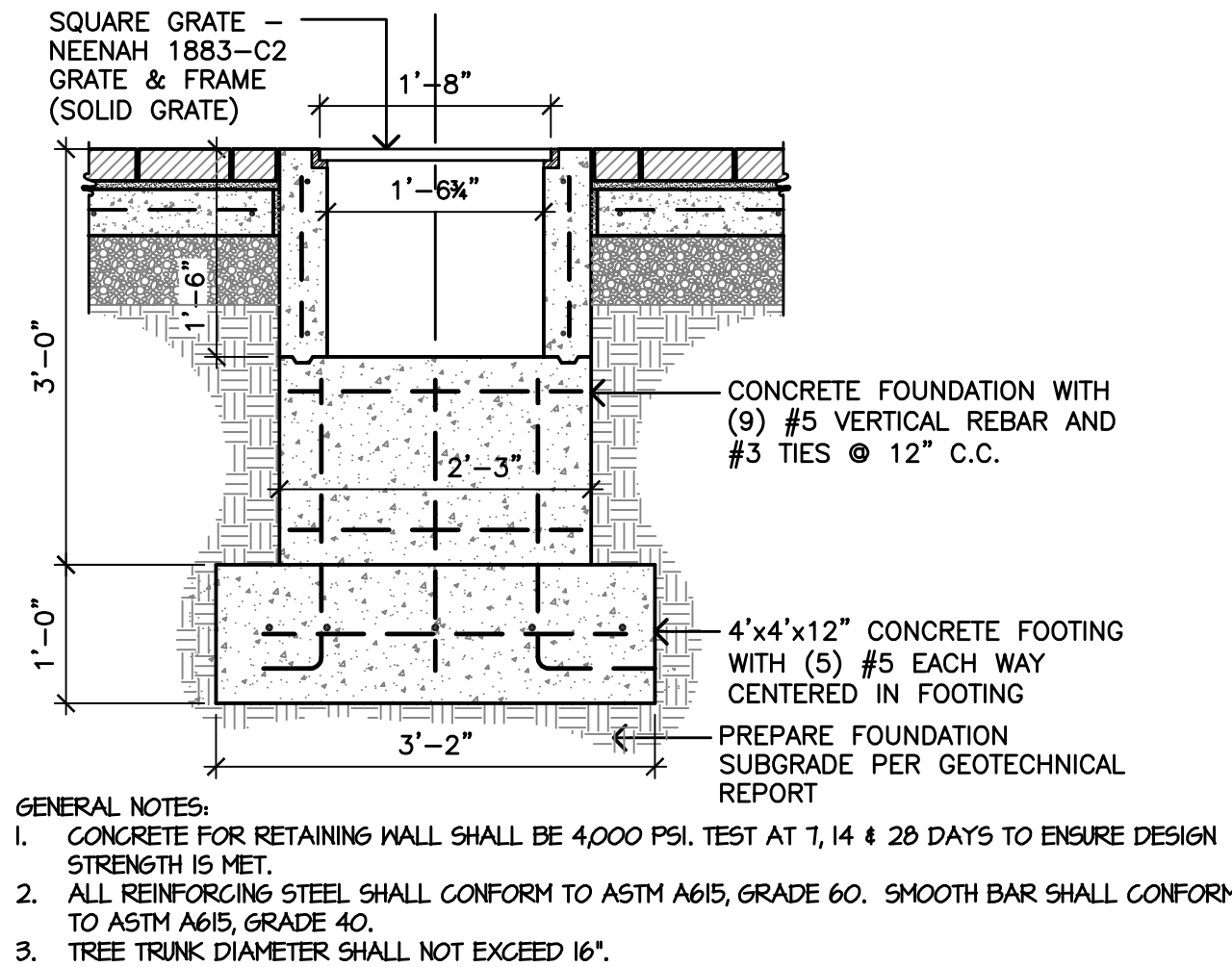
PROJECT NO:

L203



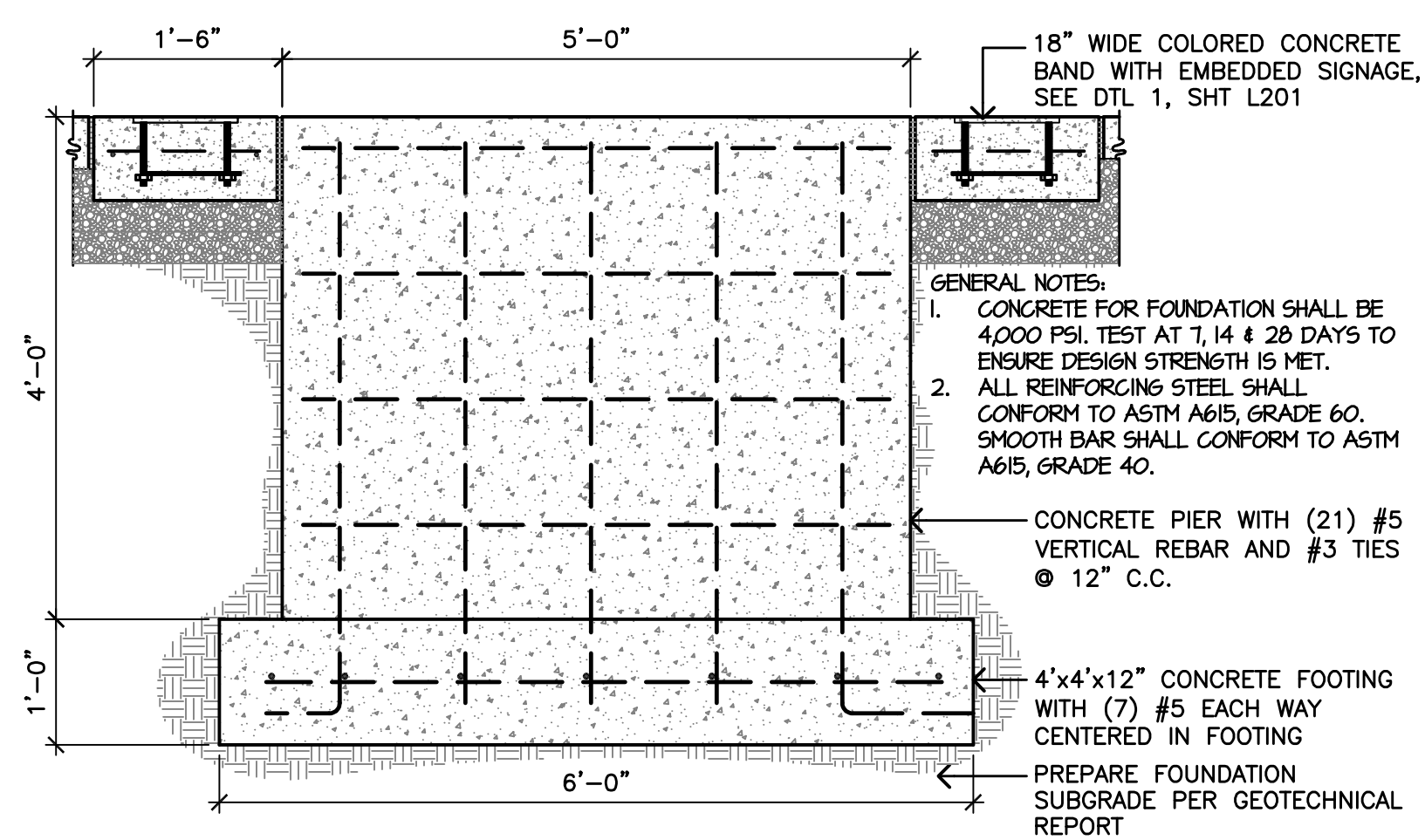
1 SECTION: FOUNDATION - CHRISTMAS TREE GUYING

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



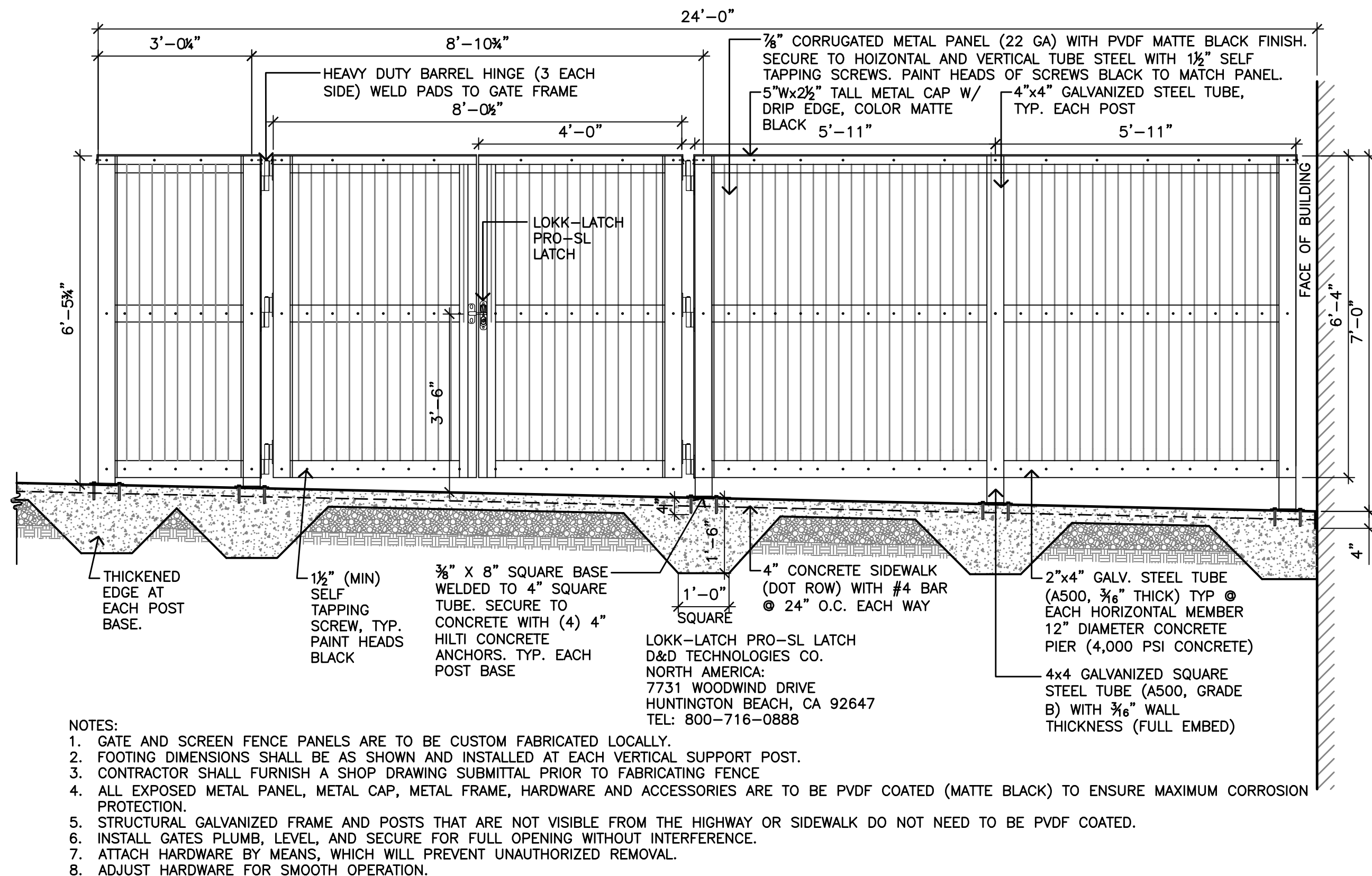
2 SECTION: FOUNDATION - CHRISTMAS TREE SUPPORT

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



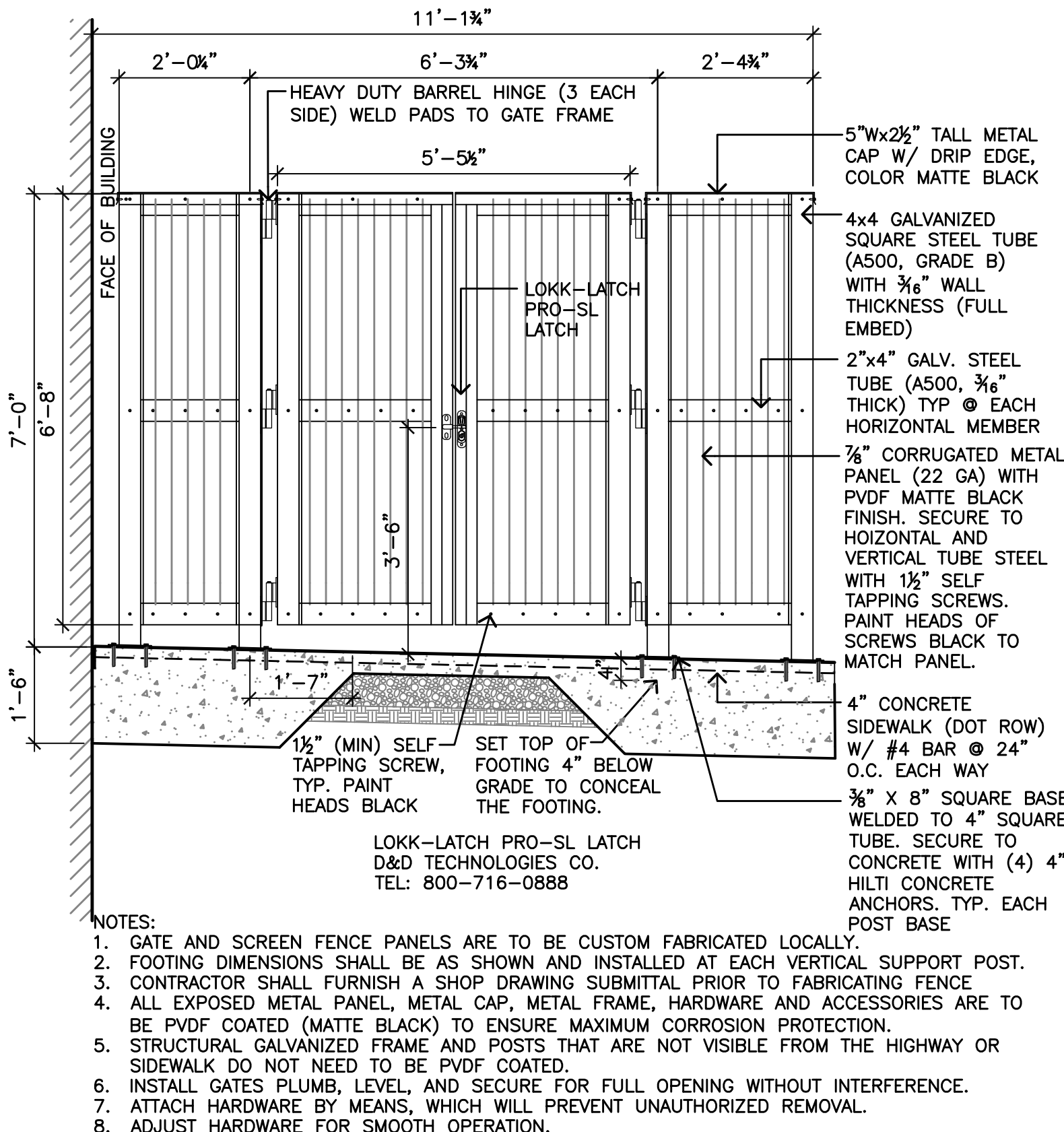
3 SECTION: CIRCULAR FOUNDATION FOR FUTURE SCULPTURE

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



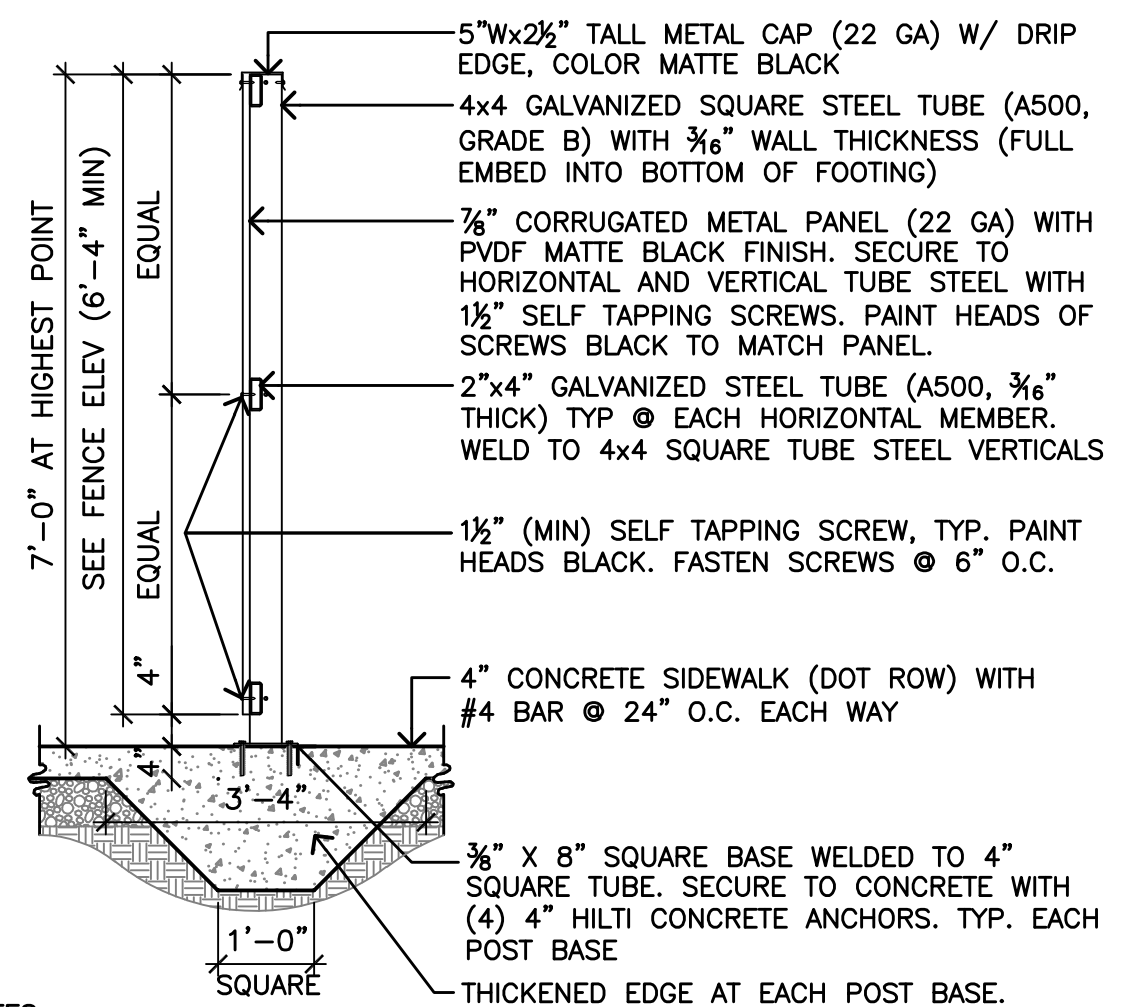
4 DETAIL: 7' SCREEN FENCE AND GATE (LOOKING FROM HIGHWAY 14A)

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



5 DETAIL: 7' SCREEN FENCE & GATE (VIEW FROM PLAZA)

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



NOTES:
1. GATE AND SCREEN FENCE PANELS ARE TO BE CUSTOM FABRICATED LOCALLY.
2. FOOTING DEPTH SHALL BE AS SHOWN & INSTALLED AT EA. VERT. SUPPORT POST.
3. CONTRACTOR TO FURNISH SHOP DRAWING SUBMITTAL PRIOR TO FABRICATION
4. ALL EXPOSED MTL PANEL, CAP, METAL FRAME, HARDWARE & ACCESSORIES ARE TO BE PVDF COATED (MATTE BLACK) TO ENSURE MAXIMUM CORROSION PROTECTION.
5. STRUCTURAL GALVANIZED FRAME AND POSTS THAT ARE NOT VISIBLE FROM THE HIGHWAY OR SIDEWALK DO NOT NEED TO BE PVDF COATED.
6. INSTALL GATES PLUMB, LEVEL, & SECURE FOR FULL OPENING WITHOUT INTERFERENCE.
7. ATTACH HARDWARE BY MEANS, WHICH WILL PREVENT UNAUTHORIZED REMOVAL.
8. ADJUST HARDWARE FOR SMOOTH OPERATION.

6 SECTION: 7' METAL SCREEN FENCE

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



DEADWOOD, SOUTH DAKOTA

ISSUED FOR: DATE:

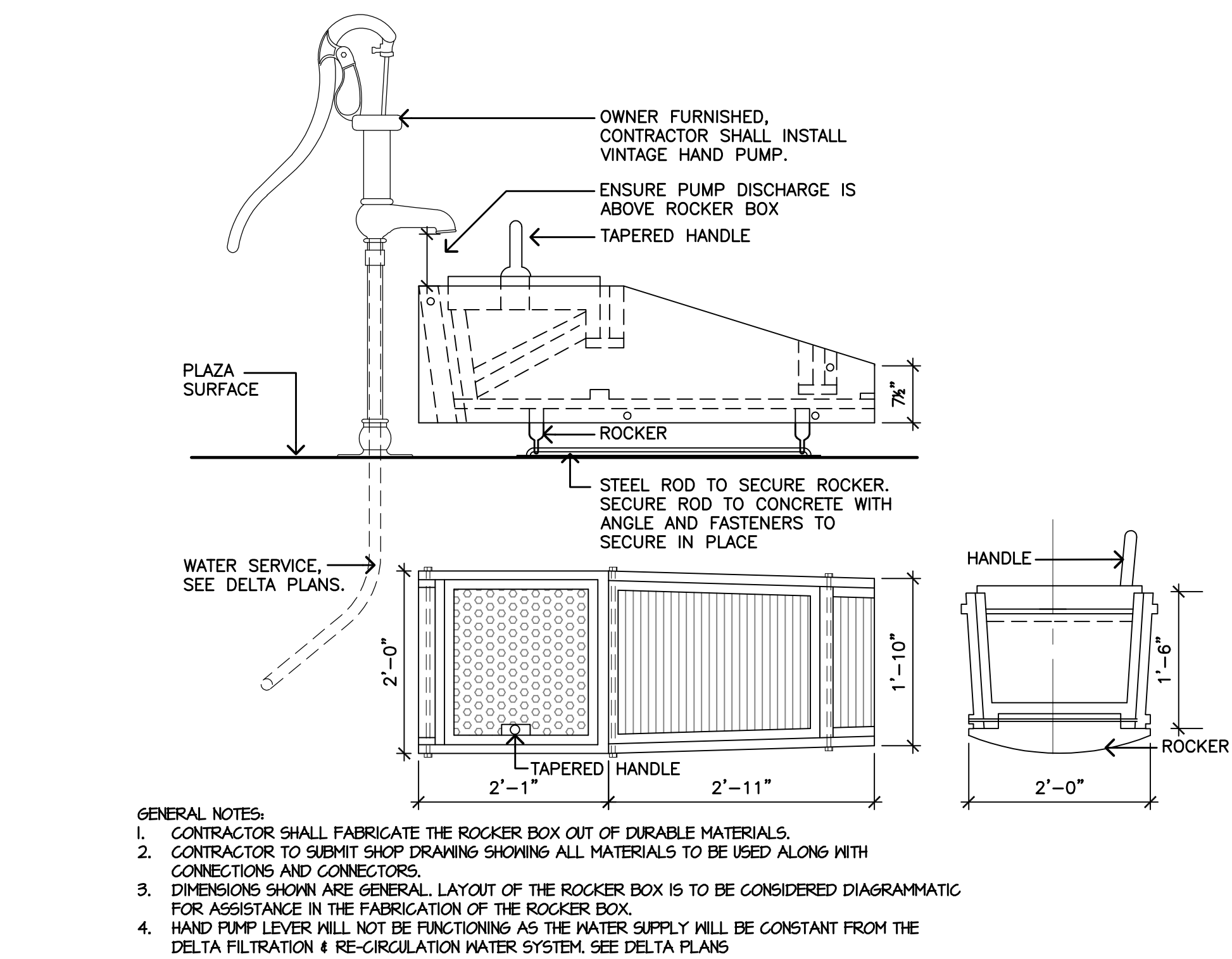
PROJECT STATUS:
CONSTRUCTION DOCUMENTS

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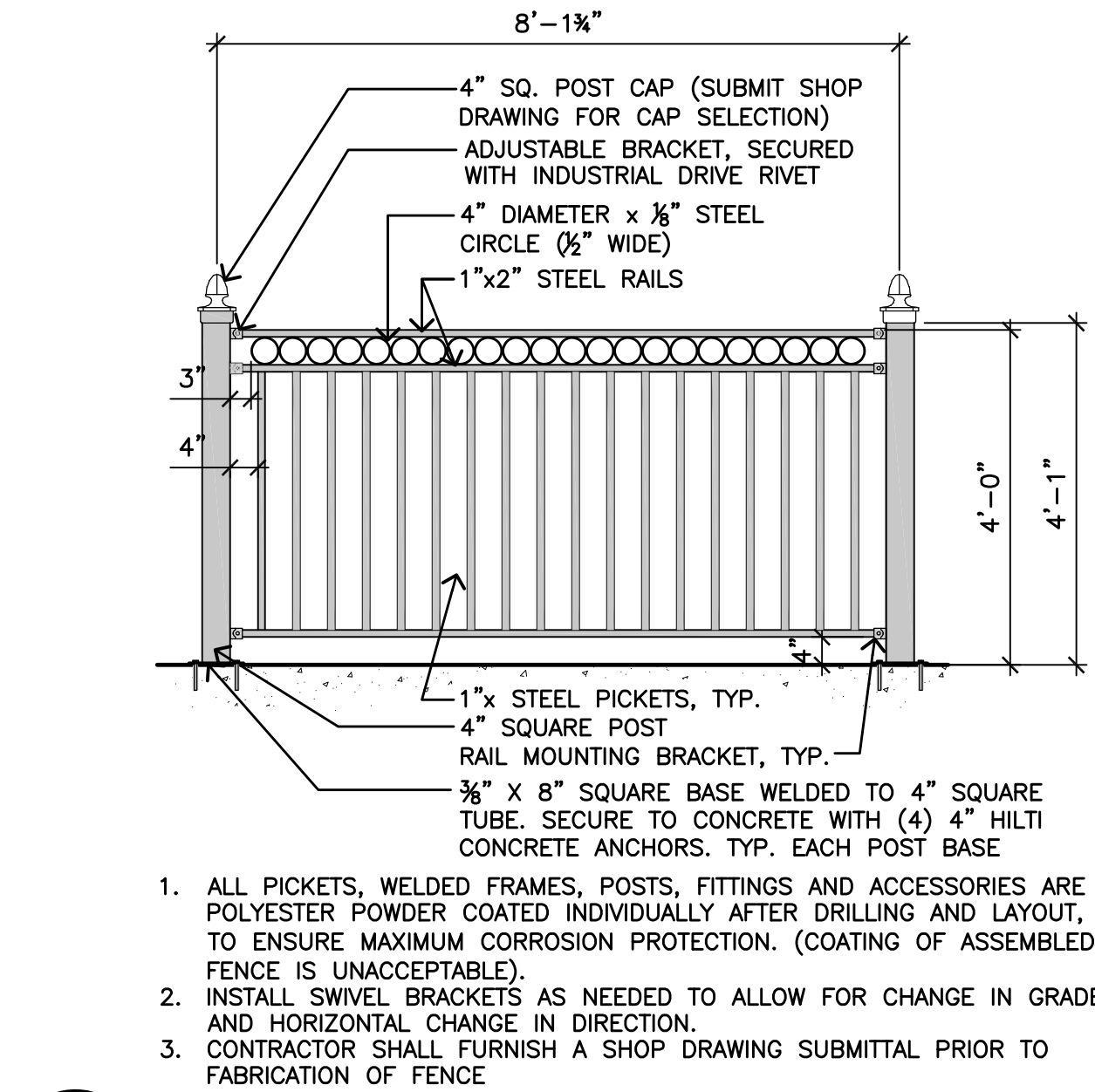
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PROJECT NO: **L204**

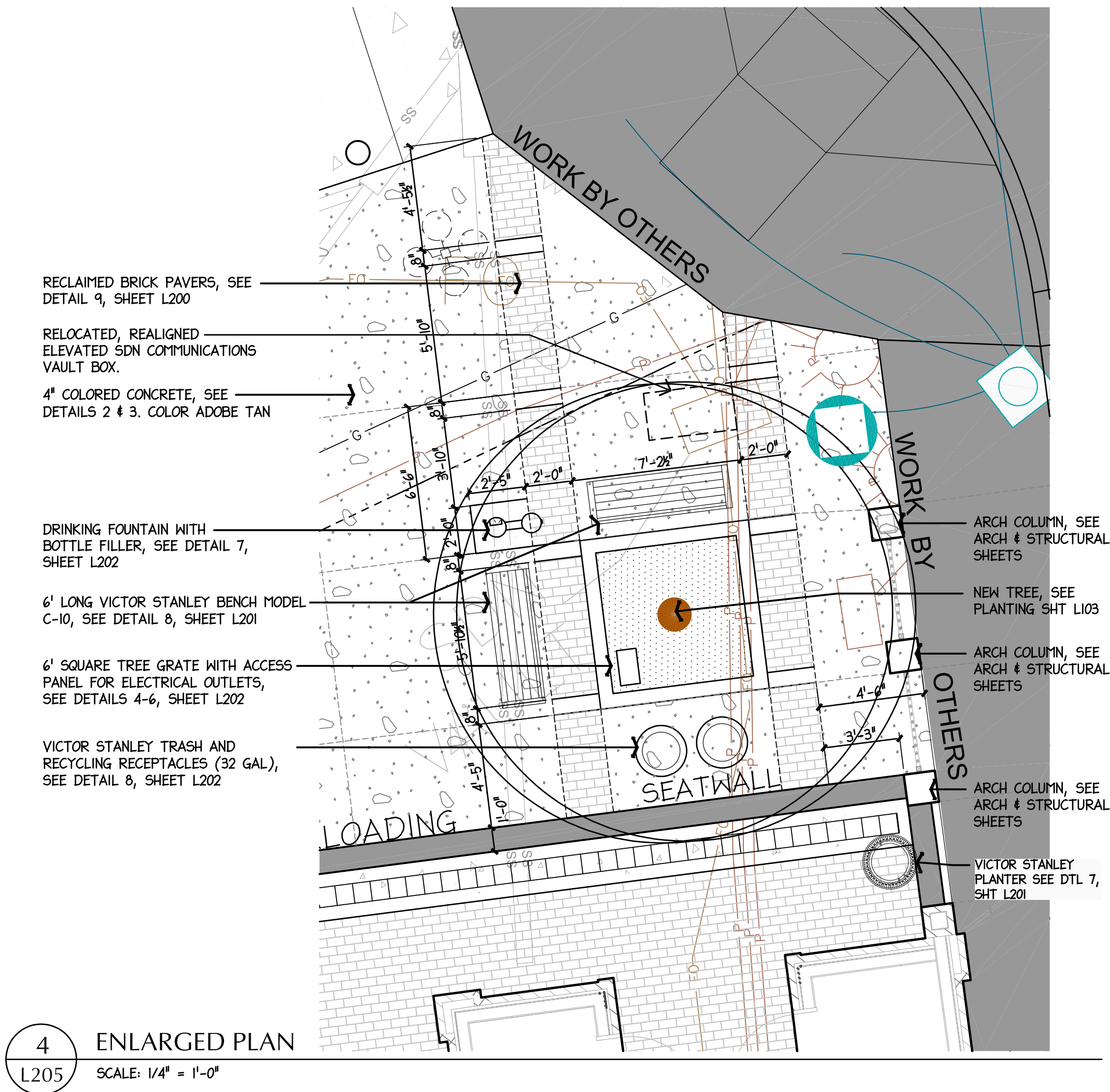




1 SECTION & DETAILS: ROCKER BOX INTERPRETATION & PUMP
SCALE: 3/4" = 1'-0"



2 DETAIL: DECORATIVE METAL FENCE
SCALE: 1/2" = 1'-0"



4 ENLARGED PLAN
SCALE: 1/4" = 1'-0"

OUTLAW SQUARE BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

SITE DETAILS

ISSUED FOR: DATE:

ARCH COLUMN, SEE ARCH & STRUCTURAL SHEETS
NEW TREE, SEE PLANTING SHIT L103
ARCH COLUMN, SEE ARCH & STRUCTURAL SHEETS
ARCH COLUMN, SEE ARCH & STRUCTURAL SHEETS
VICTOR STANLEY PLANTER SEE DTL 7, SHIT L201

PROJECT STATUS:
CONSTRUCTION DOCUMENTS

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DATE:
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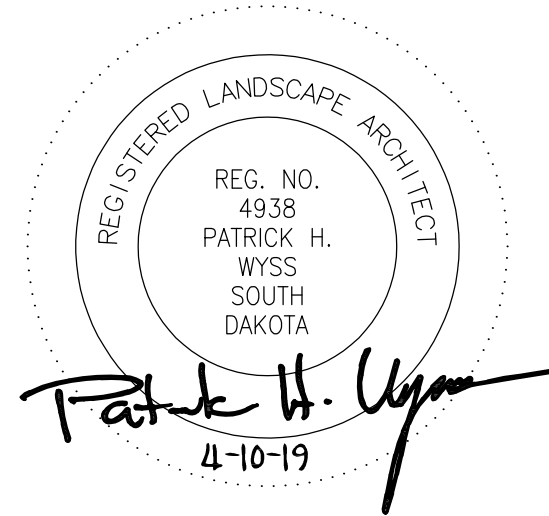
PROJECT NO:
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OUTLAW SQUARE BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

PLANTING DETAILS

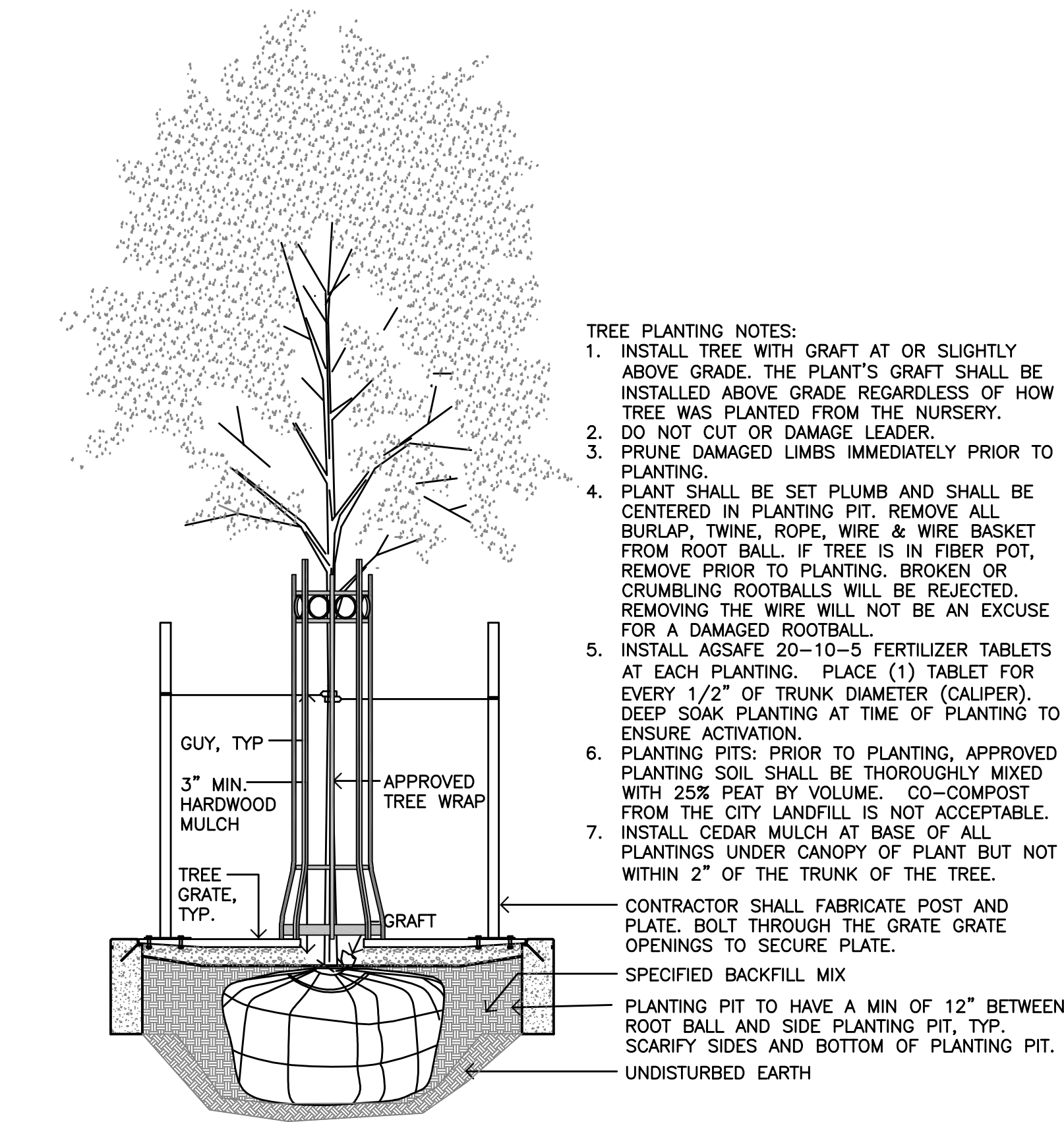
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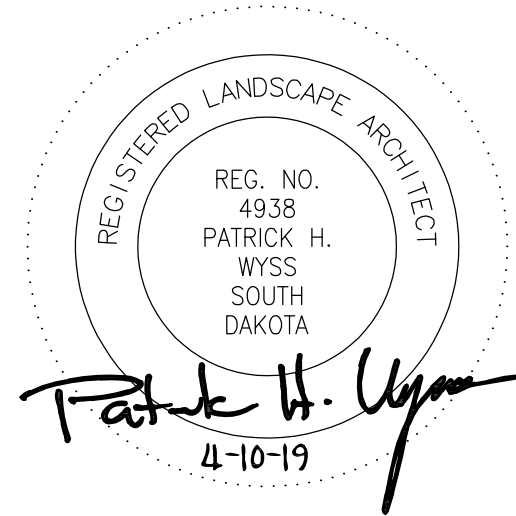
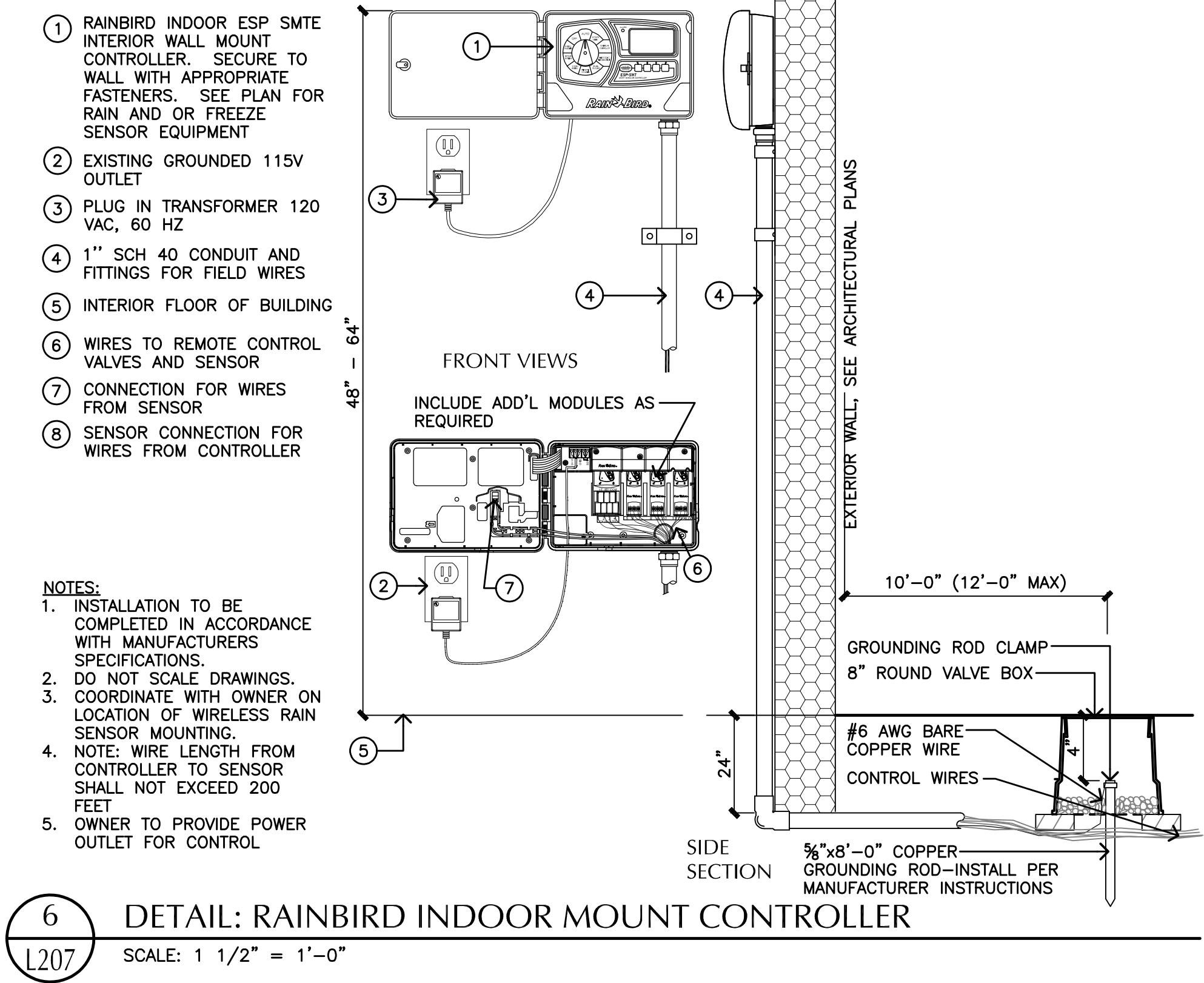
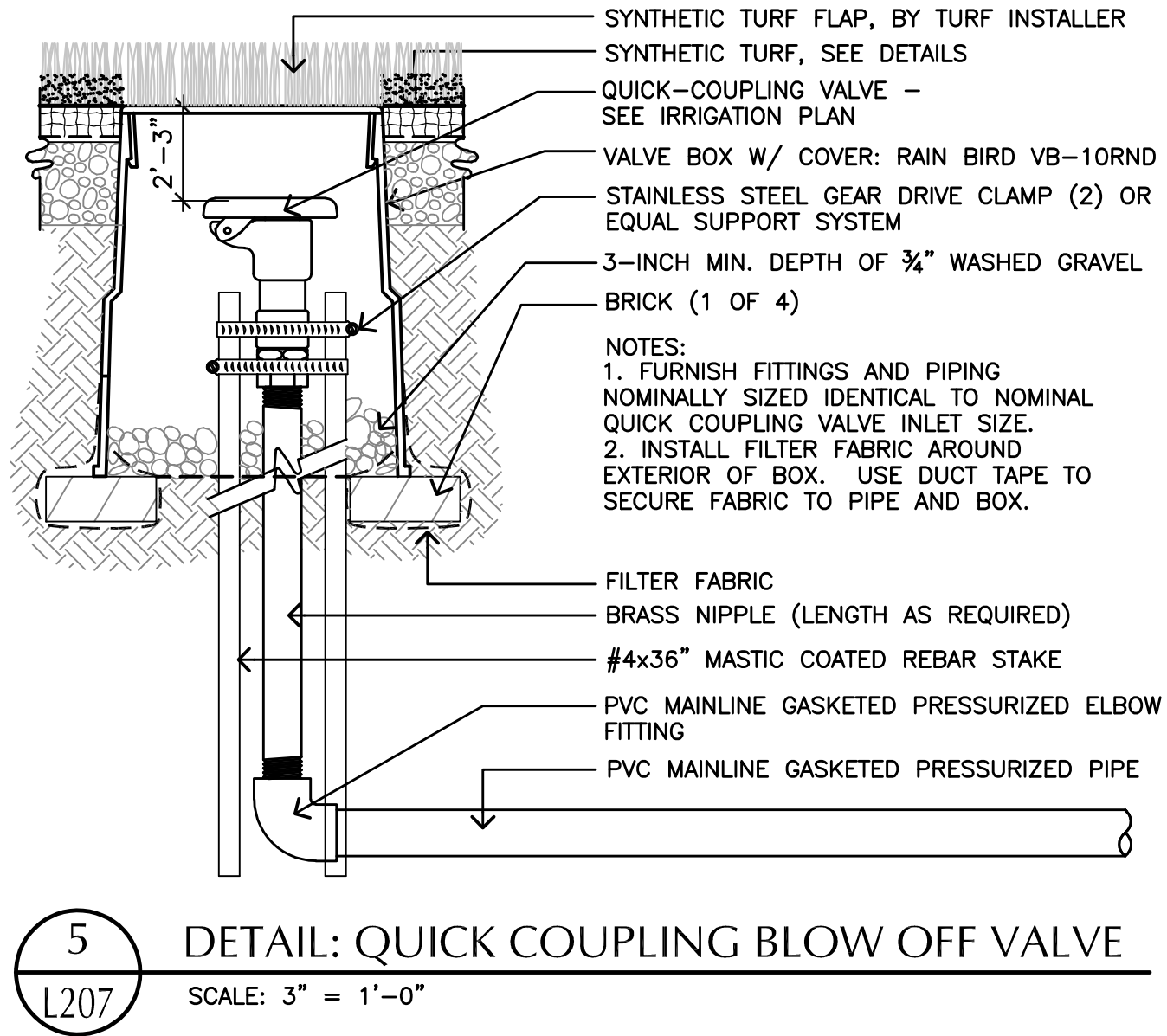
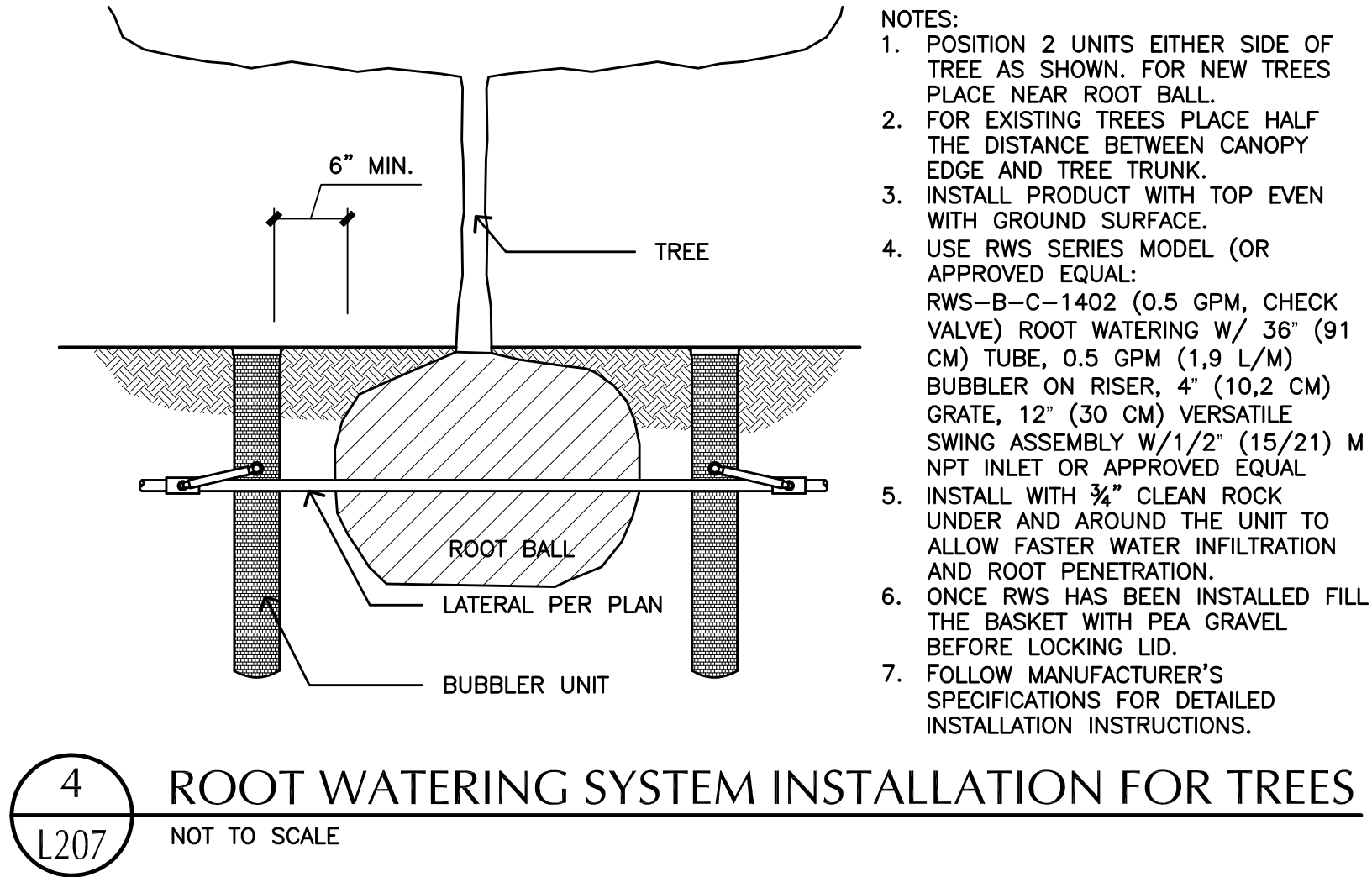
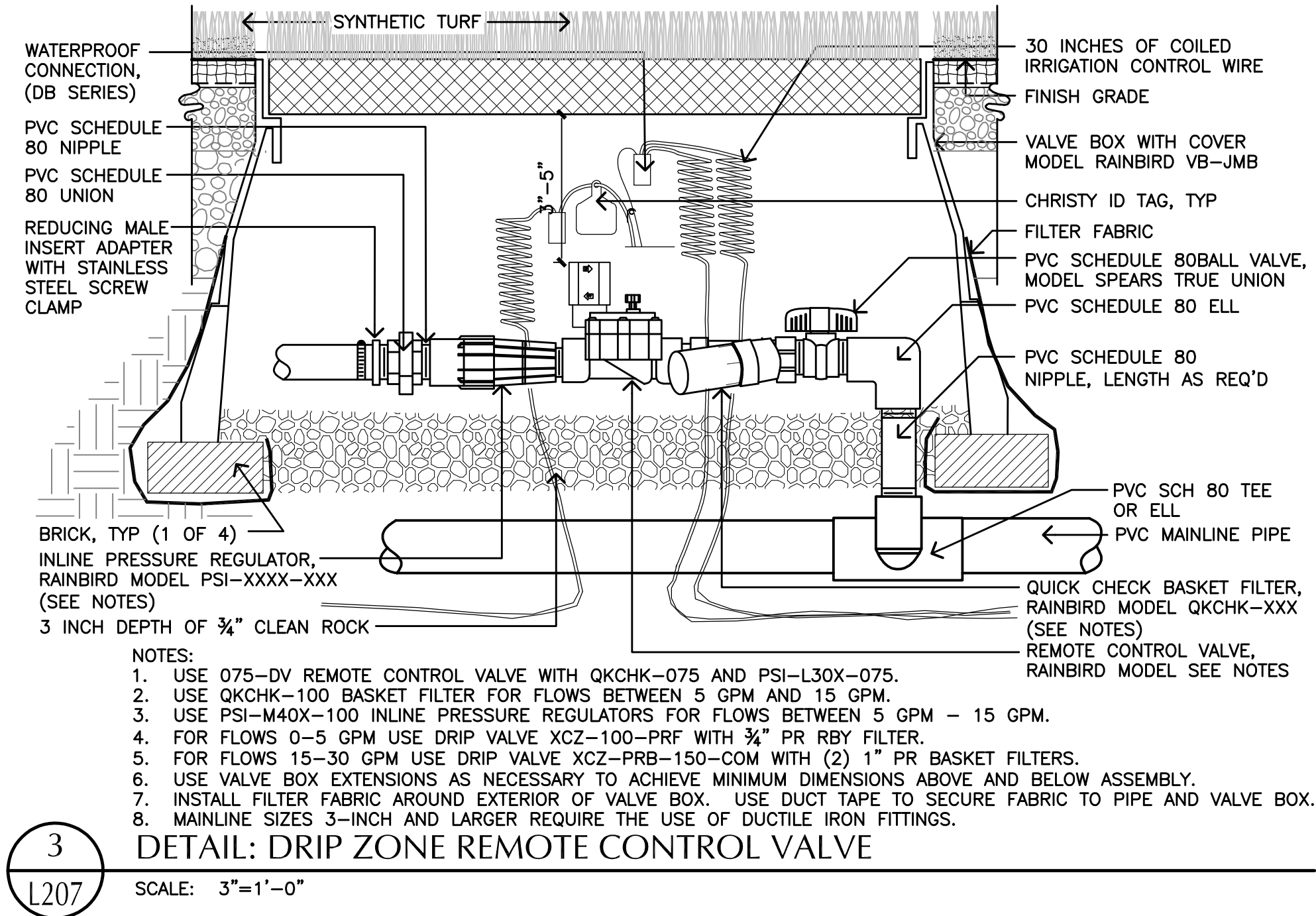
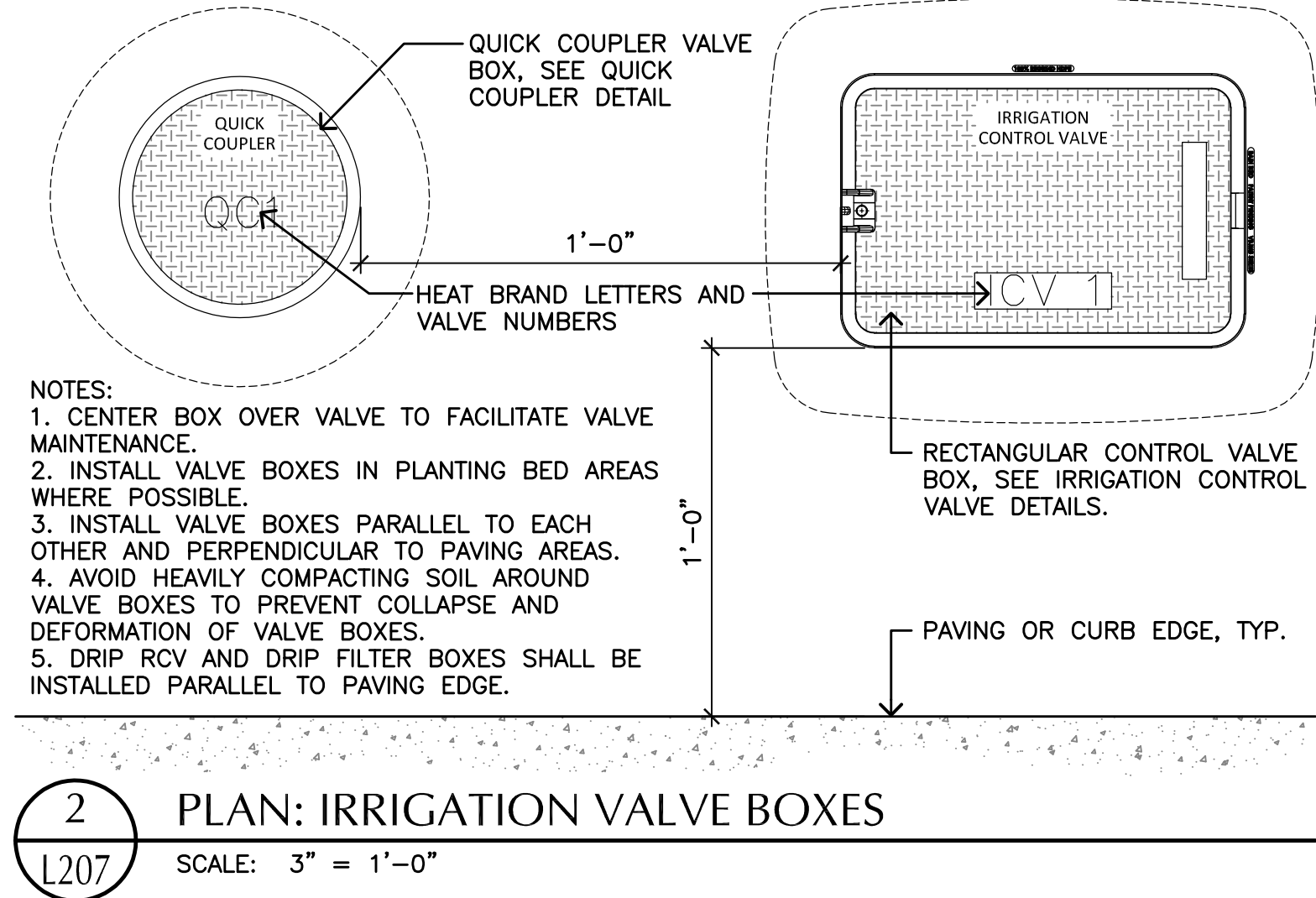
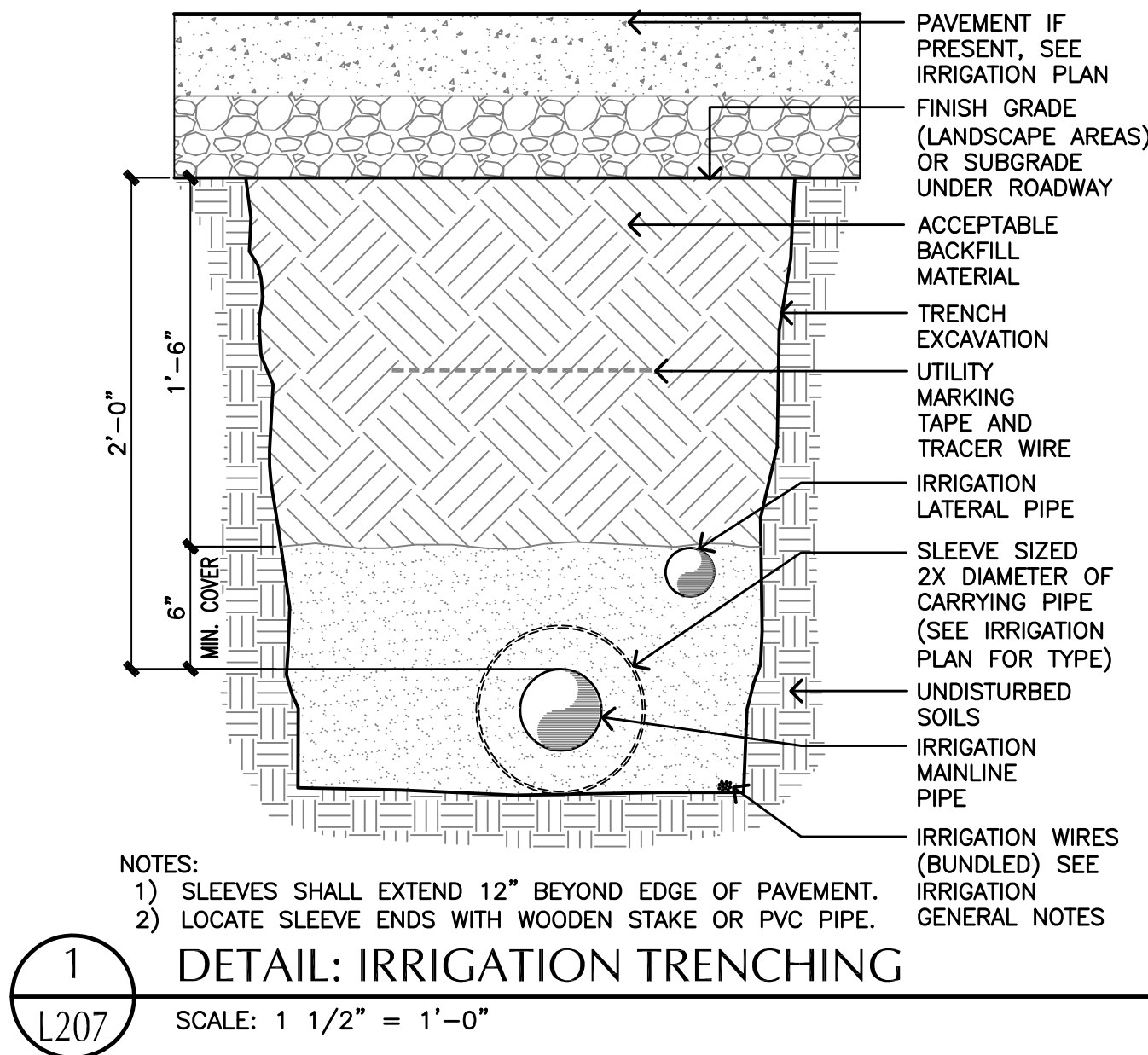
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DATE:
4/10/2019 SHEET NO:

PROJECT NO:
L206



1 SECTION: TYPICAL B&B DECIDUOUS TREE IN GRATE
L206 SCALE: 1/2" = 1'-0"



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728 6th St. Rapid City, SD 57701
(605) 348-2268 wyssassociates.com

OUTLAW SQUARE BID PACKAGE 3

DEADWOOD, SOUTH DAKOTA

IRRIGATION DETAILS

ISSUED FOR: DATE:

PROJECT STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: CMW CHECKED BY: PHW

DATE:
4/10/2019 SHEET NO:

PROJECT NO: **L207**



1750 East North Street • Rapid City, South Dakota 57701-9586
Telephone (605) 348-8744 • (800) 456-5328 • Fax (605) 348-7730

SHOP DRAWING REVIEW

CONTRACTOR REVIEW

REVIEWED BY – DAN ANDERSON

May 14 2019

PROJECT – Outlaw Square

SPECIFICATION # - 265600

ITEM/ITEMS – Exterior Light Fixture Type SC (M

Supplier : Crum Electric

Phone – 605-342-8830

Note:

Need more info on mounting and dimensions

- ☐ NO EXCEPTIONS TAKEN
- ☒ NOTE MARKINGS
- ☐ REVISE AND RESUBMIT
- ☐ REJECTED

DATE: 05/23/2019

REVIEWER:
Jamie Stampe

ENGINEERS REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. MARKINGS OR COMMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT, DRAWINGS, OR SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR: VERIFICATION AND COORDINATION OF ALL DIMENSIONS AND QUANTITIES. VERIFICATION OF COMPATABILITY BETWEEN THIS EQUIPMENT AND INTERRELATED EQUIPMENT AND SYSTEMS. VERIFICATION OF DIMENSIONS ON APPROVED AS EQUAL EQUIPMENT TO INSURE ALL EQUIPMENT WILL FIT IN THE ALLOCATED SPACE.



SUBMITTAL REVIEW

- ☒ Reviewed
- ☐ Reviewed w/ Changes Noted
- ☐ Revise and Resubmit
- ☐ Rejected _____

SUBMITTAL WAS REVIEWED FOR DESIGN CONFORMITY AND GENERAL CONFORMANCE TO CONTRACT DOCUMENTS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING DIMENSIONS AT JOBSITE FOR TOLERANCE, CLEARANCE, QUANTITIES, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THIS WITH OTHER TRADES AND FULL COMPLIANCE WITH CONTRACT DOCUMENTS.

By: Karli Mattson Date: May 23, 2019

SCULL CONSTRUCTION SERVICES

CONRAD'S BIG "C" ELECTRIC	
Reviewed <input checked="" type="checkbox"/>	Rejected/ <input type="checkbox"/> Resubmit
Make Corrections Noted <input type="checkbox"/>	
By <u>Dan Anderson</u>	
Date <u>May 14, 2019</u>	

**Submittal Review**

Date: 5/23/19
Equipment: Exterior Lighting
Specification: 265600
Skyline Reference No: 265600-2

Project: Outlaw Square
Skyline Project No.: 18035
By: Stampe

Engineer's review is only for general conformance with the design intent. Markings or comments shall not relieve the contractor from compliance with the contract drawings and specifications. The comments noted on this sheet are in addition to any comments noted throughout the shop drawing submittal sheets. The contractor shall be responsible for verification and coordination of all dimensions and quantities, verification of compatibility between this equipment and interrelated equipment and systems, and verification of dimensions on approved as equal equipment to insure all equipment will fit into allocated space.

Action: 1) No Exceptions Taken 2) Address Remarks and Markings, Resubmittal Not Required
3) Address Remarks and Markings, Resubmit 4) Rejected 5) Returned Without Review

Item	Action	Remarks
General		
SC	2	Lamp seems fine. Coordinate with fixture.
SL	2	Beam angles MUST be coordinated. Provide a semi - frosted lens.
END OF REVIEW		



SC

Customer Approval:

Signature _____

Date _____

FIXTURE: G

The PF Globe series is a classically Victorian styled fixture, which consists of a curved cast aluminum dish fitter and a white polycarbonate or acrylic globe. For this fixture, the ballast must be located in the pole base, pole shaft, arm, or ballast box. Consult factory for mounting details.

Globe Size / Color: 12 Inch White (12W)

Globe Material: Polycarbonate (P)

WALL BRACKET: 78WB

LIGHT SOURCE: INCAND120MED/

Ballast: INCAND

Voltage: 120

Socket Type: Medium Base (MED)

FINISH: BKT

Assembly shall be powder coated to Black Textured finish. Prior to coating, the assembly shall be chemically cleaned and etched in a 5-stage washing system which includes alkaline cleaning, rinsing, phosphoric etching, reverse osmosis water rinsing, and non-chrome sealing to ensure corrosion resistance.



Rev	Description	By	Date	Job Name:				
A				OUTLAW SQUARE - TYPE SC				
B				Job Location:				Drawing No.
C				DEADWOOD, SD				27635
D				Drawn By:	Drawn Date:	Checked By:	Checked Date:	
E				DBORRAS	5/1/2019	DBORRAS		



OUTLAW SQUARE
TYPE SC - LAMPS
TCP
L11A19D2527K

LED A-Lamps

OMNI-DIRECTIONAL • ALL-PURPOSE • 3-WAY

TCP's LED A-lamps provide the lighting you need at a cost you will love. Advanced factory techniques and rigorous testing ensure each lamp is perfect from day one. Install a LED A-lamp wherever you would a traditional lamp and see the improvement.

LIMITLESS OPTIONS FOR THE FOLLOWING APPLICATIONS

- General lighting
- Floor lamps
- Ceiling fixtures
- Table lamps
- Sconces

FEATURES

- Up to 85% less energy than halogen alternatives
- Long life
- Very low heat generation
- Excellent color consistency and CRI
- UL approved for damp location
- Durable plastic housing
- ANSI construction compliant

BENEFITS

- Instant energy savings
- Minimizes replacement and maintenance costs
- Perfect for sensitive display lighting such as art galleries
- Enhances colors of focal point while maintaining uniformity throughout lighting installation from lamp to lamp
- Can be used outdoors when protected from elements—withstands humidity indoors/outdoors
- Lower the risk of injury and breakage
- Fits all A-lamp installations

Dims to $\leq 10\%$ of full light level when applicable

SPECIFICATIONS

Input Line Voltage	120 VAC
Input Line Frequency.....	50/60HZ
Lamp Life (Rated)	10,000, 15,000, 20,000 or 25,000 hour options
Minimum Starting Temp	-30°C
Maximum Operating Temp.....	40°C
CRI.....	80
Suitable for use in totally enclosed fixtures. (Vapor tight or jelly jar applications may reduce life)	

*Based on 12 hours use per day

Do not use more than 2 bulbs in an enclosed fixture.

If fixture is manufactured for incandescent bulbs, use no higher than the LED equivalent wattage, as shown on this spec sheet.



1 YEAR
WARRANTY*
10,000 HOUR LAMPS

3 YEAR
WARRANTY*
15,000 HOUR LAMPS

5 YEAR
WARRANTY*
25,000 HOUR LAMPS

we know light.™



TCP®

325 Campus Dr. | Aurora, Ohio 44202 | P: 800-324-1496 | tcp.com





OUTLAW SQUARE
TYPE SC - LAMPS
TCP
L11A19D2527K

LED A-Lamps

OMNI-DIRECTIONAL • ALL-PURPOSE • 3-WAY

ITEM #	DESCRIPTION	ENERGY STAR	VOLTAGE	WATTS	INCANDESCENT WATTS	LPW	LUMENS	CCT	HOURS	CRI	MOL (inches)	DIA (inches)	WARRANTY BASE	WARRANTY YEARS	CASE QUANTITY
--------	-------------	----------------	---------	-------	-----------------------	-----	--------	-----	-------	-----	-----------------	-----------------	------------------	-------------------	------------------

LED 75W Equivalent Options *continued*

13.5W A19 A-Lamp • Dimmable • 25,000 Hour

L11A19D2527K	LED 13.5W A19 DIM 2700K	★	120	13.5	75	81.5	1100	2700K	25,000	80	4.4	2.4	E26	5	12
L11A19D2530K	LED 13.5W A19 DIM 3000K	★	120	13.5	75	81.5	1100	3000K	25,000	80	4.4	2.4	E26	5	12
L11A19D2541K	LED 13.5W A19 DIM 4100K	★	120	13.5	75	81.5	1100	4100K	25,000	80	4.4	2.4	E26	5	12
L11A19D2550K	LED 13.5W A19 DIM 5000K	★	120	13.5	75	81.5	1100	5000K	25,000	80	4.4	2.4	E26	5	12

LED 100W Equivalent Options

14W A19 A-Lamp • Non-Dimmable • 10,000 Hour

L16A19N1027K4	LED 14W A19 ND 2700K 4PK		120	14	100	107.1	1500	2700K	10,000	80	4.7	2.6	E26	1	12
L16A19N1041K4	LED 14W A19 ND 4100K 4PK		120	14	100	107.1	1500	4100K	10,000	80	4.7	2.6	E26	1	12

15.5W A19 A-Lamp • Non-Dimmable • 15,000 Hour

L16A19N1527K	LED 15.5W A19 ND 2700K	★	120	15.5	100	103.2	1600	2700K	15,000	80	4.7	2.6	E26	3	12
L16A19N1530K	LED 15.5W A19 ND 3000K	★	120	15.5	100	103.2	1600	3000K	15,000	80	4.7	2.6	E26	3	12
L16A19N1541K	LED 15.5W A19 ND 4100K	★	120	15.5	100	103.2	1600	4100K	15,000	80	4.7	2.6	E26	3	12
L16A19N1550K	LED 15.5W A19 ND 5000K	★	120	15.5	100	103.2	1600	5000K	15,000	80	4.7	2.6	E26	3	12

15W A19 A-Lamp • Dimmable • 15,000 Hour

L15A21D1527K	LED 15W A19 DIM 2700K	★	120	15	100	106.7	1600	2700K	15,000	80	4.7	2.6	E26	3	12
L15A21D1530K	LED 15W A19 DIM 3000K	★	120	15	100	106.7	1600	3000K	15,000	80	4.7	2.6	E26	3	12
L15A21D1541K	LED 15W A19 DIM 4100K	★	120	15	100	106.7	1600	4100K	15,000	80	4.7	2.6	E26	3	12
L15A21D1550K	LED 15W A19 DIM 5000K	★	120	15	100	106.7	1600	5000K	15,000	80	4.7	2.6	E26	3	12

15W A19 A-Lamp • Dimmable • 25,000 Hour

L15A19D2527K	LED 15W A19 DIM 2700K	★	120	15	100	106.7	1600	2700K	25,000	80	4.7	2.6	E26	5	12
L15A19D2530K	LED 15W A19 DIM 3000K	★	120	15	100	106.7	1600	3000K	25,000	80	4.7	2.6	E26	5	12
L15A19D2541K	LED 15W A19 DIM 4100K	★	120	15	100	106.7	1600	4100K	25,000	80	4.7	2.6	E26	5	12
L15A19D2550K	LED 15W A19 DIM 5000K	★	120	15	100	106.7	1600	5000K	25,000	80	4.7	2.6	E26	5	12

14W A21 A-Lamp GU24 • Dimmable • 25,000 Hour

L14A21GUD2527K	LED 14W A21 DIM 2700K GU24		120	14	100	114.3	1600	2700K	25,000	80	5.2	2.4	GU24	5	12
L14A21GUD2530K	LED 14W A21 DIM 3000K GU24		120	14	100	114.3	1600	3000K	25,000	80	5.2	2.4	GU24	5	12
L14A21GUD2541K	LED 14W A21 DIM 4100K GU24		120	14	100	114.3	1600	4100K	25,000	80	5.2	2.4	GU24	5	12
L14A21GUD2550K	LED 14W A21 DIM 5000K GU24		120	14	100	114.3	1600	5000K	25,000	80	5.2	2.4	GU24	5	12

LED 40/60/100 3-Way Equivalent Options

4/8/16W A21 3-Way A-Lamp • Dimmable • 25,000 Hour

LED16A21D3WAY27K	LED 16W A21 DIM 2700K 3WAY	★	120	4/8/16	40/60/100	120/100/100	480/800/1600	2700K	25,000	80	4.9	2.6	E26	5	12
LED16A21D3WAY30K	LED 16W A21 DIM 3000K 3WAY	★	120	4/8/16	40/60/100	120/100/100	480/800/1600	3000K	25,000	80	4.9	2.6	E26	5	12
LED16A21D3WAY41K	LED 16W A21 DIM 4100K 3WAY	★	120	4/8/16	40/60/100	120/100/100	480/800/1600	4100K	25,000	80	4.9	2.6	E26	5	12
LED16A21D3WAY50K	LED 16W A21 DIM 5000K 3WAY	★	120	4/8/16	40/60/100	120/100/100	480/800/1600	5000K	25,000	80	4.9	2.6	E26	5	12

LED 60W Wet Location Equivalent Options

9.5W A19 Omni-Directional Wet Location A-Lamp • Dimmable • 25,000 Hour

LED10A19DOD27KW	LED 9.5W A19 DIM OMNI 27K WET	★	120	9.5	60	84.2	800	2700K	25,000	80	4.6	2.5	E26	5	12
LED10A19DOD30KW	LED 9.5W A19 DIM OMNI 30K WET	★	120	9.5	60	86.8	825	3000K	25,000	80	4.6	2.5	E26	5	12
LED10A19DOD41KW	LED 9.5W A19 DIM OMNI 41K WET	★	120	9.5	60	89.5	850	4100K	25,000	80	4.6	2.5	E26	5	12
LED10A19DOD50KW	LED 9.5W A19 DIM OMNI 50K WET	★	120	9.5	60	89.5	850	5000K	25,000	80	4.6	2.5	E26	5	12

For the most up-to-date specs, please visit www.tcpi.com

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SHOP DRAWING REVIEW

CONTRACTOR REVIEW

REVIEWED BY – DAN ANDERSON

May 15, 2019

PROJECT – Outlaw Square

SPECIFICATION # - 265600

ITEM/ITEMS – Exterior Lighting Re-Submittal of Type SL

Supplier: Crum Electric

Phone – 605-342-8830

CONRAD'S BIG "C" ELECTRIC	
Reviewed <input checked="" type="checkbox"/>	Rejected <input type="checkbox"/>
	Resubmit <input type="checkbox"/>
Make Corrections Noted <input type="checkbox"/>	
By <u>Dan Anderson</u>	
Date <u>May 15, 2019</u>	

SUBMITTAL REVIEW

- | | |
|--|---|
| <input type="checkbox"/> Reviewed | <input checked="" type="checkbox"/> Reviewed w/ Changes Noted |
| <input type="checkbox"/> Revise and Resubmit | <input type="checkbox"/> Rejected _____ |

SUBMITTAL WAS REVIEWED FOR DESIGN CONFORMITY AND GENERAL CONFORMANCE TO CONTRACT DOCUMENTS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING DIMENSIONS AT JOBSITE FOR TOLERANCE, CLEARANCE, QUANTITIES, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THIS WITH OTHER TRADES AND FULL COMPLIANCE WITH CONTRACT DOCUMENTS.

By: Karli Mattson Date: May 23, 2019

SCULL CONSTRUCTION SERVICES

Date: May 15, 2019

Illumination Systems, Inc
1645 Avenue D
Billings MT 59103
Phone:
Fax:

Job Name
Outlaw Square
ISI-NORTH19-118749
Deadwood SD

Bid Date
Apr 25, 2019

Submittal Date
May 15, 2019

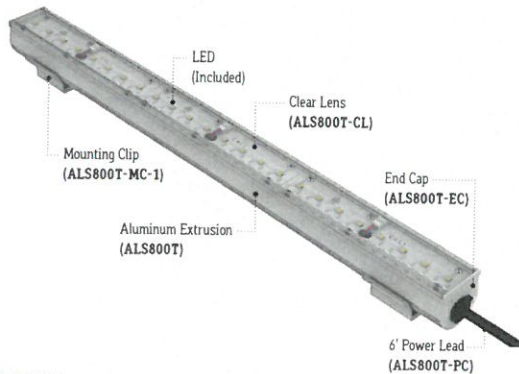
Architect:
Chamberlin Arch
1726 Cole Blvd
Lakewood CO 80401

Job Name:
 Outlaw Square
 Architect: Chamberlin Arch (Lakewood)
Catalog Number:
 ALS800T-CL-BK-LED-3000K-4W-10V-1%-HO-
 EF-WET-IP67-120-8FT ALS800T-MC-4-9-BK
Notes:**Type:****SL**

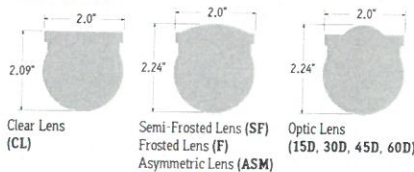
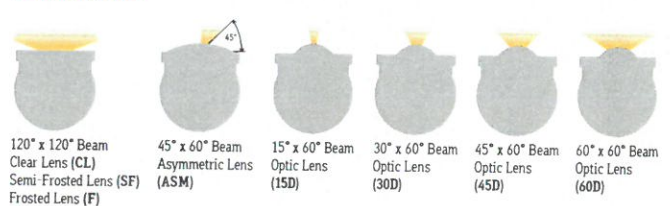
ISI-NORTH19-118749

Page 1 of 2

ALS800T

 INDIRECT
& DIRECT
**FEATURES**

APPLICATIONS	Indirect and Direct Lighting
LAMP TYPE	High, Mid, or Standard Output LEDs (No Mercury)
CRI	>90 (High, Mid, and Standard Output)
LENS	Clear, Frosted, or Semi-Frosted
OPTICS AND ASYMMETRIC	15°, 30°, 45°, 60° and Asymmetric Optics
LENGTH	Built to Order
CONSTRUCTION	Aluminum Extrusion
WEIGHT	0.95 lbs per foot
MOUNTING	Mounting Clips (Not Included)
LISTING	Dry or Wet (IP65 or IP67) Location UL1598, CSA C22.2 #250.0 UL8750, CSA 250 UL2108, CSA C22.2 #9
INSTALLATION	Link to Installation Instructions
ELECTRICAL	
DIMMING	0-10V, Forward Phase, DALI
MAXIMUM RUN (Line Voltage Integral Drivers)	40' (1.5W, 2W, 3W, 4W, 5W, 6W, 8W) 26' (12W)
PRIMARY VOLTAGE	120V or 277V
SECONDARY VOLTAGE	24VDC

PROJECT
 SINGLE
BIN
 +30K
**LENS****END VIEWS****BEAM ANGLES****FEED POINTS**
 Add the following measurement
 to overall length of fixture:
 • 0.15" for DRY EF cord grip
 • 0.55" for DRY SF / BF cord grip
 • 0.80" for WET EF cord grip
 • 1.25" for WET SF / BF cord grip

SERIES	OPTICS	FINISH	CCT LED	WATTS PER FOOT	DIMMING	OUTPUT	FEED POINT	LISTING	LUMINAIRE VOLTAGE	FIXTURE LENGTH
ALS800T										
ALS800T	Clear Lens* ¹ (CL)	Natural	2400K (2.4K)	1.5 Watts (1.5W)	0-10V (10V)	High Output (HO)	End Feed (EF)	Indoor (DRY)	120V Line Voltage* ¹ (120V)	Specify Length
	Semi-Frosted Lens* ¹ (SF)	Silver (NA)	2700K (2.7K)	2 Watts (2W)	0-10V; 100% - 1% (10V-1%)					
	Frosted Lens* ¹ (F)	White (WH)	3000K (3.0K)	3 Watts (3W)	0-10V; 100% - 1% (10V-1%)	Mid Output (MO)	Bottom Feed (BF)	Outdoor IP65 (WET)	277V Line Voltage* ¹ (277V)	8'
	Asymmetric Lens (ASM)	Satin (SA)	3500K (3.5K)	4 Watts (4W)	Forward Phase: 120V Line Voltage (FP)	Standard Output (SO)	Side Feed (SF)	Outdoor IP67 (WET-IP67)	24V-120V Remote Driver* ² (24-120V)	
	15° (15D)	Black (BK)	4000K (4.0K)	5 Watts (5W)	DALI Remote Driver (DALI)				24V-277V Remote Driver* ² (24-277V)	
	30° (30D)	Silver (SR)	4500K (4.5K)	6 Watts (6W)	JA8 0-10V Remote Driver (JA8-10V)					
	45° (45D)		5000K (5.0K)	8 Watts (8W)	Leave Blank for Non-Dimming					
	60° (60D)		5700K (5.7K)	12 Watts (12W)						
		Red (R)								
		Green (G)								
		Blue (B)								

¹ Integral drivers wattage sized based on length of run. Example: 5' run x 3 watts per foot = 15 watts. Driver will be sized to 15 watts maximum. Maximum length for line voltage (Integral Driver) is 320 watts per run. Example: 320 watts ÷ 8 watts per foot = 40 feet max run.

² Remote drivers sized based on wattage per length. Example: 4 feet x 9 watts = 36 watts. Driver will be sized based on 36 watts. Consult factory for additional information.

³ Clear Lens, Semi-Frosted Lens, Frosted Lens (120°)

CALIFORNIA ACCENT LIGHTING, INC.

2820 E. Gretta Lane, Anaheim, CA 92806

ph. 800.921.CALI (2254) | fx. 714.535.7902 | info@calilighting.com | calilighting.com

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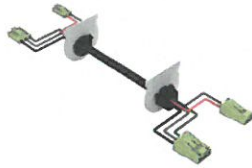
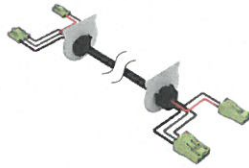
alumLEDs™
 Manufactured in the U.S.A.


Job Name:
 Outlaw Square
 Architect: Chamberlin Arch (Lakewood)
Catalog Number:
 ALS800T-CL-BK-LED-3000K-4W-10V-1%-HO-
 EF-WET-IP67-120-8FT ALS800T-MC-4-9-BK
Notes:**Type:****SL**

ISI-NORTH19-118749

Page 2 of 2

ALS800T

 INDIRECT
& DIRECT
ACCESSORIES (Not Included)
 Standard Jumper Cable
 (ALS800T-JC-6')

 Jumper Cable
 (ALS800T-JC-X)
 (X = Specify Length)
LAMP SPECIFICATIONS

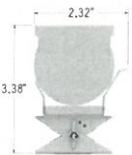
LAMP NUMBER	CORRELATED COLOR TEMPERATURE	LUMENS PER WATT			L70 LED LIFE
		HIGH OUTPUT	MID OUTPUT	STANDARD OUTPUT	
2.4K	2400K Incandescent White	120	95	85	60,000 hrs.
2.7K	2700K Warm White	120	95	85	60,000 hrs.
3.0K	3000K Warm White	120	95	90	60,000 hrs.
3.5K	3500K Neutral White	120	95	90	60,000 hrs.
4.0K	4000K Neutral White	120	95	90	60,000 hrs.
4.5K	4500K Neutral White	120	95	90	60,000 hrs.
5.0K	5000K Cool White	130	99	95	60,000 hrs.
5.7K	5700K Cool White	130	99	95	60,000 hrs.
R	Red (621nm)	70	N/A	N/A	40,000 hrs.
G	Green (525nm)	139	N/A	N/A	40,000 hrs.
B	Blue (470nm)	40	N/A	N/A	40,000 hrs.

Consult factory for cooler white color temperatures.

MOUNTING OPTIONS (Not Included)

Click image to view installation information


 Mounting Clip 1
 (ALS800T-MC-1)

 Mounting Clip 3 (Adjustable)
 (ALS800T-MC-3)

 Mounting Clip 4
 (ALS800T-MC-4-X)
 (X = Specify Length, Max. 2')

PART NUMBER	WEIGHT	SPECIFY FINISH	SPECIFY LENGTH	SPECIFY QUANTITY	UNIT
ALS800T-MC-1	0.046 lbs each		N/A		Each
ALS800T-MC-2	0.064 lbs each		N/A		Each
ALS800T-MC-3	0.130 lbs each		N/A		Each
ALS800T-MC-4-X	Varies by Length				Each
ALS800T-JC-6'	0.181 lbs each	N/A	N/A		Each
ALS800T-JC-X	Varies by Length	N/A			Each

DESIGN GUIDELINES

Individual Fixture (Dry or Wet Location)



Fixture with Jumper Cables (Dry or Wet Location)



Multiple Fixtures (Dry Location)



Multiple Fixtures (Wet Location)


 Detail A
 Jumper Cable
 (ALS800T-JC-X)
 (X = Specify Length)

 Detail B
 Continuous Connection
 (Dry Location)

 Detail C
 Continuous Connection
 (Wet Location)

CALIFORNIA ACCENT LIGHTING, INC.

2820 E. Gretta Lane, Anaheim, CA 92806

ph. 800.921.CALI (2254) | fx. 714.535.7902 | info@calilighting.com | calilighting.com

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 Manufactured in the U.S.A.


SUBMITTAL REVIEW

- ☒ Reviewed ☐ Reviewed w/ Changes Noted
☐ Revise and Resubmit ☐ Rejected_____

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By: Karli Mattson Date: Sept 5, 2019
SCULL CONSTRUCTION SERVICES

- ☒ NO EXCEPTION TAKEN
☐ REVISE AND RESUBMIT
☐ MAKE CORRECTIONS
☐ REJECTED



**Ferber
Engineering
Company, Inc.**

Review is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the contract documents. Any omissions are the responsibility of the Contractor. Contractor is responsible for the dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his or her work with that of all other trades; the satisfactory performance of his or her work; and job site safety.

By: _____ JRV Date: 9/5/19

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Radius

Wet-Set

ADA COMPLIANT • DURABLE • REPLACEABLE

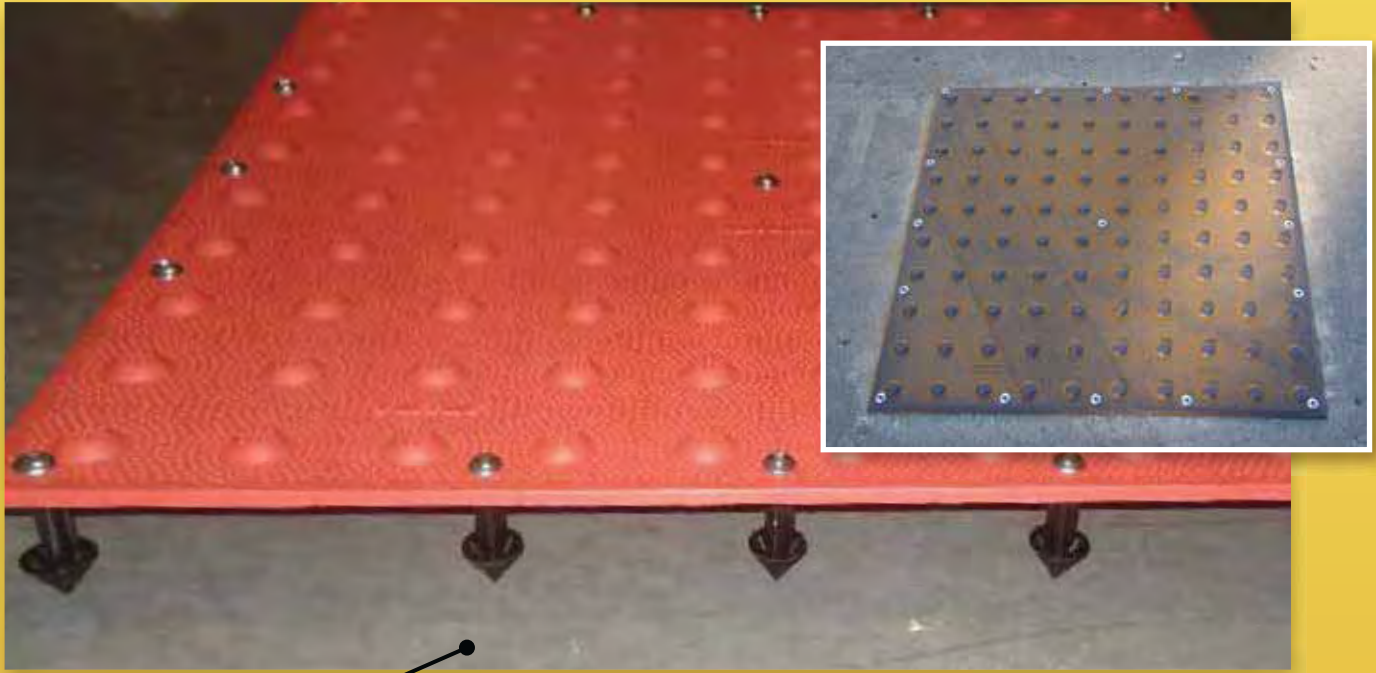
TufTile's 140,000 sq. ft. manufacturing and distribution facility is located in Lake Zurich, IL.



www.TufTile.com

CAST IRON TILES

WET-SET



Tiles shipped with
anchors installed

Wet-Set Tiles

Great for use in areas where heavy tile abuse is possible including areas subject to snowplowing.

Durable rust resistant finish on all tile color options.

Durable solid cast iron construction complies with "Buy American" domestic content requirements.

ADA compliant wet & dry slip-resistant surface.

Cast iron wet-set tiles are for new construction.

Unique "umbrella" style anchors lock tile securely into concrete without displacing aggregate.

Uniform tile underside eliminates trapping air during installation.

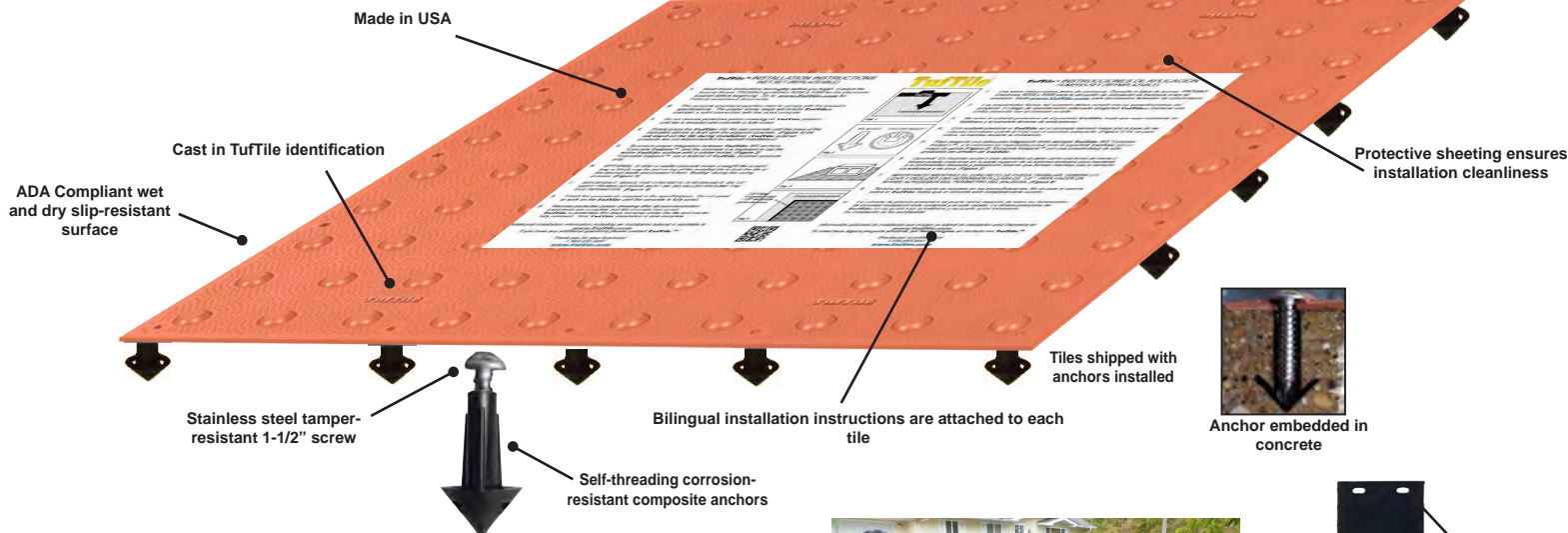
TUFTILE® TACTILE IS ADAAG / PROWAG / CA TITLE 24 COMPLIANT

PAT. NO. US D691,743 S

CAST IRON TILES

Durable Cast Iron complies with "Buy America" domestic content requirement

WET-SET (REUSABLE)

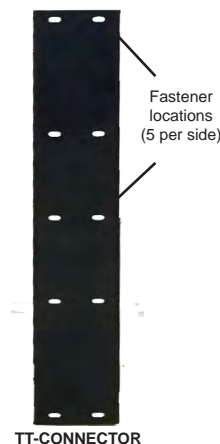


Powder coat color includes zinc-rich epoxy primer base and durable UV resistant finish.

Cast Iron Sizes	Cast Iron Weight
24" x 12"	19 lbs
24" x 24"	37 lbs
24" x 30"	46 lbs



Simplify Wet-Set installation by connecting panels.

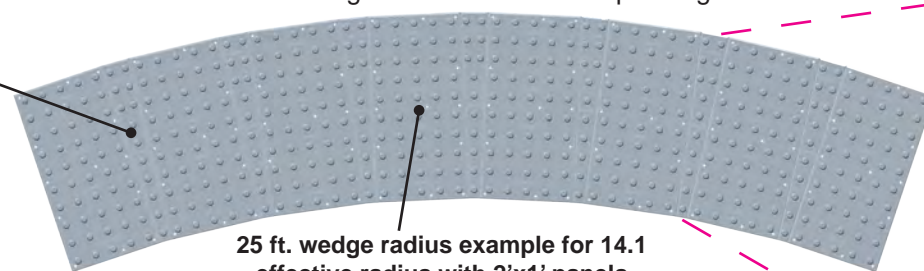


TT-CONNECTOR

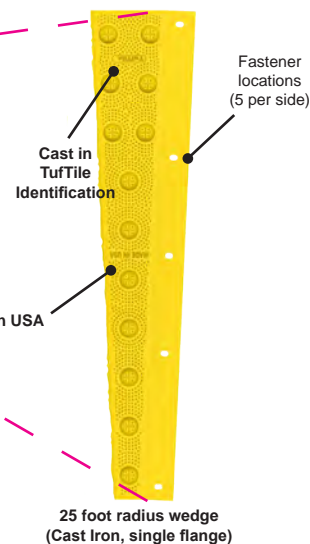
CAST IRON RADIUS TILES

Radius Wedge colors match corresponding Cast Iron tiles

Wedges are sized per the radius of the arc.



25 ft. wedge radius example for 14.1 effective radius with 2'x1' panels



25 foot radius wedge (Cast Iron, single flange)

EFFECTIVE RADIUS SIZES				
Wedge	Weight	Radius	with 2' x 2' Panels	with 2' x 1' Panels
15R	11.8 lbs	15 Foot	15 Foot Radius	8.8 Foot Radius
20R	10.5 lbs	20 Foot	20 Foot Radius	11.1 Foot Radius
25R	9.3 lbs	25 Foot	25 Foot Radius	14.1 Foot Radius
30R	8.5 lbs	30 Foot	30 Foot Radius	16.8 Foot Radius

TufTile® ADA Tiles have a 5-Year Limited Warranty – see website or contact customer service.

TUFTILE® TACTILE IS ADAAG / PROWAG / CA TITLE 24 COMPLIANT

PAT. NO. US D691,743 S

Cast Iron Packaging Design



Packaged 26 per skid. With anchor supports between each panel.



Panels come with bi-lingual installation instructions and protective sheeting on each tile.



Corner blocking protects the outside edges from damage during shipping.



Skid and panels are wrapped in protective film with label affixed to the side.

TufTile®

ADA TACTILE (CAST IRON) PRODUCTS

WET-SET

☐ 24" x 12"

☐ 24" x 24"

☒ 24" x 30"

☐ Brick Red

☐ Colonial Red

☐ Yellow

☐ Black

☒ Patina (natural)

☐ Dark Gray

Anchors Attached

Cast Iron Panels packaged:

Panel Size	24"x12"	24"x24"	24"x30"
Units/Skid	52	26	26
Weight	1023	1023	1270
Dimensions	26"x49"	26"x49"	32"x49"

TufTile Radius Calculator

☒ Feet/Inches
☐ Metric

☒ Polymer ☐ Cast Iron

Radius Length feet

☒ Have Radius ☐ Have Height

Chord Length feet

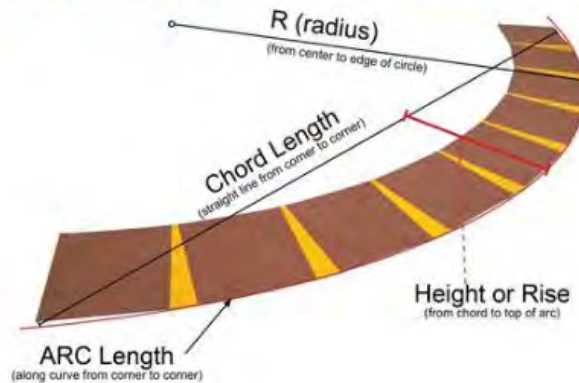
☒ Have Chord Length ☐ Have Arc Length

Arc Length Segment Length (tile + wedge) Arc Overrun Variance

Recommended Tile Size
 Recommended Wedge Size

Quantity
 Quantity

Calculate



Enter values in the 2 fields provided (Radius Length and Chord Length) then click the 'Calculate' button to create the estimate for your Radius installation. You can enter the Height or Rise in lieu of the Radius Length. Arc Length can be used as an alternative to the Chord as well. The recommended Tile Size, Wedge Size and their respective Quantities will display in the space provided.

The Metric option will expect the lengths to be entered in Meters.

Polymer vs Cast Iron will make use of the 24"x36" tiles or 24"x30" respectively as required.

The values 'arc length', 'segment length', 'arc overrun' and 'variance' are informational.

Arc Length is calculated when the chord length is given. Segment Length is known by adding the top edge lengths of 1 selected Tile and Wedge. Arc overrun is the remainder when the Arc Length is different than the sum of the Tiles and Wedges. Variance occurs when the Radius calculated is different than the Radius made from the suggested components. The variance amount is the distance between those two values.

The Size change warning line will display when the program calculates an 'Arc overrun' that is negative. In the case when a smaller tile will leave less extra radius it recommends that instead of just adding another equal width tile. So if the job calls for 7 24"x24" tiles and 7 wedges and it leaves less than 14 inches of remaining radius, it tells the user to order 1 24"x12" tile instead of another 24"x24". The same goes for 30" and 36" wide tiles where it can substitute a 24"x12" or 24"x24" as required. This is only a suggested solution.

Our Radius calculator is provided as a reference to help you estimate the amount of material you need for your project. This calculator provides an ESTIMATE.

*Coverage is affected by a number of factors. ** In order for us to ensure that you have adequate material for your job, please round up to the nearest foot.*



DETECTABLE WARNING PRODUCTS

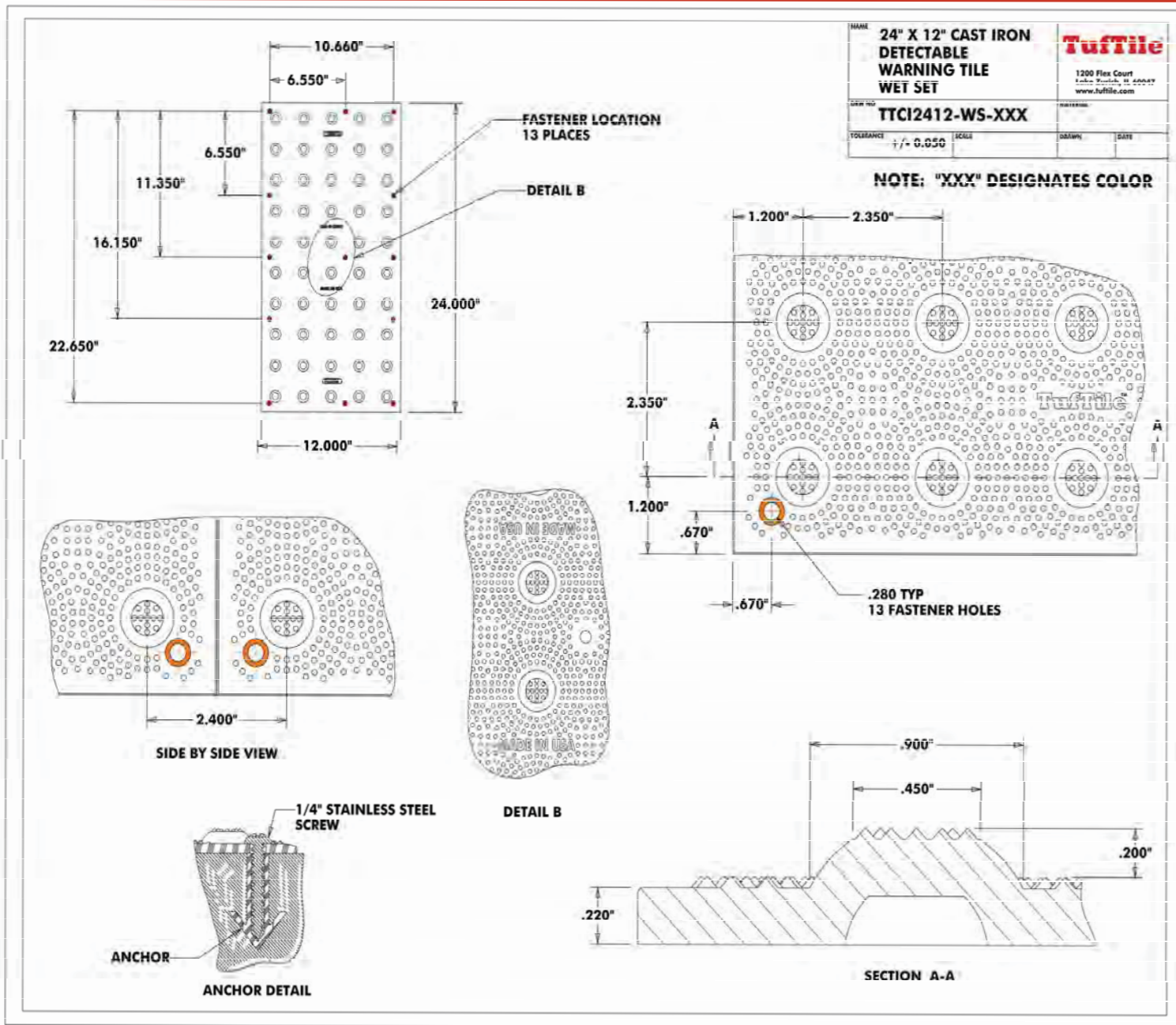
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24" X 12" WET SET

(REUSEABLE)

CAST IRON DETECTABLE WARNING TILE 2.350 DOME SPACING

TEL 888-960-8897 FAX 847-550-8004 www.tuftile.com

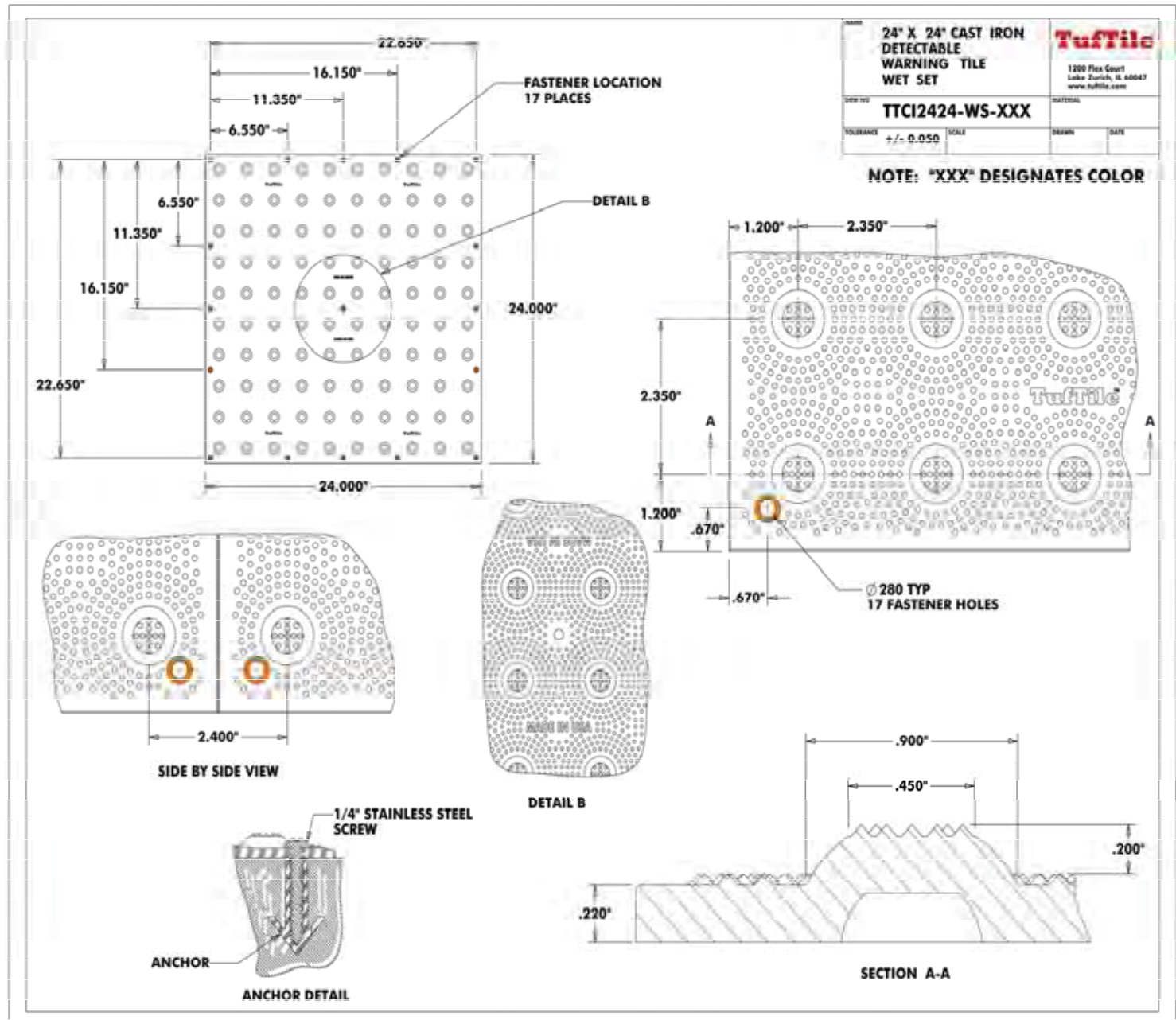


24" X 24" WET SET

(REUSEABLE)

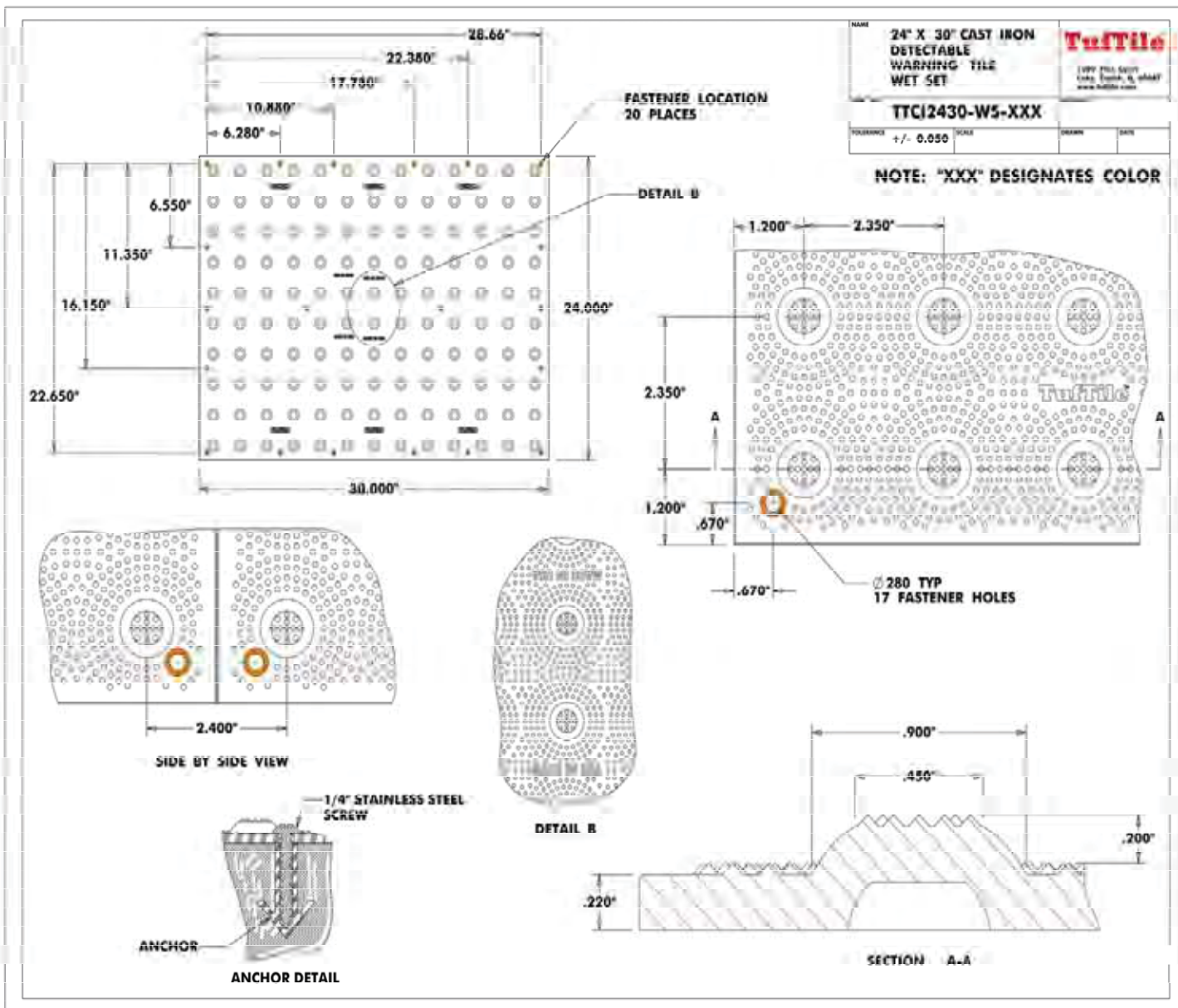
CAST IRON DETECTABLE WARNING TILE 2.350 DOME SPACING

TEL 888-960-8897 FAX 847-550-8004 www.tuftile.com

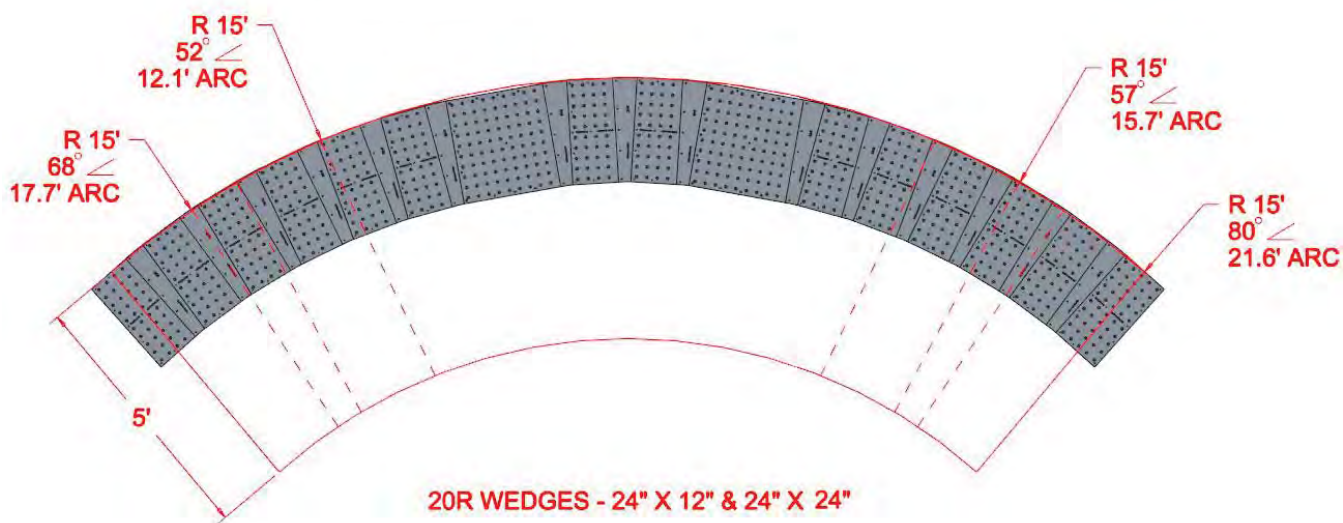
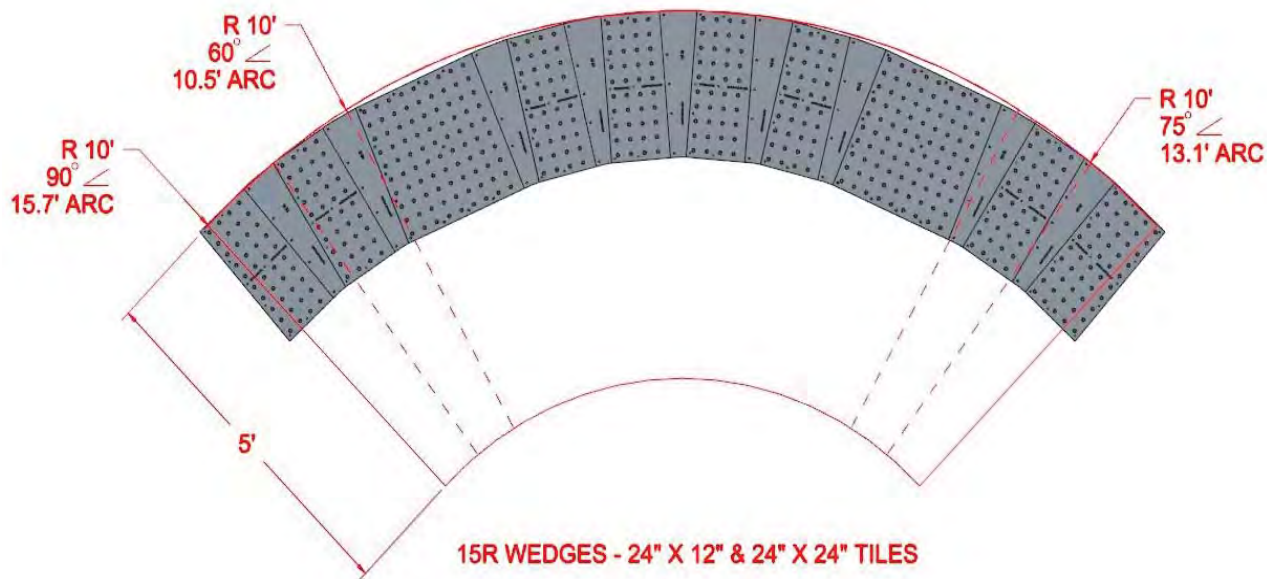


(REUSEABLE)

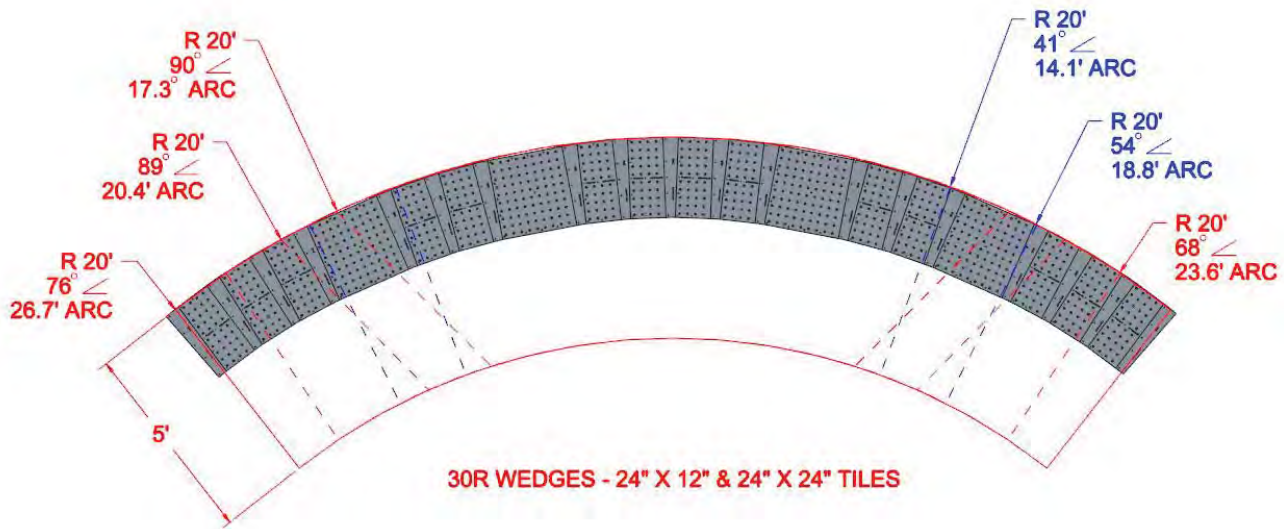
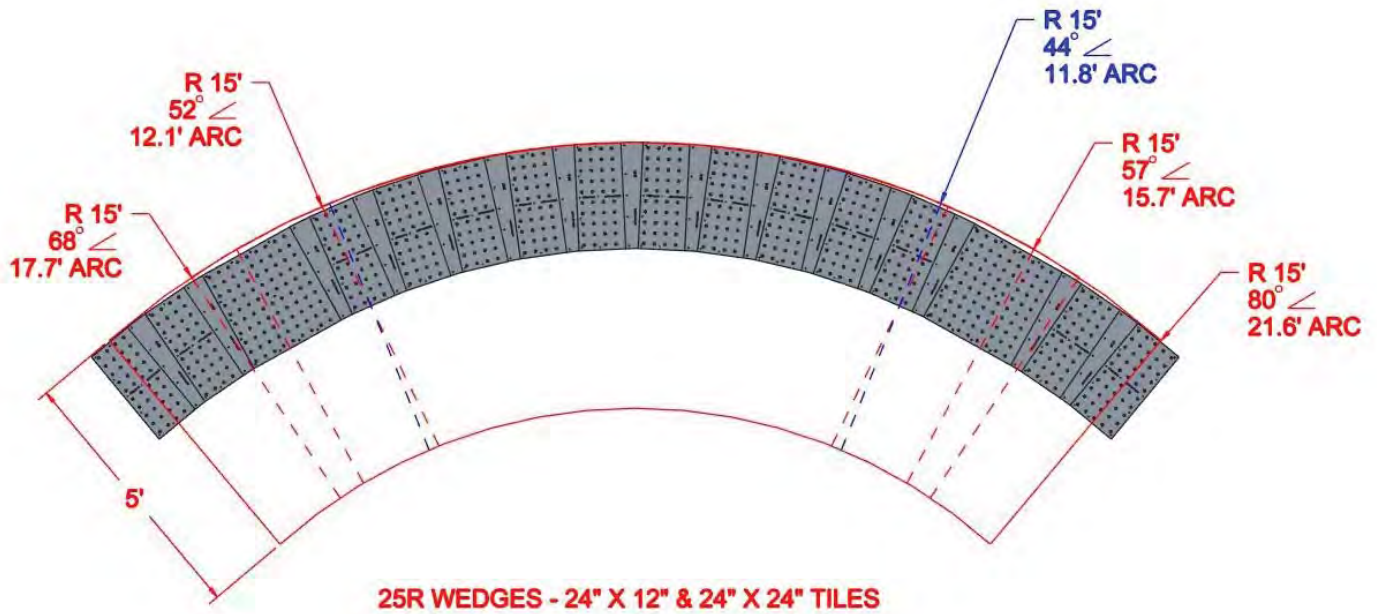
TEL 888-960-8897 FAX 847-550-8004 www.tuftile.com



Sample Radius Drawings with 2' x 2' tiles and 2' x 1' tiles



Sample Radius Drawings with 2' x 2' tiles and 2' x 1' tiles



15' WET SET

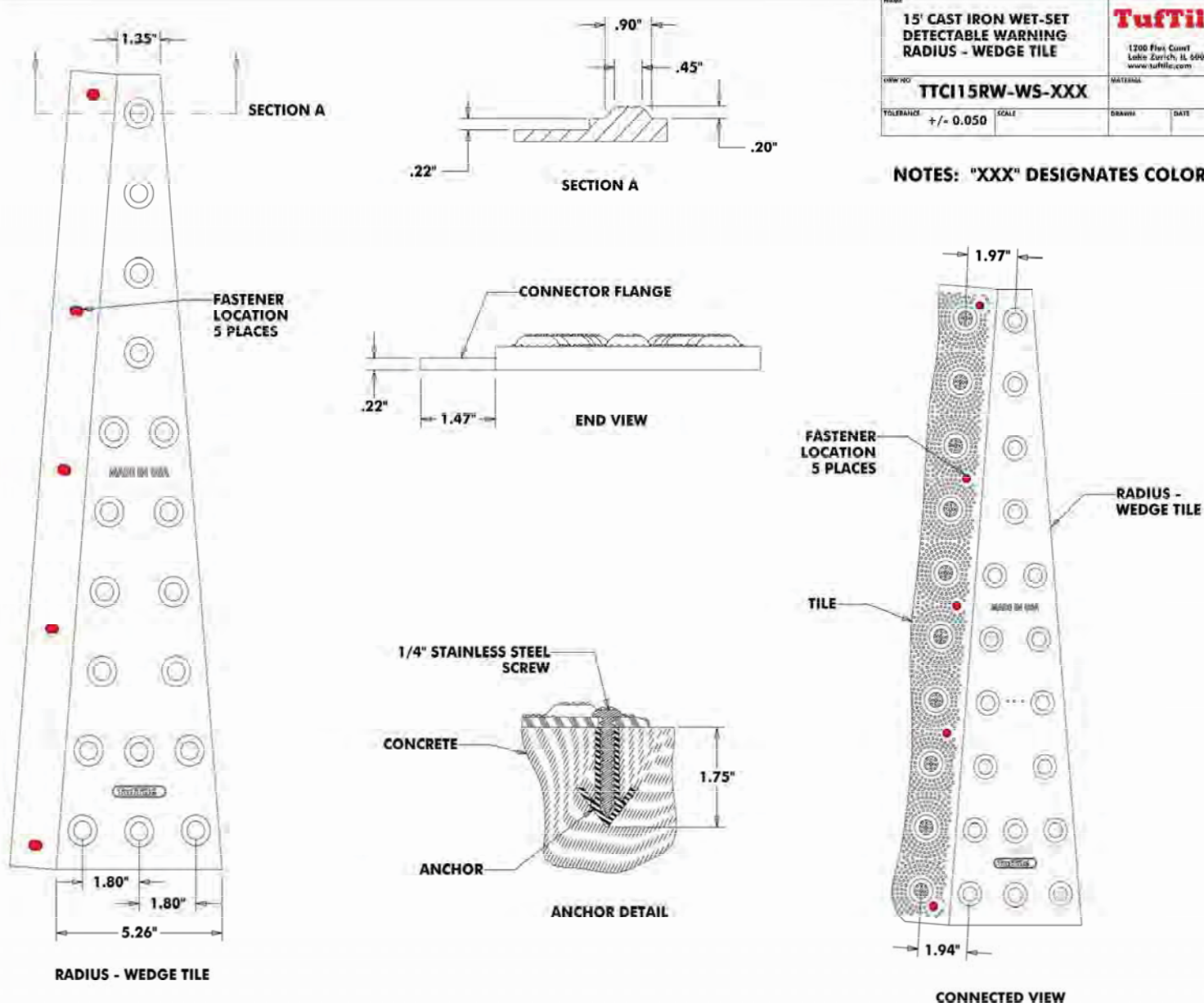
(REUSEABLE)

CAST IRON DETECTABLE WARNING RADIUS—WEDGE TILE

TEL 888-960-8897

FAX 847-550-8004

www.tuftile.com



20' WET SET

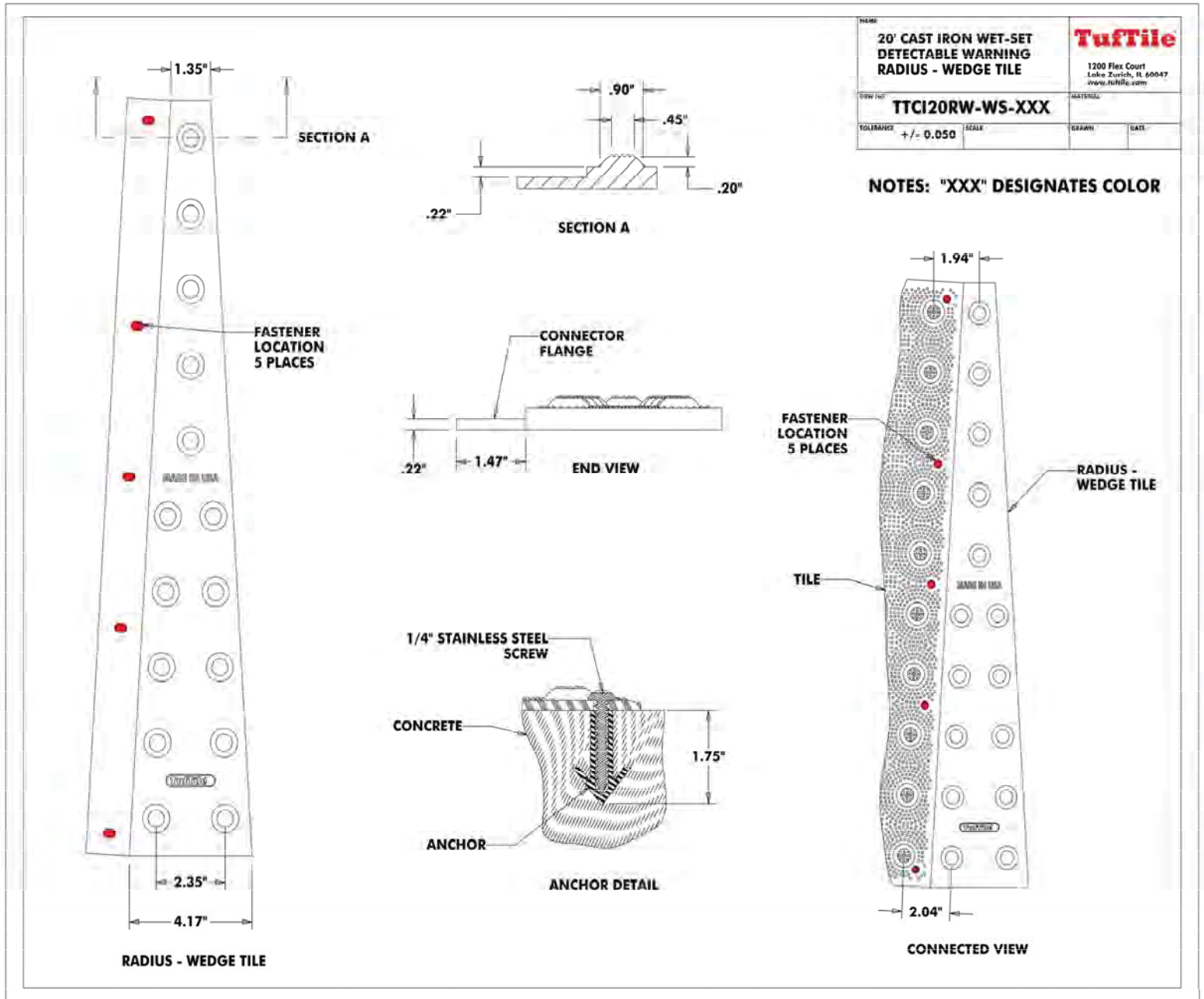
(REUSEABLE)

CAST IRON DETECTABLE WARNING RADIUS—WEDGE TILE

TEL 888-960-8897

FAX 847-550-8004

www.tuftile.com



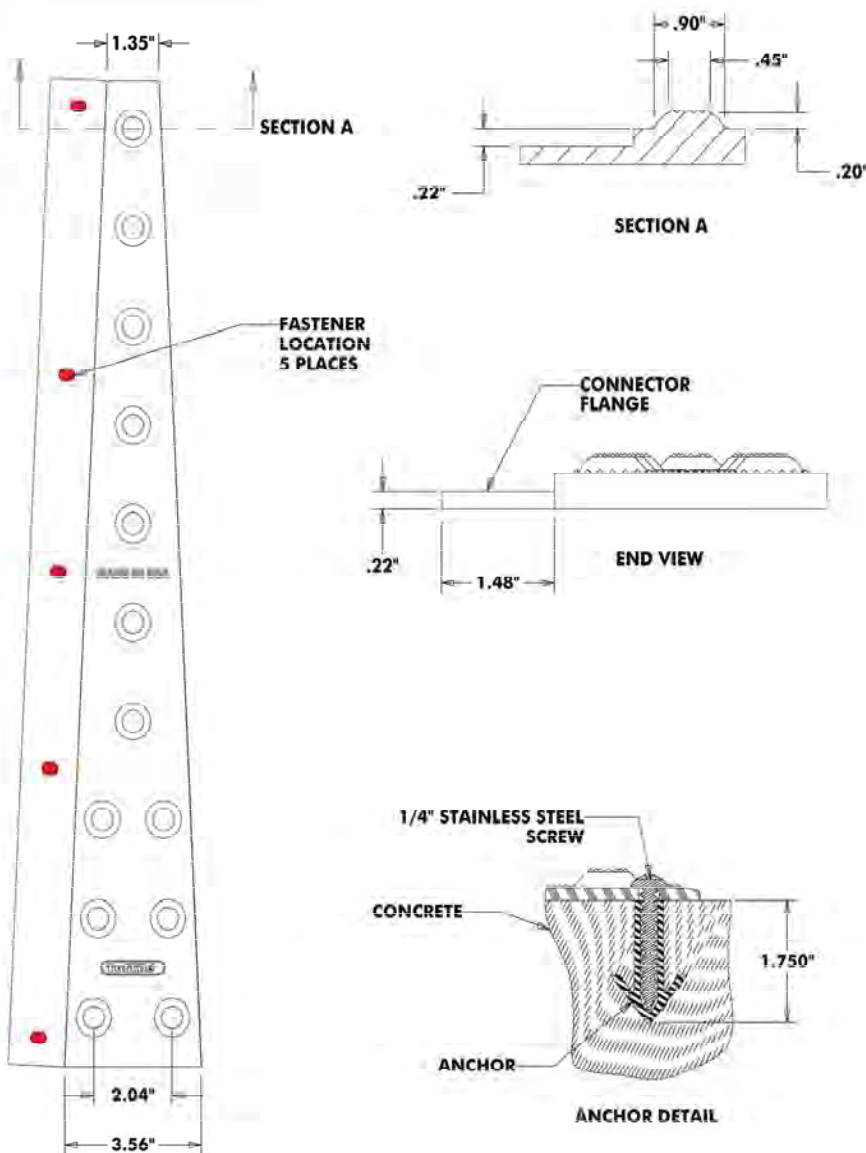
25' WET SET

(REUSEABLE)

CAST IRON DETECTABLE WARNING RADIUS—WEDGE TILE

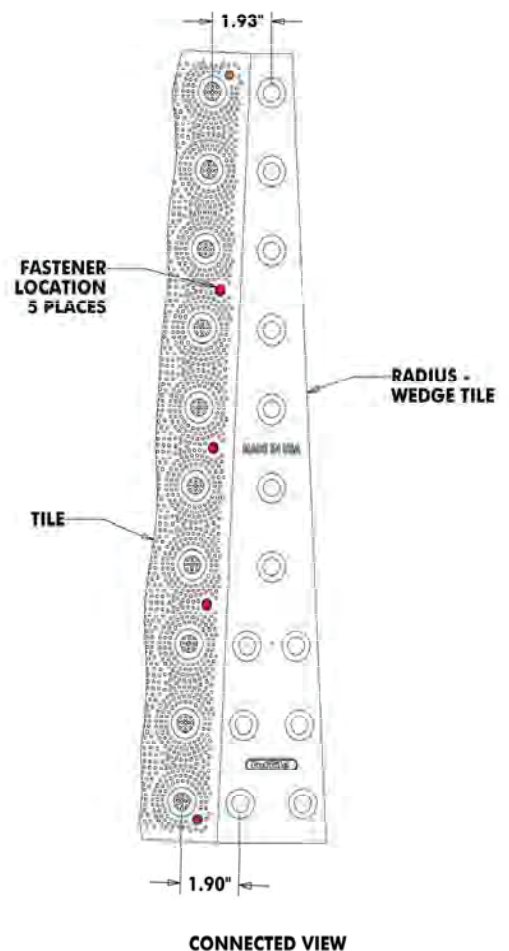
TEL 888-960-8897 FAX 847-550-8004

www.tuftile.com



NAME 25' CAST IRON WET-SET DETECTABLE WARNING RADIUS - WEDGE TILE		TufTile 1200 Flex Court Lake Zurich, IL 60047 www.tuftile.com	
DRAW TYP TTCI25RW-WS-XXX		MATERIAL	
TOLERANCE +/- 0.050	SCALE	DRAWN	DATE

NOTES: "XXX" DESIGNATES COLOR



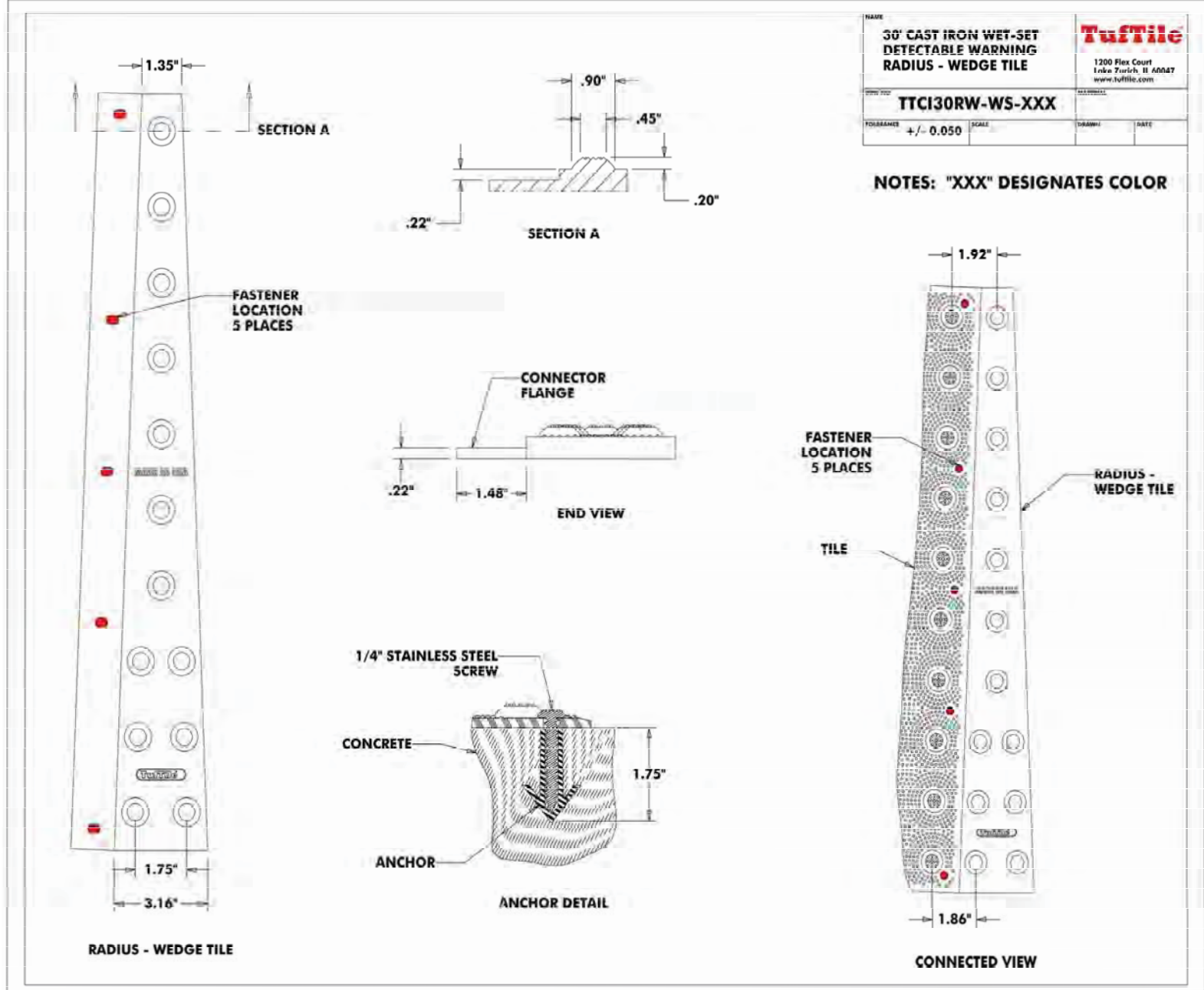
30' WET SET

(REUSEABLE)

CAST IRON DETECTABLE WARNING RADIUS—WEDGE TILE

TEL 888-960-8897 FAX 847-550-8004

www.tuftile.com





DETECTABLE WARNING PRODUCTS

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TufTile® INSTALLATION INSTRUCTIONS WET-SET (REPLACEABLE)

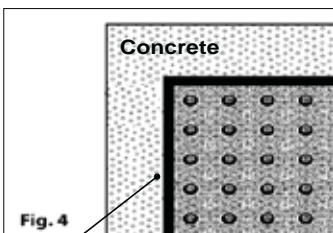
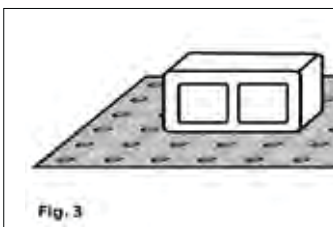
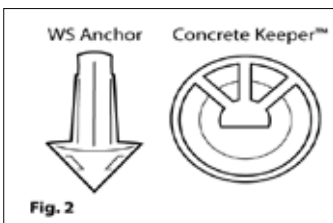
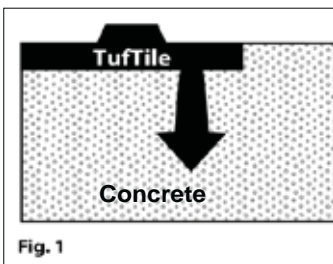
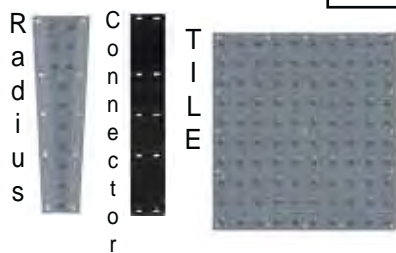


Fig. 4
1/8" Deep
Troweled Edge

1. Read these instructions thoroughly before you begin. Consult the Access-Board, PROWAG guidelines R208 & R305 for tile placement location before beginning. Go to www.TufTile.com for Federal compliance documents.
2. The concrete physical properties need to comply with the project's specifications. The proper slump range will ensure **TufTiles** maintain a solid connection with the cured concrete.
3. For Radius or Connected Tiles, see below. For normal tile install, do not remove protective plastic covering from **TufTile** until it's installed and concrete is fully cured.
4. Slowly press the **TufTile** into the wet concrete until the base of the truncated domes is flush with the concrete. **(Figure 1) Do not stand on the tile during installation.** (**TufTile** polymer products are not recommended for asphalt installations)
5. To ensure proper integration between **TufTile** WS anchors, *Concrete Keepers™, and the concrete it is important to tap the entire **TufTile** surface with a rubber mallet. **(Figure 2)** *Concrete Keepers™ are a feature of **TufTile** polymer products only.
6. OPTIONAL: In drier or wetter concrete mixes a weight like a sand bag or block may be laid on top of the installed tile to hold the tile at the desired depth and prevent it from "floating" during the curing process. **(Figure 3)**
7. IMPORTANT! WHILE THE CONCRETE IS WORKABLE, AN 1/8" DEEP TROWELED EDGE MUST BE INSTALLED AROUND THE TILE PERIMETER. **(Fig. 4)**
8. Finish the concrete as required in the specifications. Do not stand or walk on the **TufTile** until the concrete is fully cured.
9. Remove protective plastic sheeting after all post-installation treatments are complete and the concrete has cured. **TufTile's** protective film does not wrap under the tile and can be fully removed. Your **TufTile** installation is now complete.



Connected Radius Example



Radius or Connected **TufTile**® Installation

Instead of Step 3 above, do the following:

3. Peel back the protective coating on the tile edges.
- 3a. Remove anchors from edges that join.
- 3b. Insert Radius or Connector part between the tiles.
- 3c. Re-install anchors through tile and Radius or Connector.
- 3d. Locate the complete surface in position over wet concrete

Resume installation at Step 4 above

Additional installation information including an installation tutorial is available at www.TufTile.com

If you have any additional questions please contact **TufTile**®

Thank you for your business!
1-888-960-8897

www.TufTile.com

TufTile® INSTRUCCIONES DE APLICACIÓN HÚMEDO-SET (REEMPLAZABLE)

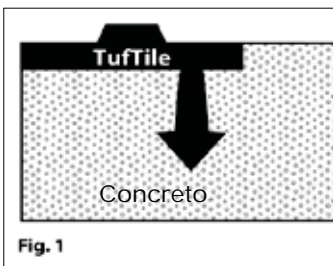


Fig. 1

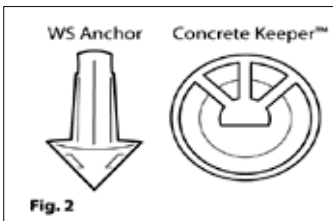


Fig. 2

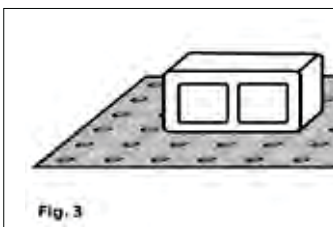


Fig. 3

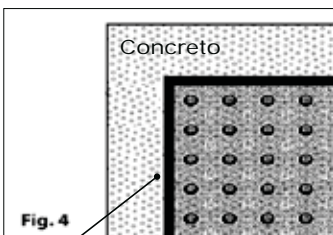
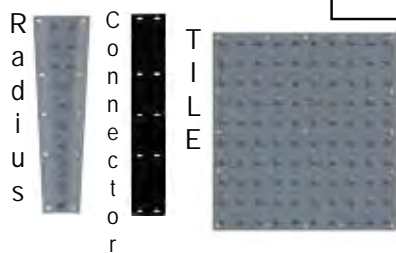


Fig. 4

1/8" del borde
profundo llana

1. Lea estas instrucciones antes de comenzar. Consulte la tabla de acceso, PROWAG directrices R208 y R305 para la ubicación de colocación de baldosas antes de empezar. Visita www.TufTile.com para documentos federales de cumplimiento.
2. Las propiedades físicas del concreto deben cumplir con las especificaciones del proyecto. El rango de asentamiento adecuado asegurará **TufTiles** mantener una sólida conexión con el concreto curado.
3. Para radio o azulejos conectados, ver abajo. Para baldosas de instalación normal, no retire la cubierta plástica protectora de **TufTile** hasta que esté instalado y el hormigón esté completamente curado.
4. Con cuidado presione el **TufTile** en el concreto húmedo hasta que la base de las cúpulas truncadas quede al nivel con el concreto adyacente. (Figura 1) No se pare sobre la baldosa durante la instalación.
5. Para asegurar una adecuada integración entre anclajes **TufTile** WS,*Concrete Keepers™, y lo concreto es importante pulsar toda la superficie **TufTile** con un mazo de goma. (Figura 2) *Concrete Keepers™ son una característica de sólo productos del almidón de **TufTile**.
6. Opcional: En mezclas secas o más húmedas un peso como una bolsa de arena o blo que puede colocarse en la parte superior de la baldosa instalada para mantener a la profundidad deseada y prevención flotante que forman mientras que el cemento se endurece y se cura. (Figura 3)
7. **IMPORTANTE! MIENTRAS EL CONCRETO SE PUEDA TRABAJAR, DEBERA UTILIZAR Y DESLIZAR UNA HERRAMIENTA LLANA DE 1/8" PARA HACER UN BORDE ALREDEDOR DEL PERÍMETRO DEL BALDOSA.** (Figura 4)
8. Termine el concreto como se requiere en las especificaciones. No se pare ni camine sobre el **TufTile** hasta que el concreto esté completamente curado.
9. La cubierta de plástico protectora se puede retirar después de todos los tratamientos de concreto instalación este completa y el este curado. La lámina protectora del **TufTile** no se ajusta bajo la baldosas y se puede quitar totalmente. Su instalación se ha completado.



Ejemplo radio Conectado



Instalación de radio o conectados **TufTile®**

En lugar de paso 3, haga lo siguiente:

3. Remueva la capa protectora en los bordes de los azulejos.
- 3a. Retire los anclajes de los bordes que se unen.
- 3b. Asemble el conector o al radio entre los TufTiles.
- 3c. Volver a instalar los anclajes a través de baldosas y Radio o Conector.
- 3d. Localice la superficie montaje completa en posición sobre el hormigón húmedo.

Reanudar la instalación en el paso 4 anterior

Información adicional de instalación que incluye un tutorial de instalación está disponible en

www.TufTile.com

Si usted tiene alguna pregunta adicional, por favor, póngase en contacto con **TufTile®**.

Gracias por su preferencia!

1-888-960-8897

www.TufTile.com

MATERIAL SAFETY DATA SHEET (MSDS)

SECTION I: MATERIAL IDENTIFICATION

CHEMICAL FAMILY:

MANUFACTURER:

CONTACT INFORMATION:

Gray Iron

Iron (Fe)

Thyssen Krupp-Waupaca, Inc. Waupaca, WI 54981

TufTile™ 1200 Flex Court, Lake Zurich, IL 60047

Ph: (888) 960-8897

SECTION II: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components:

None in solid form

Composition:

Carbon (C), Chromium (Cr), Copper (Cu), Iron (Fe), Nickel (Ni),
Silicon (Si), Tin (Sn)

Melting Temperature

2350 Degrees Fahrenheit

SECTION III: PHYSICAL CHARACTERISTICS

Emergency Overview:

This material is NOT HAZARDOUS by OSHA Hazard

Appearance and Odor:

Solid Mass, No Odor

Specific Gravity:

7.86

Freezing Point:

N/A

Solubility in Water:

Insoluble

% Volatile by Volume

N/A

Boiling Point:

5000F

pH

N/A

SECTION IV: FIRE AND EXPLOSION INFORMATION

Flammability:

Not Flammable

Means of Extinction:

N/A

Special Procedures:

None

Explosion Data:

None Known

Sensitivity of Mechanical impact:

None

Hazardous Combustion:

None Known

Auto ignition Temp:

N/A

Sensitivity to Static:

N/A

SECTION V: HEALTH HAZARD DATA

Permissible Exposure:

N/A for product (See Section II above)

SECTION VI: REACTIVITY DATA

Chemical Stability:

Yes

Reactivity:

N/A

SECTION VII: SPILL OR LEAK PROCEDURES

Spill:

None (Solid Mass Product)

Waste Disposal:

Recover or Recycle if possible

SECTION VIII: PROTECTIVE EQUIPMENT TO BE USED:

Protective Gloves

Wear resistant gloves

Eye Protection:

Wear safety glasses with side shields

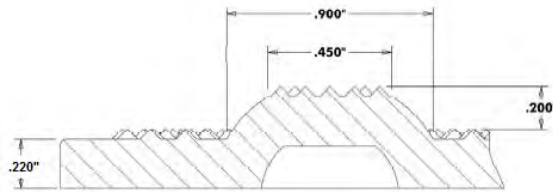
SECTION IX: LEGAL DISCLAIMER

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.™

PHYSICAL CHARACTERISTICS – CAST IRON

DOME GEOMETRY

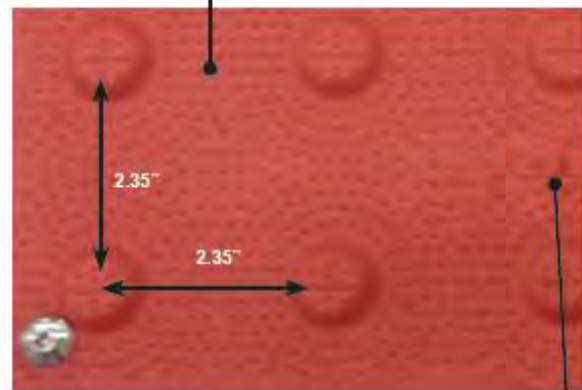
ADA (R305.1.1) specifies truncated domes shall have a base diameter of 0.9" minimum, a top diameter of 50% of the base diameter minimum, and a height of 0.2".



DOME SPACING

ADA (R305.1.2) specifies truncated domes shall have a center-center of 1.6" to 2.4"

In-Line truncated domes comply with all ADA Specifications



ADA Compliant wet and dry slip-resistant surfaces

Manufacturer identification

CAST IRON WET-SET

Material – Gray Iron

ASTM C 1028	Slip Resistance	Dry-.948 Wet-1.099
ASTM A 48	Tensile Strength	35,900 psi
ASTM C 501-84	Abrasion Resistance	88 (lower number = better wear properties)
ASTM D 695	Compressive Strength	81,700 psi
NCHRP Procedure T4-33	Impact Resistance	No substantial damage

Waupaca Foundry

PLANT 23 LAB ANALYSIS REPORT

REPORT
DATE

CUSTOMER:

TUFTILE INC., 1200 Flex Ct., Lake Zurich, IL 60047

7/16/2013

PART NUMBER:

MATERIAL SPECIFICATION:

HB SPEC.

2X2 TILE

GRAY CAST IRON

101/302

REV. MODEL

REV.

CAST DATE

PART NAME:

LAB I.D.

ADA TILE

2312

7/11/2013

REASON FOR REPORT:

SAMPLE - NEW TOOLING: PATTERN #1, CAVITY 1

CHEMISTRY:

C.E.	C	Si	Mn	P	S	Ni	Mo	Cr	Cu
4.16	3.45	2.14	0.63	0.029	0.076	0.08	0.03	0.18	0.20
Al	Ti	Sn	Mg	V	Sb	Pb	Ce	Zn	
0.003	0.011	0.018	0.000	0.010	0.003	0.001	0.000	0.001	

MECHANICAL PROPERTIES:

RESULTS FROM...	TENSILE STRENGTH			BRINELL HARDNESS	
	DIA. (")	PSI	MPA	TEST CONDITIONS	HBW
ASTM A48 A-BAR	0.498	35,900	248	HBW 10/3000 12s	228
CASTING: BRINELL ONLY				HBW 10/3000 4s	229

COMMENTS:

MEETS CUSTOMER MATERIAL SPECIFICATION

ACTION:

APPROVED FOR PRODUCTION

SUBMITTED BY:

KEVIN M. KUEHL

C:\Users\robert\AppData\Local\Temp\104534\12x3_TILE Return 1 Sample 2013.7.11\1x1x1\Bancr

Wauwata Foundry

1955 Brunner Drive, P.O. Box 249

Wautoma, WI 54981

Telephone: 715-258-6611 Fax: 715-258-9200



GAYNES LABS, INCORPORATED

9708 Industrial Drive • Bridgeview, Illinois 60455

Member of "American Council of Independent Laboratories"

Phone: 708-233-6655
Fax: 708-233-6985

Email: gayneslabs@aol.com
Website: www.gaynestesting.com

August 14, 2013

TufTile Inc.
1200 Flex Court
Lake Zurich, IL 60047

Attention: Mr. Ted Meyers
Regarding: Physical Testing of Cast Iron Tiles
Gaynes Job No. 13505-1 TufTile P.O. 11552

Dear Mr. Meyers

Please find below, the procedures and results of the tests that were conducted on a cast iron tile submitted and identified by TufTile, Inc.

TEST PROCEDURE:

ASTM C1028 Slip Resistance (static coefficient of friction)

Testing was not conducted in strict accordance with ASTM C1028 procedures. Typically, the tiles to be tested are a smooth hard surface. The material submitted has a symmetrical pattern of domes covering the surface. The domes are spaced 2" apart (o.c.) and are 0.65" in diameter at the flat top and are raised 0.2" above the surface of the tile. The entire surface including the domes are covered with pointed nubs, approximately 0.039" high. There are 13 nubs on each dome. See Photo No. 1 for a Close-up of the domes and nubs.

TufTile, Inc. supplied the material to be pulled across the surface of the tile. That is: medium strength neoprene, plain black rubber (60A durometer), 3/32" thick procured from McMaster-Carr supply company. The neoprene was used for testing as received (no conditioning or pre-treatment). A 6" x 6" piece of neoprene was then attached to a smooth flat hard surfaced pulling plate

The tile to be tested was secured in a horizontal position. The pulling plate was placed on top of the tile so that the neoprene covered 9 domes. A 50 lb. weight was placed on top of the pulling plate. An electronic force-measuring instrument was attached to the pulling plate. The plate was manually pulled in a horizontal plane until the plate began to move across the tile surface. The initial pulling force was recorded in each of four pulls (N, S, E & W). The average pulling force was divided by the total mass acting on the neoprene to determine the static coefficient of friction. The procedure was conducted with the tile and neoprene dry and wet with tap water. See Photo No. 2 for an overview of the test setup.

TEST RESULTS:

Dry Static Coefficient of Friction: 0.948

Wet Static Coefficient of Friction: 1.099

GAYNES LABS, INC.



Photo No. 1 – Close-up of Domes and Pointed Nubs



Photo No. 2 – Overview of the Test Setup

GAYNES LABS, INC.

GENERAL STATEMENT COVERING THIS REPORT:

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Gaynes Labs, Incorporated assumes no responsibility for the result of the observance or non-observance by TufTile, Inc. of the product standard contained in this report or upon the relations between TufTile, Inc. and any party or parties arising out of the sale or use of the product or otherwise.

TufTile, Inc. shall indemnify and hold harmless Gaynes Labs, Incorporated its employees and agents from any and all claims, demands, actions, and costs that may arise out of:

- (a) Any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to Gaynes Labs, Incorporated by TufTile, Inc. at the time the item was submitted for testing;
- (b) Differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested;
- (c) Any use of the tested item, whether by TufTile, Inc. or a third party, following its return to TufTile, Inc. from Gaynes Labs, Incorporated.

Please contact me if you have any questions regarding this test program.

Report Prepared By:



Andy Boersema

NORTHWEST LABORATORIES *of Seattle, Incorporated*

ESTABLISHED 1896

Technical Services for: Industry, Commerce, Legal Profession & Insurance Industry

241 South Holden Street • Seattle, WA 98108-4359 • Phone: (206) 763-6252 • Fax: (206) 763-3949 www.nwlabs1896.com

Report To: Tuf-Tite, Inc.
Attention: Ted Meyers

Date: October 10, 2012

Report On: Poly Anchors

Lab No.: E86667

IDENTIFICATION: Three (3) Umbrella Anchors
Mfg: Tuf-Tite, Inc.

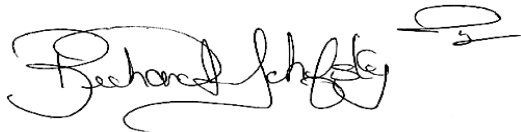
TEST PROCEDURE: Determine maximum pull-out strength of anchor screw in shank by means of supporting top of anchor and apply vertical pulling force on screw load was applied using a Universal Test Machine (UTM) certified accuracy +/- 1%.

TEST RESULTS:

<u>Sample No.</u>	<u>Ultimate Load (lbs.)</u>	<u>Failure Mode</u>
1	314.3	Umbrella pulled off shank
2	324.2	Shank deformed around umbrella
3	310.3	Umbrella pulled off shank
Average	316.2	
Std. Dev.	5.75	

This report applies only to the actual samples tested. Northwest Laboratories does not certify, warrant, or guarantee any products manufactured by others. Samples discarded within **thirty (30) days** unless otherwise requested in writing by you.

NORTHWEST LABORATORIES, INC.



Richard J. Schefsky II
Technical Manager

nbe

www.nwlabs1896.com
rich2@nwlabs1896.com



GAYNES LABS, INCORPORATED

9708 Industrial Drive • Bridgeview, Illinois 60455

Member of "American Council of Independent Laboratories"

Phone: 708-233-6655
Fax: 708-233-6985

Email: gayneslabs@aol.com
Website: www.gaynestesting.com

October 15, 2014

TufTile Inc.
1200 Flex Court
Lake Zurich, IL. 60047

Attention: Mr. Ted Meyers
Regarding: Taber Abrasion Testing of Cast Iron Tile

Dear Mr. Meyers,

Please find below the procedures and results of the test that was conducted on Cast Iron ADA Tactile Warning Tile submitted and identified by TufTile Inc.

TEST PROCEDURE:

Testing was conducted in accordance with ASTM C501-84 (2009) Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser. Testing was begun by weighing the test specimen to the nearest 0.01 gram. The sample was secured to the spindle of the Taber abrasion machine so that the smooth, non-nub side of the tile was subjected to the abrasion test. The abrasion machine was equipped with H-22 coarse Calibrade wheels. A 1 kg load was applied to each abrasive wheel. The machine was activated and allowed to run for 1000 cycles. The test specimen was removed from the spindle and reweighed. The abrasive wear index (I_w) is calculated using the following equation: $I_w = 88/(W_o - W_f)$ where W_o is the original weight of the specimen, and W_f is the final weight of the specimen.

TEST RESULTS:

Abrasive Wear Index = 88

Please contact me if you have any questions regarding this test program.

Report Prepared By:

Andy Boersema

Gaynes Labs, Incorporated

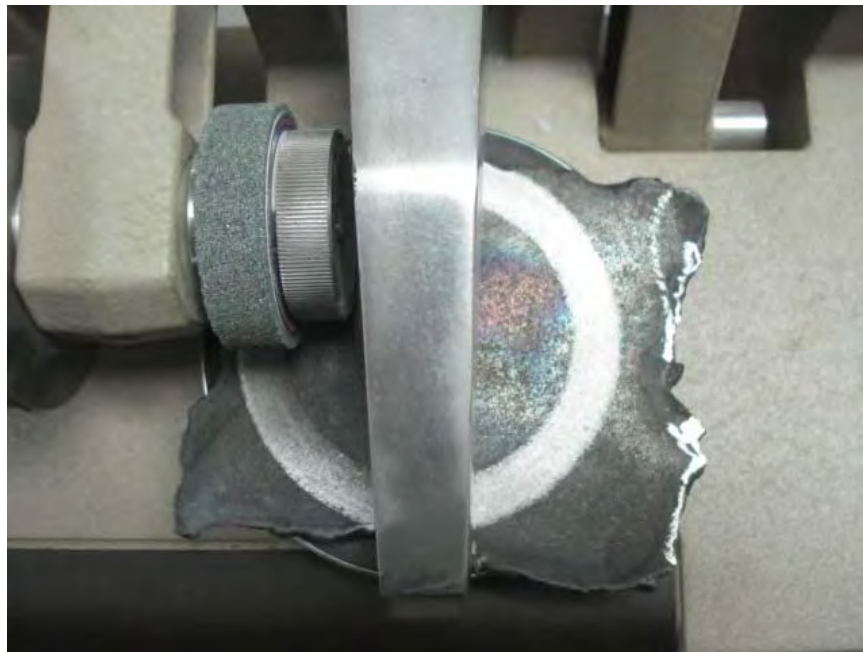


Photo No. 1 - Specimen After 1000 Test Cycles

Gaynes Labs, Incorporated

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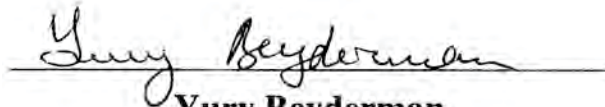
TufTile, Inc. shall indemnify and hold harmless Gaynes Labs, Incorporated its employees and agents from any and all claims, demands, actions, and costs that may arise out of:

(a) Any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to Gaynes Labs, Incorporated by TufTile, Inc. at the time the item was submitted for testing;

(b) Differences between those items actually tested and items previously or subsequently produced that are purported to be identical to the item tested;

(c) Any use of the tested item, whether by TufTile, Inc. or a third party, following its return to TufTile, Inc. from Gaynes Labs, Incorporated.

Gaynes Labs, Inc.


Yury Beyderman

Report No.: 14-150.2

Re:

Date of Report: 10/15/14

Date of Revision: dna



CONTAINER-QUINN TESTING LABS

170 Shepard Avenue, Wheeling, IL 60090

Phone: 847-537-9470

E-Mail: spowell@container-quinn.com

TEST CONDUCTED FOR: TufTile, Inc
1200 Flex Court
Lake Zurich, IL 60047

Attn.: Ted Meyers
888-960-8897

ITEMS TESTED: One (1) sample ADA Tactile Warning Pads made with Cast Iron

OBJECT OF TEST: To determine the Compressive Strength of the pads, PSI load

TEST PROCEDURE: Testing conducted in accordance with ASTM D-695

FINDINGS: These pads, as submitted and tested, were considered to comply with acceptance criteria.

See attached Laboratory Data Sheets for detailed test results

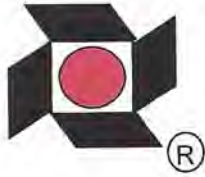
CONTAINER-QUINN TESTING LABS

APPROVED BY:

Stephen C. Powell - Vice-President

AS A MUTUAL PROTECTION FOR OUR CLIENTS AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF OUR CLIENTS, AND AUTHORIZATION FOR PUBLICATION IS RESERVED PENDING WRITTEN APPROVAL.

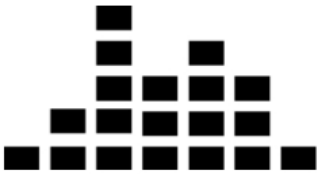
SAMPLES WILL BE DISPOSED OF 30 DAYS AFTER TESTING IS COMPLETED UNLESS OTHER ARRANGEMENTS ARE AGREED TO IN WRITING



TESTING RESULTS

COMPRESSION RESULTS
(psi)

Actual: 81700



GAYNES LABS, INCORPORATED

9708 Industrial Drive • Bridgeview, Illinois 60455

Member of "American Council of Independent Laboratories"

Phone: 708-233-6655
Fax: 708-233-6985

Email: gayneslabs@aol.com
Website: www.gaynestesting.com

June 10, 2015

TufTile Inc.
1200 Flex Court
Lake Zurich, IL. 60047

Attention: Mr. Ted Meyers
Regarding: Impact Testing of Cast Iron Tiles
Our Job No. 15339
Your P.O. # 14419

Dear Mr. Meyers,

Please find below the procedures and results of the test that was conducted on Cast Iron Detectable submitted and identified by TufTile Inc.

TEST PRROCEDURE:

Testing was conducted in accordance with NCHRP Procedure T4-33.

A 25.4 mm (1 in.) diameter hemispherical tup made from hardened steel was attached to the steel cylinder with the total weight of 20 lbs. (see Photo No. 1). The panel under test was placed on the flat, leveled concrete floor and positioned with one of the domes centered under the impactor tup (see Photos No. 2 and 3). The impactor was allowed to vertically impact the tops of the domes of the panels with energies of 27 J and 54 J (20 and 40 ft- lbs). Three (3) impacts were conducted at each energy level at ambient temperature and three (3) impacts were conducted at each energy level at a temperature of -4° C. Each impact was conducted on a separate dome not previously impacted.

The impacted domes were evaluated in accordance with the criteria in Table 1 of NCHRP Procedure T4-33.

Gaynes Labs, Incorporated

TEST RESULTS:

<u>Impact ID</u>	<u>Damage Category</u>
27 J, ambient, #1	B* (see Photo No. 4)
27 J, ambient, #2	B
27 J, ambient, #3	B
54 J, ambient, #1	B (see Photo No. 5)
54 J, ambient, #2	B
54 J, ambient, #3	B
27 J, -4° C, #1	B (see Photo No. 6)
27 J, -4° C, #2	B
27 J, -4° C, #3	B
54 J, -4° C, #1	B (see Photo No. 7)
54 J, -4° C, #2	B
54 J, -4° C, #3	B

* - Category B: Damage to surface texture or coating only.

Please contact me if you have any questions regarding this test program.

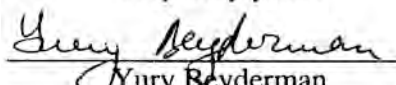
Very truly yours

Yuri Beyderman



Photo No. 1 – Overview of the Impactor



Photo No. 2 – Overview of the Impact Tester

Gaynes Labs, Incorporated



Photo No. 3 – Positioning of the Panel for the Impact



Photo No. 4 – Typical Damage to the Dome After 27 J Impact at Ambient Temperature

Gaynes Labs, Incorporated

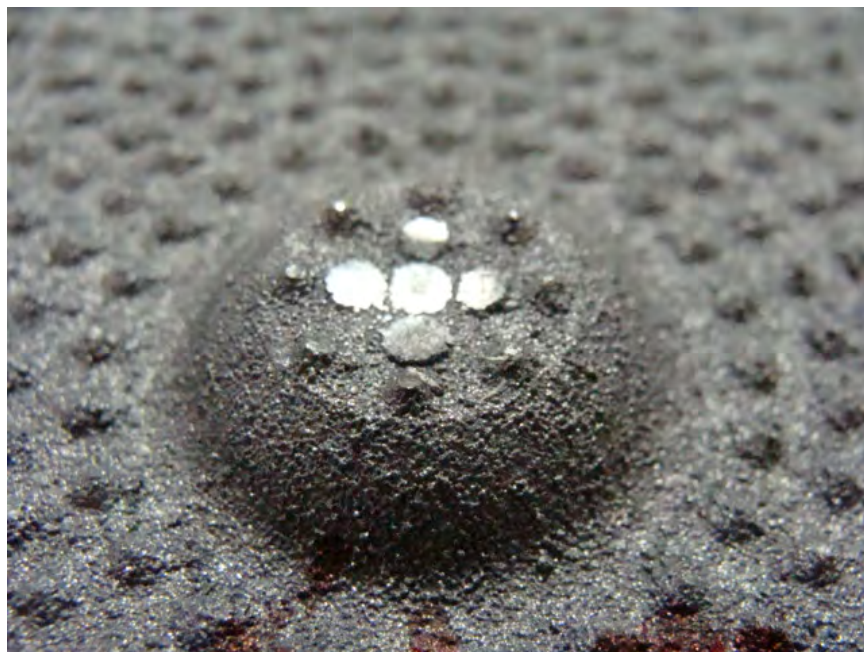


Photo No. 5 - Typical Damage to the Dome After 54 J Impact at Ambient Temperature



Photo No. 6 - Typical Damage to the Dome After 27 J Impact at -4° C Temperature

Gaynes Labs, Incorporated



Photo No. 7 - Typical Damage to the Dome After 54 J Impact at -4° C Temperature

Gaynes Labs, Incorporated

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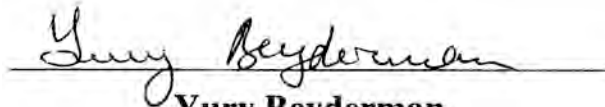
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Gaynes Labs, Inc.


Yury Beyderman



DETECTABLE WARNING PRODUCTS

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WARRANTY (Cast Iron)

TufTile, Inc. 5-Year Limited Warranty. TufTile, Inc. values your business, and the TufTile, Inc. tactile tile (the “product”) you purchased comes with a limited warranty that the product will be free from defects for a period of five years from date of installation subject to ordinary wear and tear. Failure to comply with recommended applications and installation of the product voids this warranty. Customer misuse including negligence, physical abuse and defects resulting from improper installation are not covered by this warranty. Local building codes may require minimum tactile tile performance specifications and TufTile, Inc. does not warrant product installations that violate building codes. While within the limited warranty period, if the product is not in good working order for its intended purposes, a replacement product shall be made available to the purchaser of the product. Purchaser’s remedy is limited to replacement of the product and no consequential or incidental damages and costs (including, but not limited to, lost profits, labor or transportation costs in connection with the removal, replacement and installation of the product) are recoverable or within the coverage of this limited warranty. Any representations made in connection with the sale of this product that differs from the terms of this limited warranty are not covered and should be brought to the attention of TufTile, Inc. immediately. No claim for replacement of a defective product will be honored without TufTile, Inc.’s reservation of its right to inspect the product for the claimed defect and its determination that the replacement of the product is covered by this warranty. The term of this limited warranty shall commence on the date of installation. Proof of purchase shall be required to be eligible for this warranty and to establish the commencement date of this limited warranty. No warranty replacement of the product is provided unless the purchaser’s written replacement claim is submitted to TufTile, Inc. before the expiration of five years from the date of installation of the product.

TO THE MAXIMUM EXTENT APPLICABLE AND ALLOWABLE UNDER LAW, THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE OF THE TUFTILE INC. LIMITED WARRANTY, AND TUFTILE INC. DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING THE PRODUCT, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. TO THE MAXIMUM EXTENT ALLOWABLE BY FEDERAL AND STATE LAW, THIS WARRANTY SUPPLEMENTS OR SUPERSEDES FEDERAL AND STATE CONSUMER GOODS WARRANTY PROTECTION.



DETECTABLE WARNING PRODUCTS

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The Law and Detectable Warning Surfaces

FEDERAL

The Americans with Disabilities Act (ADA) (42 U.S.C. 12101 et seq.) is a federal civil rights law that prohibits discrimination against individuals with disabilities. The regulations issued by the Department of Justice include accessibility standards for the design, construction, and alteration of facilities. One of those requirements requires installation of detectable warning surfaces as described in these sections of the ADA Accessibility Guidelines (ADAAG) for Public Rights-Of-Way (July 26, 2011). To view the entire proposed guidelines document go to www.access-board.gov

R305.1.1 Dome Size.

The truncated domes shall have a base diameter of 23 mm (0.9 in) minimum and 36 mm (1.4 in) maximum, a top diameter of 50 percent of the base diameter minimum and 65 percent of the base diameter maximum, and a height of 5 mm (0.2 in).

R305.1.2 Dome Spacing.

The truncated domes shall have a center-to-center spacing of 41 mm (1.6 in) minimum and 61 mm (2.4 in) maximum, and a base-to-base spacing of 17 mm (0.65 in) minimum, measured between the most adjacent domes.

R305.1.3 Contrast.

Detectable warning surfaces shall contrast visually with adjacent gutter, street or highway, or pedestrian access route surface, either light-on-dark or dark-on-light.

R305.1.4 Size.

Detectable warning surfaces shall extend 610 mm (2.0 ft) minimum in the direction of pedestrian travel. At curb ramps and blended transitions, detectable warning surfaces shall extend the full width of the ramp run (excluding any flared sides), blended transition, or turning space. At pedestrian at-grade rail crossings not located within a street or highway, detectable warnings shall extend the full width of the crossing. At boarding platforms for buses and rail vehicles, detectable warning surfaces shall extend the full length of the public use areas of the platform. At boarding and alighting areas at sidewalk or street level transit stops for rail vehicles, detectable warning surfaces shall extend the full length of the transit stop.

R305.2 Placement.

The placement of detectable warning surfaces shall comply with R305.2.

R305.2.1 Perpendicular Curb Ramps.

On perpendicular curb ramps, detectable warning surfaces shall be placed as follows:

1. Where the ends of the bottom grade break are in front of the back of curb, detectable warning surfaces shall be placed at the back of curb.
2. Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade brake to the back of curb is 1.5 m (5.0 ft) or less, detectable warning surfaces shall be placed on the ramp run within one dome spacing of the bottom grade break.
3. Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade brake to the back of curb is more than 1.5 m (5.0 ft), detectable warning surfaces shall be placed on the lower landing at the back of curb.

R305.2.2 Parallel Curb Ramps.

On parallel curb ramps, detectable warning surfaces shall be placed on the turning space at the flush transition between the street and sidewalk.

R305.2.3 Blended Transitions.

On blended transitions, detectable warning surfaces shall be placed at the back of curb. Where raised pedestrian street crossings, depressed corners, or other level pedestrian street crossings are provided, detectable warning surfaces shall be placed at the flush transition between the street and the sidewalk.

R305.2.4 Pedestrian Refuge Islands.

At cut-through pedestrian refuge islands, detectable warning surfaces shall be placed at the edges of the pedestrian island and shall be separated by a 610 mm (2.0 ft) minimum length of surface without detectable warnings.

R305.2.5 Pedestrian At-Grade Rail Crossings.

At pedestrian at-grade rail crossings not located within a street or highway, detectable warning surfaces shall be placed on each side of the rail crossing. The edge of the detectable warning surface nearest the rail crossing shall be 1.8 m (6.0 ft) minimum and 4.6 m (15.0 ft) maximum from the centerline of the nearest rail. Where pedestrian gates are provided, detectable warning surfaces shall be placed on the side of the gates opposite the rail.

R305.2.6 Boarding Platforms.

At boarding platforms for buses and rail vehicles, detectable warning surfaces shall be placed at the boarding edge of the platform.

R305.2.7 Boarding and Alighting Areas.

At boarding and alighting areas at sidewalk or street level transit stops for rail vehicles, detectable warning surfaces shall be placed at the side of the boarding and alighting area facing the rail vehicles.

SUBMITTAL REVIEW

- ☒ Reviewed ☐ Reviewed w/ Changes Noted
☐ Revise and Resubmit ☐ Rejected_____

SUBMITTAL WAS REVIEWED FOR DESIGN CONFORMITY AND GENERAL CONFORMANCE TO CONTRACT DOCUMENTS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING DIMENSIONS AT JOBSITE FOR TOLERANCE, CLEARANCE, QUANTITIES, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THIS WITH OTHER TRADES AND FULL COMPLIANCE WITH CONTRACT DOCUMENTS.

By: Karli Mattson Date: May 30, 2019
SCULL CONSTRUCTION SERVICES



PINE HALL BRICK

BUILD YOUR DREAMS.

April 29, 2019

Hebron Brick
2300 Main Avenue
Fargo, ND 58103
Attn: Bill Aker

Project: Deadwood Street – Rapid City, SD
GC: Scull Construction
MC: WD Masonry

We certify that the **Pine Hall 2 3/4" x 4" x 8" English Edge® Autumn Heavy Duty pavers** meet ASTM C-1272, Type F, Application PX and C-67 for freeze & thaw and efflorescence testing for the above-mentioned project.

Sincerely,

PINE HALL BRICK CO., INC.

Harold Beaty
Local Sales Director

HB/tb

Subscribed and sworn to before me,
Teresa Beane, Notary Public, this
the 29th day of April 19.

Notary Public



Results of Tests on Brick conducted in accordance with ASTM C67-12 Standard Method for Sampling and

Testing Brick and Structural Clay Tile

05/08/2013

Name: Pine Hall Brick Company, Inc
P. O. Box 836
Madison, NC 27025
Phone: 336-548-6007
Fax: 336-548-1837

Plant: Madison
Report Number: PHB-0079
Sampled Date: 04/15/2013
Lot:
Product Code:

Sample Description: **English Edge HD Shale Body**

							Test Date
Absorption	1	2	3	4	5	Average	
24 Hour Submersion in Cold Water (%)	3.30	3.38	3.24	2.96	2.89	3.15	04/18/2013
5 Hour Submersion in Boiling Water (%)	6.00	6.16	5.94	5.85	5.70	5.93	
Saturation Coefficient (Ratio of 24H to 5H)	0.55	0.55	0.55	0.51	0.51	0.53	
Compressive Strength	1	2	3	4	5	Average	
<i>psi</i>	19,285	16,228	16,305	14,983	16,359	16,632	04/23/2013
<i>MPa</i>	133.0	111.9	112.4	103.3	112.8	114.7	
Breaking Load	6	7	8	9	10	Average	
<i>(lb/in.)</i>	1,548	1,203	975	1,429	1,223	1,276	04/30/2013
Efflorescence	11	12	13	14	15		
	Not Effloresced	Not Effloresced	Not Effloresced	Not Effloresced	Not Effloresced		04/30/2013
Abrasion Resistance	1	2	3	4	5	Average	
	0.02	0.02	0.02	0.02	0.02	0.02	04/30/2013

The brick represented by the test results shown here comply with the standards listed below:

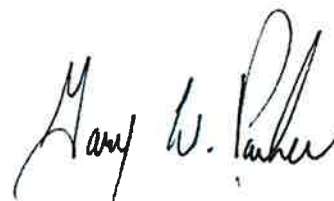
ASTM C 1272 - 11 Standard Specification for Heavy Vehicular Paving Brick

Type: R, F

Application: PS, PA



John Sanders, Ph.D., PE, Director



Gary W. Parker, Laboratory Supervisor

*Pine Hall Brick Company, Inc.
634 Lindsey Bridge Road, PO Box 836
Madison, NC 27025-0836*

For additional Information
contact:
Stephen Way
336-548-6007

Date Completed: 1-14-09
Last Revision: 1-12-18

SECTION I- PRODUCT IDENTIFICATION

Product Name: **Brick**
Chemical Family: Predominately Aluminum Silicates
Formula: Mixture
Product Use: Masonry building material component

SECTION II – HAZARD IDENTIFICATION



Bricks as shipped do not present an inhalation, ingestion or contact hazard. However, operations such as sawing and grinding may result in the following effects.

ACCUTE EFFECTS OF OVEREXPOSURE:

Eye: May cause irritation by abrasion with dust or chips.

Skin: Brick dust or chips may cause allergic reactions in hypersensitive individuals; May cause cuts and skin abrasions.

Inhalation: Brick dust or chips may cause congestion and irritation in nasal and respiratory passages.

Ingestion: No known acute effects.

CHRONIC EFFECTS OF OVEREXPOSURE:

Excessive exposures to respirable particulates (dust) over an extended period of time may result in the development of pulmonary diseases such as silicosis.

CARCINOGENICITY:

The following carcinogenicity classifications for crystalline silica have been established by the following agencies:

OSHA: Not regulated as a carcinogen

IARC: Group 1 carcinogenic in humans
NIOSH: Carcinogen, with no further categorization
NTP: Known carcinogen

WARNING: Brick dust may contain crystalline silica, a chemical that has been determined by the agencies listed above to cause cancer. Inhalation of brick dust above established or recommended exposure levels should be avoided by use of wet sawing or shaping and/or use of a NIOSH and/or MSHA approved respirator. Always stack and store bricks in a stable manner to avoid falling hazards.

SECTION III – COMPOSITION/IFORMATION ON INGREDIENTS

INGREDIENTS	CAS #	% WEIGHT
Aluminum Silicates	Various	50-85
Quartz	14808-60-7	Varies
Manganese Compounds	Various	0-3
Calcium Compounds	Various	0-3

The above chemistries are provided for Industrial hygiene and environmental purposes and are not intended to represent product specifications. This information has been compiled from data believed to be reliable. Elements such as aluminum, arsenic, boron, calcium, chromium, cobalt, copper, lead, molybdenum, nickel, tin, titanium, vanadium and zirconium may be present in trace amounts. Brick products as shipped do not present an exposure hazard.

SECTION IV – FIRST AID MEASURES

Inhalation: Remove from exposure to airborne particulates. Consult a physician if breathing does not return to normal.

Skin: Wash with soap and water. If an allergic reaction causes a rash that does not heal within a few days, consult a physician. Treat abrasions as any other scrape or cut with disinfectants and bandages.

Eye: Flush with running water. Obtain medical assistance if irritation continues.

Medical Conditions Aggravated by Exposure: Excessive dust exposure may aggravate any existing respiratory disorders or diseases. Possible complications or allergies resulting in irritation to skin, eyes and respiratory tract may occur from excessive exposure to dusts.

SECTION V – FIRE FIGHTING MEASURES

Bricks as shipped, do not pose a fire or explosion hazard

SECTION VI – ACCIDENTAL RELEASE MEASURES

Bricks as shipped, do not pose a threat or danger when accidentally released

SECTION VII – HANDLING AND STORAGE

Ventilation: Provide adequate ventilation to maintain exposures below the OSHA PEL and ACGIH TLV for quartz and other substances.

Other controls: Use of wet sawing methods is recommended any time that bricks must be cut.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

	OSHA PEL mg/m ³	ACGIH TLV mg/m ³
Aluminum Silicates	15	10
Quartz	10/ %SiO ₂ + 2 (respirable) 0.50mg/m ³ (respirable)	0.05 (respirable)
Manganese Compounds	Not available	Not available
Calcium Compounds	Not available	Not available

Respiratory Protection: For airborne concentration exceeding the OSHA PEL or ACGIH TLV use a NIOSH and/or MSHA approved respirator.

Skin: Use gloves and or protective clothing if abrasions or allergic reactions are experienced.

Other Protective Equipment: Eye and Face: Face shields should be used when sawing brick. Use of steel toe shoes is recommended when handling brick.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: NA

Vapor Pressure: NA

Melting Point: NA

Vapor Density: NA

Specific Gravity: 2.6

Solubility in Water: Negligible

Appearance and Odor: Granular solid, essentially odorless. Bricks come in a wide range of colors.

SECTION X – STABILITY AND REACTIVITY

Bricks as shipped are stable and not reactive

SECTION XI – TOXICOLOGICAL INFORMATION

Aluminosilicates Toxic and Hazard Review (Sax): an experimental tumorigen by implant. Toxicity Data: ipl-rat TDLo:90 mg/kg:ETA.

Aluminosilicates (Clay) Toxic and Hazard Review Chemical Toxicology (Hodge Et al.) Toxicity Rating: 1. Chemically and biologically inert when ingested in any of its many physical forms, such as crystalline quartz, amorphous siliceous earth or colloidal silica gels.

Quartz CAS# 14808-60-7. Toxic and Hazard Review (Sax): Experimental poison by intratracheal and intravenous routes. An experimental carcinogen, tumorigen, and neoplastigen. CLASS OF COMPOUND(RTECS): Tumorigen; Mutagen; Human data. Human systemic effects by inhalation: cough, dyspnea, liver effects. Listed bPage 4 of 5y IARC as a "known human carcinogen" Group 1. Listed by NTP. No LD50 in RTECS. Toxicity Data: Inhalation human: TCLo 16 million particles per cubic centimeter per 8 hours per 17.9 Years-Intermittent: Pulmonary system effects; Inhalation-human LCLo: 300 micrograms/m3 per 10 years-intermittent: liver. Other species toxicity data (NIOSH RTECS): intravenous-rat LDLo: 90 mg/kg; intraperitoneal-rat LDLo: 200 mg/kg;intravenous-mouse LDLo: 40 mg/kg; intravenous-dog LDLo: 20 mg/kg.

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicological/Chemical Fate Information: No data available on any adverse effects of this material on the environment.

SECTION XIII – DISPOSAL CONSIDERATIONS

Waste Management/Disposal: This block, or fragments of such, does not exhibit any characteristics of a hazardous waste and is suitable for landfill disposal. However, debris generated during installation or tear-out procedures may be contaminated with other hazardous materials. Therefore, appropriate waste analysis in these instances may be necessary to determine proper method of disposal. Waste characterization and disposal/treatment methods should be determined by a qualified environmental professional in accordance with applicable federal, state and local regulations.

SECTION XIV – TRANSPORTATION INFORMATION

Bricks as shipped are not Hazardous Materials per DOT regulations.

SECTION XV – REGULATORY INFORMATION

RCRA: Brick in its solid form is typically considered a non-hazardous waste for disposal but local regulation may vary, therefore all waste must be disposed/recycled/reclaimed accordance with federal, state and local environmental control regulations. Water containing brick solids, such as from wet sawing operations, should also be disposed of in accordance with federal, state and local environmental regulation. Brick waste should not be used as a blasting agent.

EPCRA Section 311/312: Bricks as shipped are not a Section 311/312 reportable product.

EPCRA Section 313: Bricks as shipped are not subject to the Section 313, Toxic Chemical Release Inventory reporting requirements.

SECTION XVI – OTHER INFORMATION

Pine Hall Brick Company, Inc. considers our product an “article” as defined in 30 CFR 1200(b)(g)(iv) and 40 CFR 372.38, as articulated, a SDS is not required and the product is exempt from all other requirements of the hazard communication standard. OSHA requires a SDS for brick because it is occasionally dry sawed. We recommend only wet sawing of brick.

This SDS was prepared with information believed accurate at the time of preparation and was prepared and provided in good faith. However, Pine Hall Brick Company, Inc. assumes no responsibility as to the accuracy of suitability of such information and no warranty expressed or implied is made.

Date Completed: 1-14-09

Last Revision: 1-12-18

NORTH REGION

3975 Sturgis Road, Rapid City, SD 57702
PO Box 2720, Rapid City, SD 57709
TEL 605.394.3300
FAX 605.341.3446 (*estimating*)
FAX 605.342.4513 (*accounting*)



S I M O N

May 29, 2019

Outlaw Square
Deadwood, SD

RE: Bituminous Setting Bed

To Whom It May Concern:

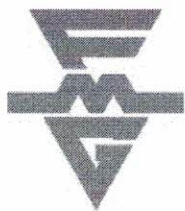
Prior to bidding the project, Simon Contractors contacted Ferber Engineering and determined that the aggregate gradation required for this project is the Open Graded Aggregate as shown in Table 2 – Gradation for Bituminous Setting Bed Aggregate as shown in section 2.3.2 on page 321416-3 of the bid document. Please find attached the 2019 Quality Control Testing –Oral Sand as performed by FMG Engineering which shows that Oral Sand meets the project specified gradation.

The asphalt cement/binder to be used on this project will be PG 64-22 as allowed in section 2.3.1 on page 321416-3 of the bid document. As stated in section 2.3.2 on page 321416-4 of the bid document, typical mix proportions contain approximately 6-8 percent asphalt cement by weight. Simon Contractors proposes to add 7% asphalt cement by weight (the middle of the approximate band given) to the mix.

If you have any questions, please feel free to contact me at 605-394-3320.

Sincerely,

Mike Lee
Quality Control

**FMG ENGINEERING**3700 Sturgis Road, Rapid City, SD 57702 • fmgengineering.com • 605-342-4105

January 10, 2019

Pete Lien and Sons
Attn Laird Klippenstein:
PO Box 440
Rapid City, SD 57709-0440

RE: 2019 QUALITY CONTROL TESTING – ORAL SAND
ORAL PIT, SOUTH DAKOTA

Dear Mr. Klippenstein:

As requested, we have performed quality control testing on a sample of concrete sand recently submitted to our laboratory from the Oral Sand Pit in South Dakota. The test results are as follows:

Standard Sieve Analysis

	<u>Percent Passing By Weight</u>							
<u>Sieve Size:</u>	<u>3/8"</u>	<u>#4</u>	<u>#8</u>	<u>#16</u>	<u>#30</u>	<u>#50</u>	<u>#100</u>	<u>#200</u>
Oral Concrete Sand:	100	100	88	67	39	19	5	1.0
<i>Specs(ASTM C33):</i>	<i>100</i>	<i>95-100</i>	<i>80-100</i>	<i>50-85</i>	<i>25-60</i>	<i>5-30</i>	<i>0-10</i>	<i>0-3</i>

Fineness Modulus (FM)

		<u>Specs.</u> <u>(ASTM C33)</u>
Oral Sand:	2.8	2.3 - 3.1

Deleterious Materials

Friable Particles (ASTM C142):	0.2%	3.0% max
Lightweight Particles (ASTM C123):	0.0%	0.5% max
Organic Impurities (ASTM C40):	Standard	Standard or Lighter
Finer than #200 mesh sieve (ASTM C117):	1.0%	3.0% max.

Soundness (ASTM C88, 5-cycle Sodium Sulfate)

Weighted Average Loss:	2.5%	10% Max
------------------------	------	---------

Specific Gravity & Absorption (ASTM C 128)

Absorption:	1.2%
Specific Gravity (Bulk SSD):	2.62

Fine Aggregate Angularity (AASHTO T 304)

Oral Sand:	40.8%
------------	-------

We trust this information is sufficient. Should you have any questions or need anything additional, please don't hesitate to contact us at your earliest convenience. *Thank you for the opportunity to be of service.*

Sincerely,

FMG Engineering

Kyle Jacobson

230-2% Neo-Asphalt (trowel grade)**DESCRIPTION:**

James 605-430-1641
Karnak #230-2% Neo-Asphalt is a cold applied, rubberized asphalt cement, designed especially for use as an adhesive for paving blocks and pressed asphalt bricks. Eliminates the need for a hot kettle.

PHYSICAL PROPERTIES:

Viscosity @ 25C:	30,000-40,000 C.P.S.
Specific Gravity @ 25C:	1.02
Weight per Gallon @ 25C:	8.5 lbs.
% Solids by Weight:	60%
Softening Point of Rubber Blend:	150F
% Inorganic Material:	18%
% Long Fiber	10%
% Neoprene	2% min.

SURFACE PREPARATION:

All surfaces should be clean, free from oil, grease or other foreign matter.

APPLICATION:

Karnak #230-2% Neo-Asphalt can be applied to either concrete or macadam (blacktop) using a 1/16" serrated trowel. For best results, Karnak #230 2% Neo-Asphalt should be allowed to have a minimum of 2-3 hours open air time or until material becomes tacky and just skins over, prior to embedding the asphalt bricks.

COVERAGE:

Apply at the rate of 1.5 - 2 gallons per 100 sq. ft. Do not exceed coverage rate.

CARE OF TOOLS:

Tools and other equipment should be thoroughly cleaned with mineral spirits, taking necessary precautions when handling combustible materials.

CAUTION:

Do not use near open flame. Avoid breathing solvent fumes and prolonged contact with skin. Do not take internally. If swallowed, **do not** induce vomiting. Call a physician immediately. Keep out of reach of children. Keep container covered when not in use. **Do not thin.** Dispose of in an environmentally safe manner.

PACKAGING:

Available in 5 gallon pails and 55 gallon drums.

If further information is needed, contact Karnak Technical Services at 1-800-526-4236.

Please see page 225 for additional mold and safety information.

KARNAK

330 CENTRAL AVENUE, CLARK, NJ 07066
732-388-0300 • 800-526-4236 • FAX: 732-388-9422
WEB: <http://www.karnakcorp.com>

237-2% Neo-Asphalt (brush grade)

DESCRIPTION:

Karnak #237-2% Neo-Asphalt is an asbestos-free cold applied, rubberized asphalt cement, designed especially as an adhesive for paving blocks and pressed asphalt bricks, eliminating the need for a hot kettle.

PHYSICAL PROPERTIES:

Viscosity @ 25C:	12,000-18,000 C.P.S.
Specific Gravity @ 25C:	1.02
Weight per Gallon @ 25C:	8.1 lbs.
% Solids by Weight:	70%
Softening Point of Rubber Blend:	150F
% Inorganic Material:	6.5%
% Long Fiber	10%
% Neoprene	2% min.

SURFACE PREPARATION:

All surfaces should be clean, dry, free from oil, grease or other foreign matter.

APPLICATION:

Karnak #237-2% Neo-Asphalt can be applied to either concrete or macadam (blacktop) using a brush or squeegee. For best results, allow a minimum of 2-3 hours open air time or until material becomes tacky and just skins over prior to embedding the paving blocks.

NOTE:

Karnak #237-2% Neo-Asphalt should be thoroughly **mechanically mixed** prior to application. Macadam (blacktop) surfaces should be cured prior to applying Karnak #237-2% Neo-Asphalt.

COVERAGE:

Apply at the rate of 1.5 - 2 gallon per 100 sq. ft. Do not exceed coverage rate.

CARE OF TOOLS:

Tools and other equipment should be thoroughly cleaned with mineral spirits, taking necessary precautions when handling combustible materials.

CAUTION:

Do not use near open flame. Avoid breathing solvent fumes and prolonged contact with skin. Do not take internally. If swallowed, **do not** induce vomiting. Call a physician immediately. Keep out of reach of children. Keep container covered when not in use. **Do not thin.** Dispose of in an environmentally safe manner.

KARNAK

330 CENTRAL AVENUE, CLARK, NJ 07066
732-388-0300 • 800-526-4236 • FAX: 732-388-9422
WEB: <http://www.karnakcorp.com>

FM1015

237-2% Neo-Asphalt (brush grade)

PACKAGING:

Available in 5 gallon pails and 55 gallon drums.

**If further information is needed, contact Karnak Technical Services at
1-800-526-4236.**

Please see page 225 for additional mold and safety information.

KARNAK

330 CENTRAL AVENUE, CLARK, NJ 07066
732-388-0300 • 800-526-4236 • FAX: 732-388-9422
WEB: <http://www.karnakcorp.com>

ANNAPOLIS

Product Data Sheet



The Annapolis™ Bollard is a handsome sentinel that performs multiple maneuvers with style. Standard Bollard, Smart Bollard and Security Bollard share basic design and construction characteristics, specialize in their features and functions. Annapolis offers distinctive solutions in scope and detail for path making and wayfinding, safety and security in outdoor environments.

Annapolis™ Standard Bollard

- Available in 6" and 12" diameter, with or without low-voltage LED lighting.
- A protective polyethylene sleeve is available in black or silver.
- Embedded, removable, or surface mount bollard styles.
- A keyed lock secures the bollard when in the socket.
- All 6" styles, including 6" removable bollard may be fitted with the Smart bollard top to provide solar powered lighting.
- Removable bollard not available in hardwired.

Annapolis™ Smart Bollard

- Embedded, removable, or surface mount bollard style.
- The monocrystalline solar panel collects energy from the sun and converts it to electrical current.
- Energy is stored in a sealed lead-acid rechargeable battery that delivers extremely reliable power output over a long period of time.
- The microprocessor-based charge controller turns lights on at dusk and off at dawn.
- 4 white LEDs with 3500K correlated color temperature (CCT).

Annapolis™ Security Bollard

- Available in 6" and 12" diameter. 6" dia. security bollard may be specified with Smart solar-powered LED light.
- Security bollard is designed to be permanently embedded with a reinforced footing and internal concrete/steel reinforcement. Details for an optional security footing available on our website at www.landscapeforms.com

TECHNICAL INFORMATION		
	HARDWIRED	SOLAR
Lamp	1 Cree LED	4 Nichia LEDs
Color Temp	3500k	3500K
LED Luminous Flux	~10 lumens	~10 lumens
LED Energy Consumption	approximately 3 watts	.43 watt max
Input Voltage	120-277 VAC	n/a
TM21 LED Lifespan	60,000 hours	Up to 60,000 hours
Solar Top	n/a	Tempered Borosilicate glass top with Mono-Crystalline PV cells
Diffused Lens	UV stable impact modified translucent acrylic	UV stable impact modified translucent acrylic
Protection Rating	IP66 for light assembly	IP66 for solar light assembly
Horizontal Output	360°	360°
Average Direct Sunlight Exposure to Maintain Function	n/a	4 hours
Latitude Range	n/a	50° S to 50° N
Battery	n/a	Valve regulated lead-acid
Nominal Battery Voltage	n/a	6 volts
Capacity	n/a	7.0 amp/hr at 20/hr discharge rate
Temperature Range	n/a	-40° F to 115° F
Maximum Operation	n/a	14 hours

ANNAPOLIS

Product Data Sheet



Finishes

- Metal is finished with Landscape Forms' proprietary Pangard II® polyester powdercoat, a hard yet flexible finish that resists rusting, chipping, peeling and fading.
- Call for standard color chart.

To Specify

- Choose 6" or 12" diameter embedded style, 6" surface mount style, or 6" removable style.
- Specify black or silver protective polyethylene sleeve or without sleeve.
- Specify with or without lighting based on the following guidelines:
- 6" embedded and surface mount, available with hard wired or solar powered lighting; 6" removable only offered with solar lighting; 12" embedded only offered with hard wired lighting.

EXAMPLE: 6" Surface Mount, Black Sleeve, Hard Wired LED Lighting

Warranty

Landscape Forms, Inc. warrants all products (other than noted exceptions) to be free from defects in material and/or workmanship for a period of three years from date of invoice. Noted exceptions: LED lighting products are warranted for six years.

Designed by Brian Kane, IDSA

Annapolis Smart Bollard is protected by U.S. Patent Nos. D6,573,659; D6,013,985

	STYLE	DIAMETER	HEIGHT	PRODUCT WEIGHT
	6"	6"	33"	Surface Mount: 47lbs Embedded: 80lbs Removable: 107lbs
	12"	12"	33"	Embedded: 200lbs
	6" removable bollard			
	protective sleeve			
	lighted bollard top			

**Black Hills Landscapes
And
Valley Green Lawn and Garden Center**

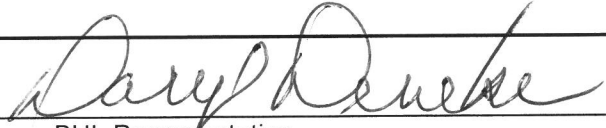
1996 Sedivy Lane Rapid City, SD 57703
(605) 341-1745 (605) 348-6999
Fax (605) 348-1679
E-Mail daryl@bhl.net

Submittal Documentation

Scull Construction
Scott Edwards
PO Box 7636
Rapid City, SD 57709

Outlaw Square
Deadwood, SD 57732

Description	Qty	Size	Supplier	Location
Spec Section: Plantings				
Ginko "Princeton Sentry" sub Ginko Biloba	1	2"	Central Landscape	St. Cloud, MN
New Horizon Elm	2	2.5"	McKay Nursery	Waterloo, WI
Frontier Elm	6	2.5"	McKay Nursery	Waterloo, WI
Tree Grates (Coho)	9	6' x 6' Square	Urban Accessories	Tacoma, WA
Tree Grate Frame	9	6' Square Type S	Urban Accessories	Tacoma, WA
Cedar Bark Mulch	5 cy	Shredded	Mountain West	Piedmont, SD

Signature		5-31-19
	BHL Representative	Date

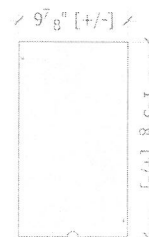
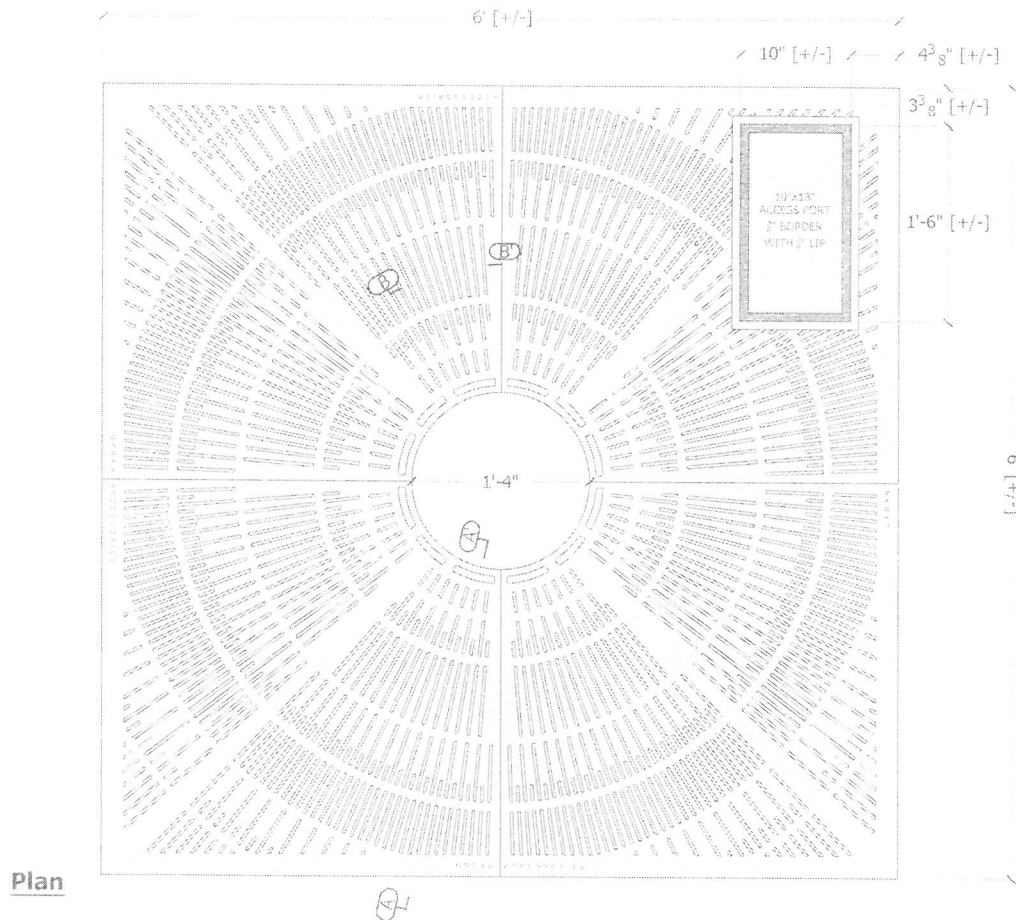
Daryl Deneke-Principle-Black Hills Landscapes and Valley Green Lawn and Garden Center
Bachelor of Science-Landscape Design-SOUTH DAKOTA STATE UNIVERSITY
Member-Black Hills Home Builders
Member-Rapid City Chamber of Commerce
Member-Construction Industry Center
COMMITTED TO CUSTOMER SATISFACTION

SUBMITTAL REVIEW

- | | |
|--|--|
| <input checked="" type="checkbox"/> Reviewed | <input type="checkbox"/> Reviewed w/ Changes Noted |
| <input type="checkbox"/> Revise and Resubmit | <input type="checkbox"/> Rejected _____ |

SUBMITTAL WAS REVIEWED FOR DESIGN CONFORMITY AND GENERAL CONFORMANCE TO CONTRACT DOCUMENTS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING DIMENSIONS AT JOBSITE FOR TOLERANCE, CLEARANCE, QUANTITIES, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THIS WITH OTHER TRADES AND FULL COMPLIANCE WITH CONTRACT DOCUMENTS.

By: Karli Mattson Date: June 10, 2019
SCULL CONSTRUCTION SERVICES

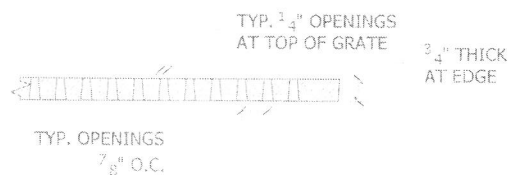


Access Port Cover

Plan



Section A-A'



Section B-B'

SPECIFICATIONS

- Material will be high quality 100% recycled grey iron; ASTM A48 class 35b or better; hardness 170-223 brinnell (unless specified otherwise; see below).

Material:

- ☒ Grey iron ASTM A48 (standard)
- ☐ Aluminum, ASTM B26
- ☐ Ductile iron, (required for all load ratings higher than pedestrian) ASTM A536 class 65-45-12.
- ☐ Nickel bronze (ASTM B30)
- ☐ Bronze (ASTM B26)

- Finish will be natural patina of raw iron (unless specified otherwise; see below).

Finish:

- ☒ Raw (standard)
 - ☐ Rust conditioner
 - ☐ Polyester Powder Coat*
 - ☐ Liquid Coat (wet paint)*
- Color:
- *Please specify standard UA color or mfr. name and color code.
 - ☐ Brush (bronze/nickel/aluminum only)
 - ☐ Polish (bronze/nickel/aluminum only)
 - ☐ Galvanized (grey iron and ductile iron only)
 - ☐ Other:

- Dimensions are nominal.

Notes

- 1) Cast in four pieces.
- 2) Grate is 3/4" thick at edge.
- 3) Center opening expansions at 2'-0" and 2'-8" diameter.
- 4) No openings greater than 1/4", except first ring which is 1/2" wide, in conformance with ADA Accessibility Guidelines.
- 5) Grate weighs 700 lbs.

Comments:

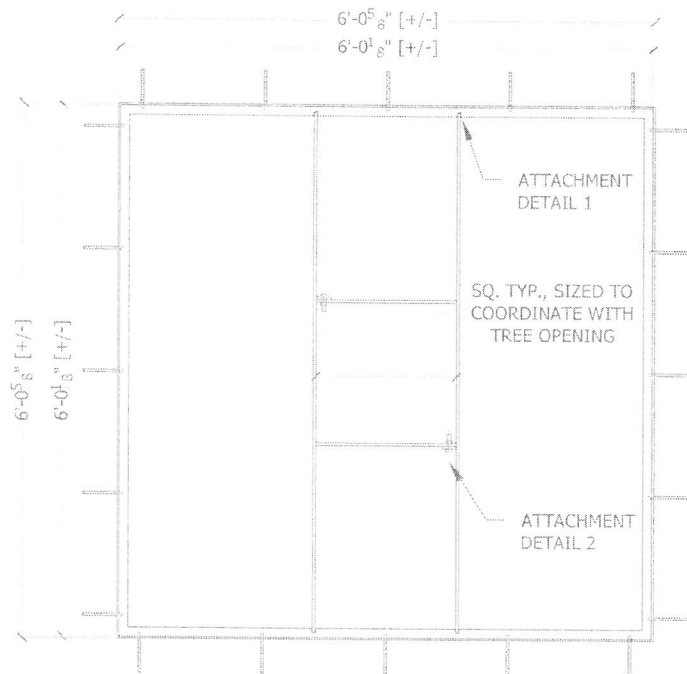
Tree Grate

6' Sq. Coho | Access Port
PN: Outlaw Square

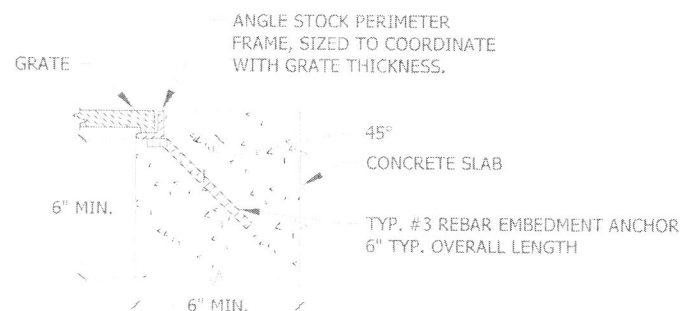
Page 1 of 2 Date: 5/22/19



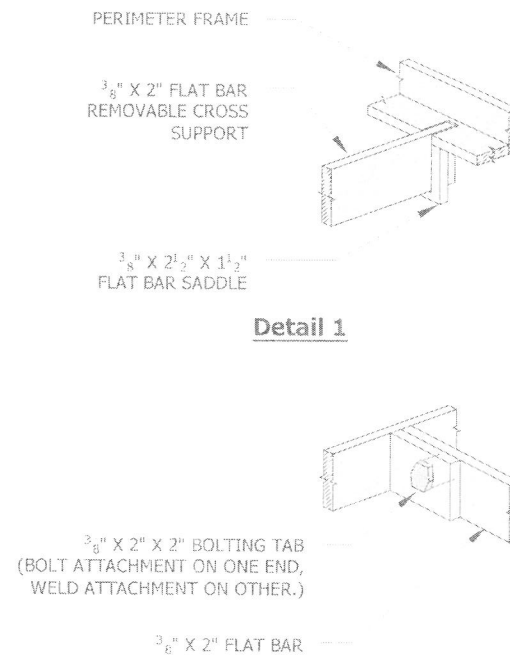
465 E. FIFTEENTH ST. sales@urbanaccessories.com
TACOMA, WA 98421 www.urbanaccessories.com
(877) 487-0488



Plan

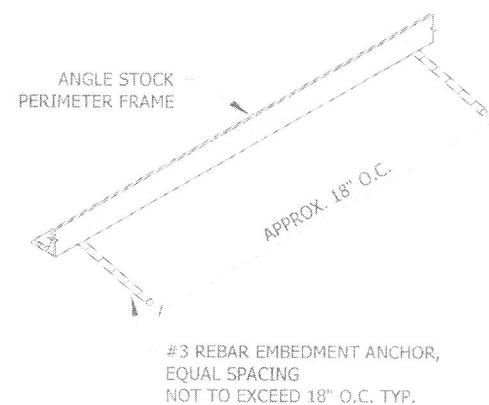


Elevation



Detail 1

Detail 2



Isometric

SPECIFICATIONS

- Frames are constructed of mild steel ASTM A36 (unless specified otherwise; see below).

Material:

- ☒ Mild Steel ASTM A36 (standard)
- ☐ Stainless Steel grade 304L
- ☐ Architectural Bronze, ASTM B455
- ☐ Structural Aluminum, ASTM B221

- Finish will be natural patina of raw steel (unless specified otherwise; see below).

Finish:

- ☒ Raw (standard)
- ☐ Polyester Powder Coat*
- ☐ Liquid Coat (wet paint)*
- Color:
 - *Please specify standard UA color or mfr. name and color code.
- ☐ Galvanized
- ☐ Other:

- Frame is load rated for pedestrian traffic only (unless specified otherwise; see below).

Load Classifications:

- ☒ Pedestrian (standard)
- ☐ Light Vehicular
- ☐ H20/HS20
- (Additional steel support may be added for optional load classes. Please contact UA for revised cut sheet, as necessary.)

- Typical 1/8" horizontal gap between grate and frame. All visible welds to be ground smooth on outside edges. Frames will be true to square or diameter. Top of grate flush with grade of surrounding topping material (paver, concrete slab, etc.).

- Dimensions are nominal.

Comments:

Tree Grate Frame

6' Sq. Type "S"
Pedestrian Duty

Page: 2 of 2 Date: 5/22/19



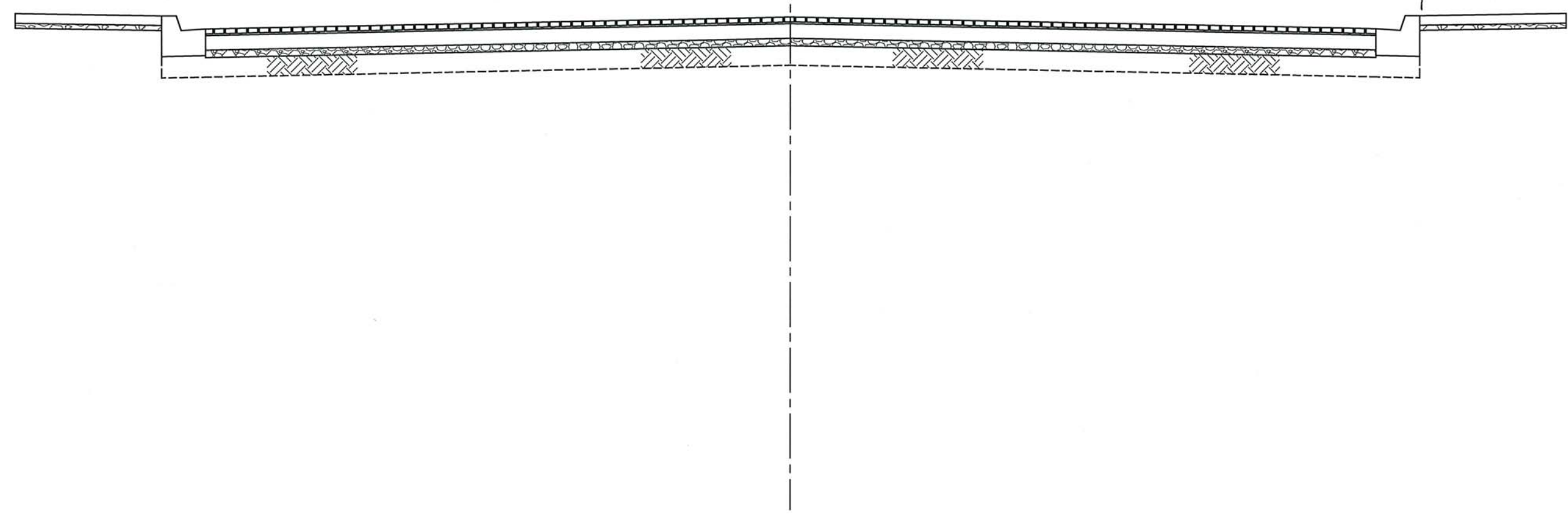
465 E. FIFTEENTH ST. sales@urbanaccessories.com
TACOMA, WA 98421 www.urbanaccessories.com
(877) 487-0488

PINE STREET TO DEADWOOD STREET - 35' TO 39'
DEADWOOD STREET TO LEE STREET - 35' TO 39'

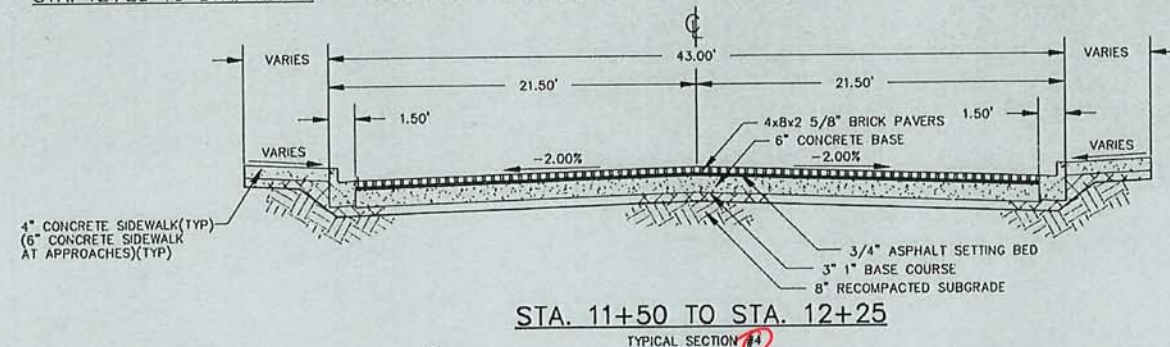
VARIES

VARIES

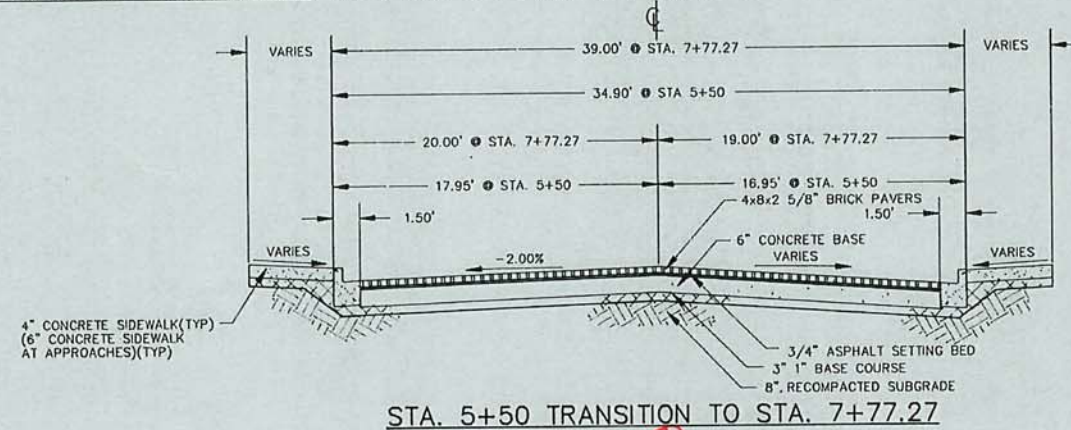
LEE STREET TO THE END OF THE BRICK - 43'



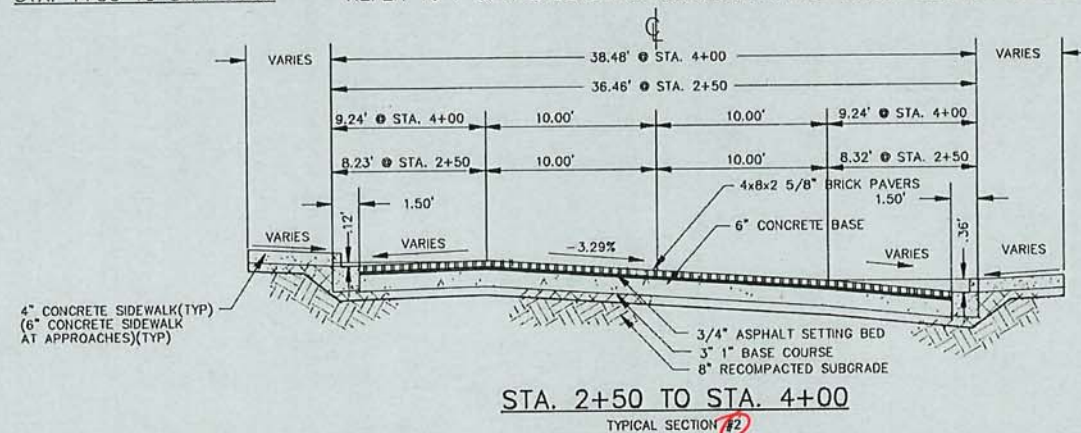
STA. 12+25 TO STA. 12+55 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



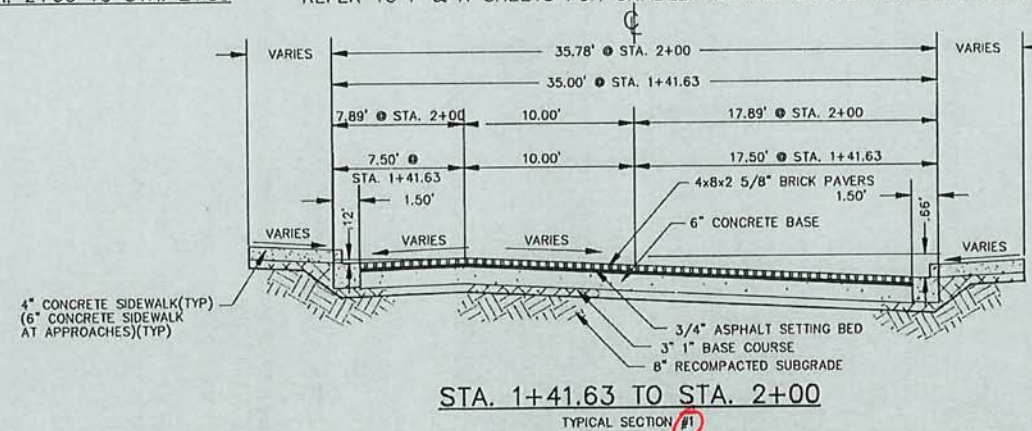
STA. 11+00 TO STA. 11+50 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.
 STA. 8+03.18 TO STA. 11+00 REFER TO TYPICAL SECTION #5 THIS SHEET.
 STA. 7+77.27 TO STA. 8+03.18 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



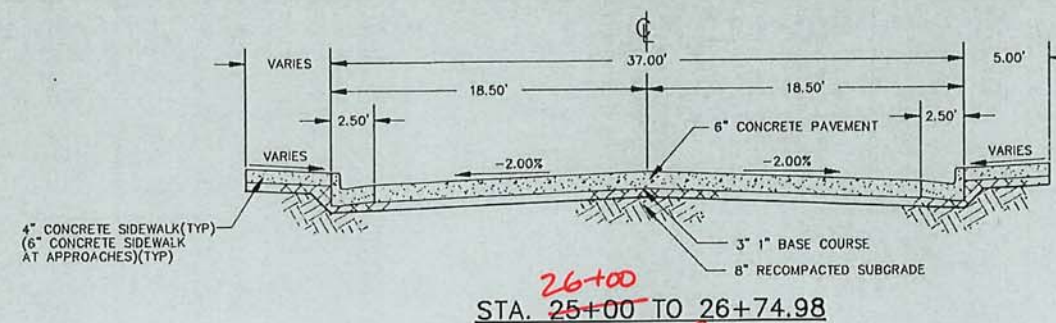
STA. 4+00 TO STA. 5+50 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



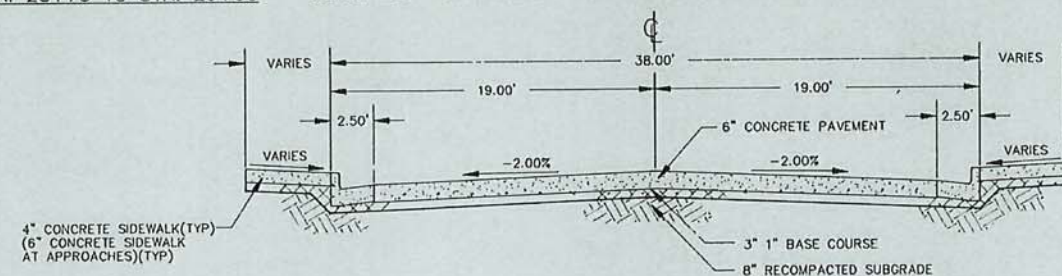
STA. 2+00 TO STA. 2+50 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



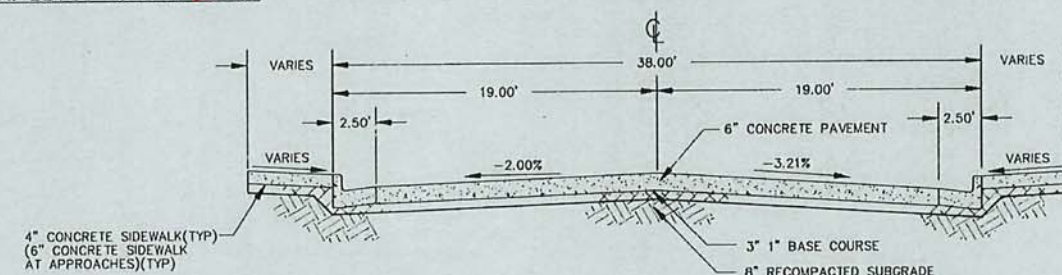
STA. 0+00 TO STA. 1+41.63 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



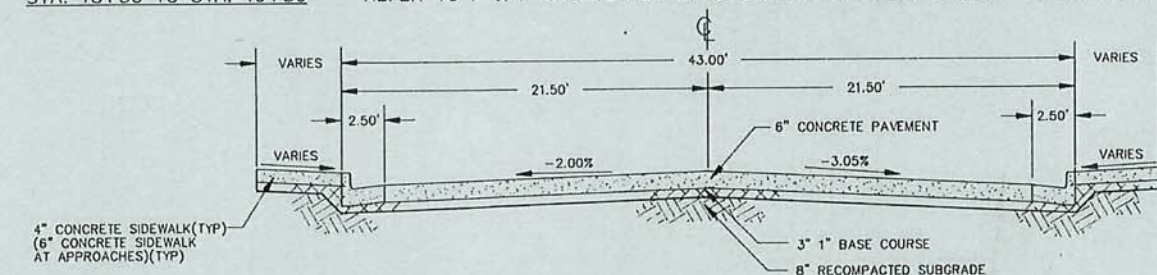
STA. 25+75 TO STA. 26+00 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



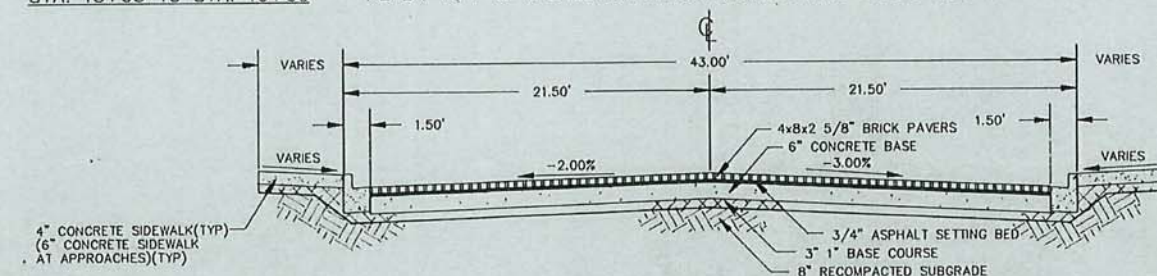
STA. 22+00 TO STA. 26+00 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



STA. 18+50 TO STA. 19+50 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



STA. 15+95 TO STA. 16+00 REFER TO F & N SHEETS FOR GRADELINES AND CROSS-SECTION INFORMATION.



STA. 12+55 TO STA. 15+95 & STA. 8+03.18 TO STA. 11+00

NOTE:
 TYPICAL CROSS-SECTIONS INDICATE 2 5/8\"/>

NO.	DATE	DESCRIPTION	BY

TSP
 A Professional Design Group

TSP Two, Inc.
 600 Kansas City St.
 Rapid City, SD 57701
 (605) 343-6102

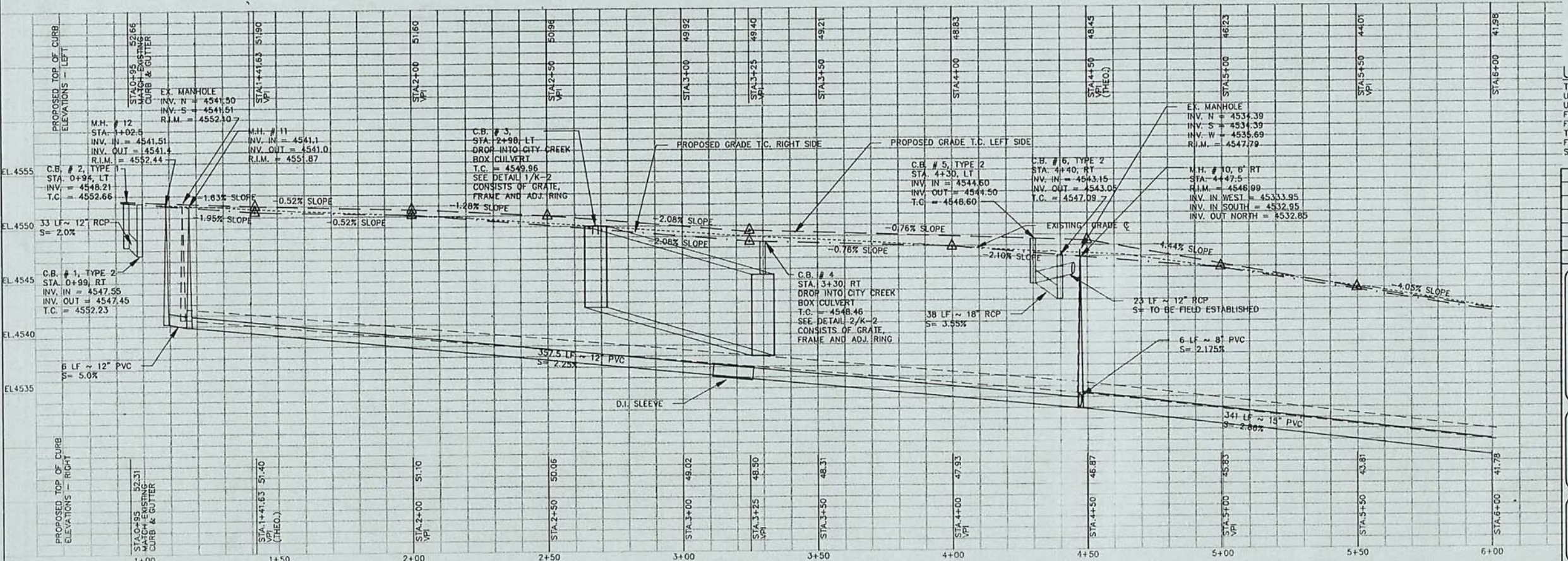
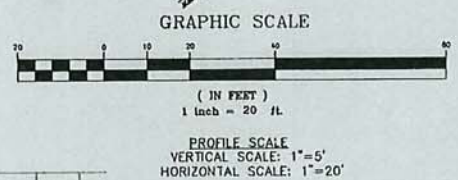
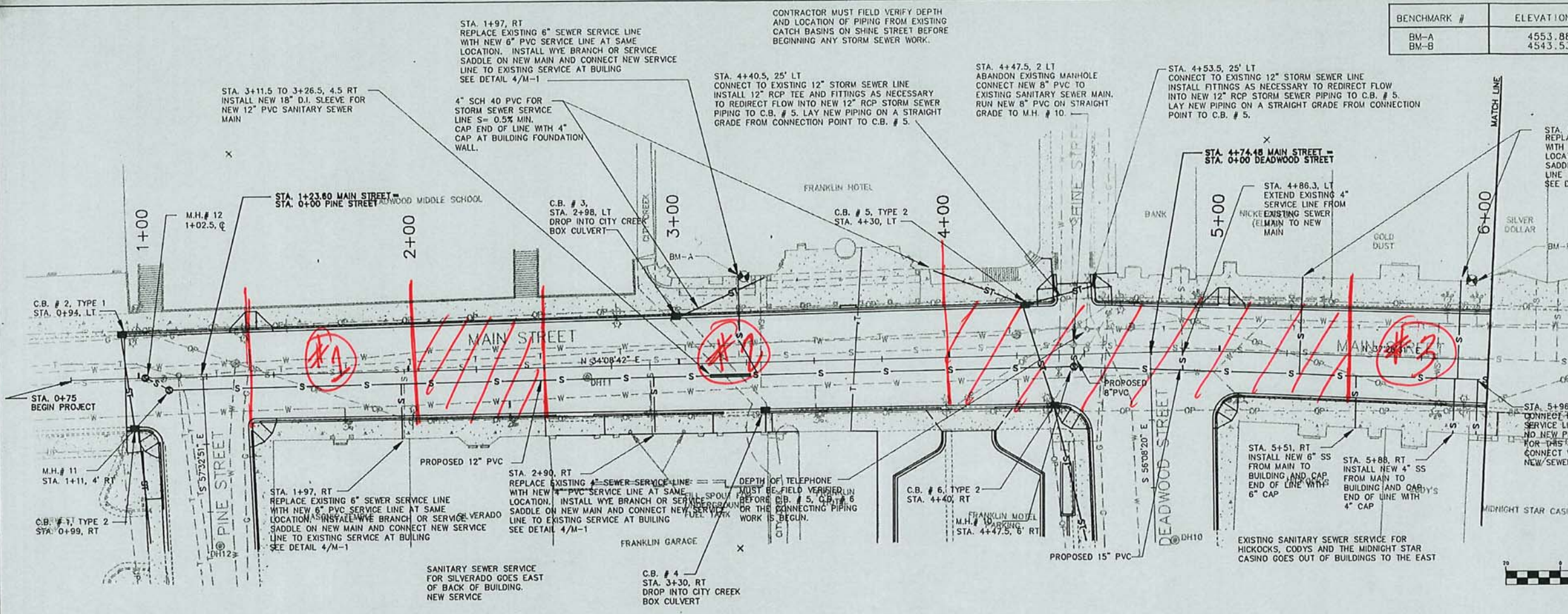
Project No. 02902059
 Drawn By SGL
 Checked By KK
 Date 05/15/91
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E-1

DEADWOOD MAIN STREET
 TYPICAL STREET SECTIONS
 STA. 0+00 TO 24+74.70

CONTRACTOR MUST FIELD VERIFY DEPTH AND LOCATION OF PIPING FROM EXISTING CATCH BASINS ON SHINE STREET BEFORE BEGINNING ANY STORM SEWER WORK.

BENCHMARK #	ELEVATION	DESCRIPTION
BM-A	4553.88	FRANKLIN FIRE PLUG
BM-B	4543.53	SILVER DOLLAR FIRE PLUG



UTILITY LOCATION NOTE
THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES ARE SHOWN AS LOCATED BY EACH UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL UNDERGROUND UTILITIES FIELD VERIFIED BEFORE ANY DIGGING BEGINS. THE CONTRACTOR WILL BE HELD FULLY RESPONSIBLE FOR ANY DAMAGE TO THE UNDERGROUND UTILITIES SHOULD HE FAIL TO HAVE THEM PROPERLY LOCATED.

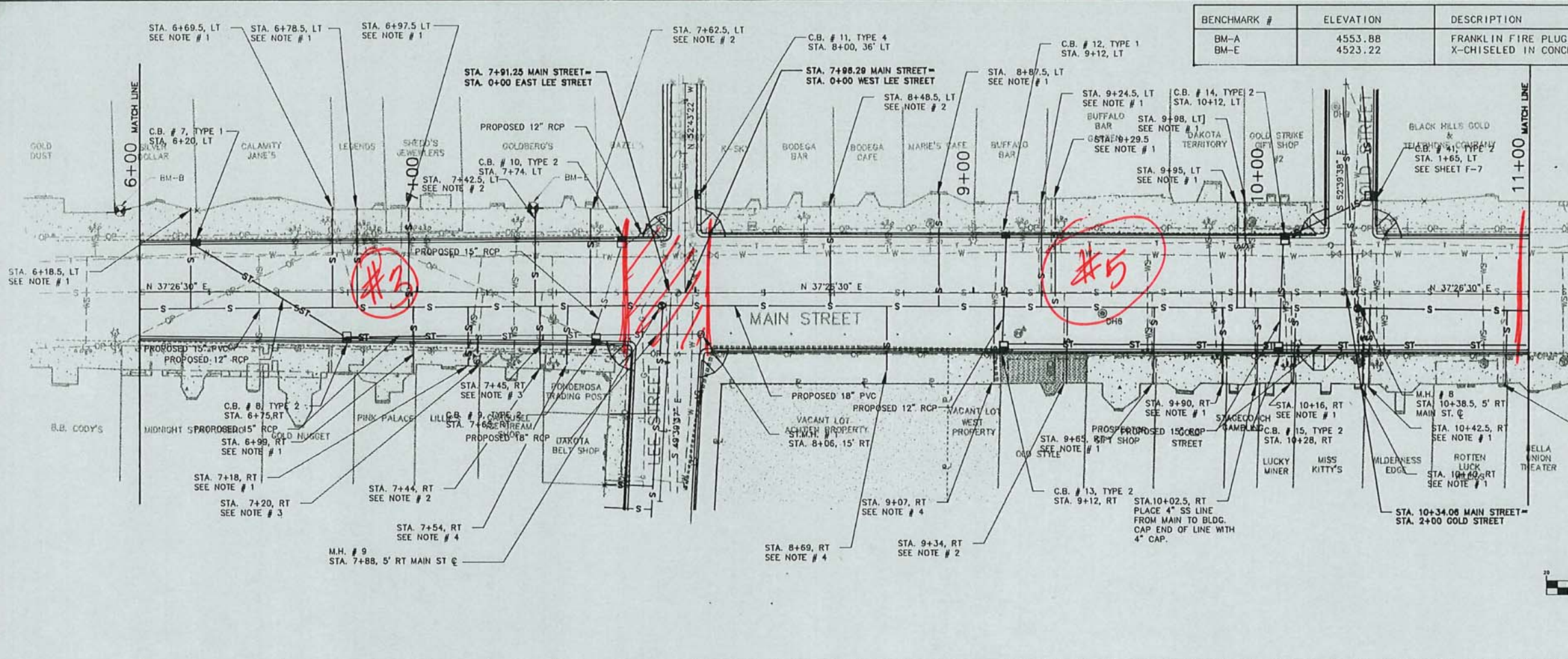
NO.	DATE	DESCRIPTION	BY

TSP
A Professional Design Group
TSP Two, Inc.
600 Kansas City St.
Rapid City, SD 57701
(605) 343-6102

Project No. 02902059
Drawn By: GMH
Checked By: RWS/KK
Date: 05/20/91
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DEADWOOD MAIN STREET
PLAN AND PROFILE
STA. 0+75 TO 6+00

BENCHMARK #	ELEVATION	DESCRIPTION
BM-A	4553.88	FRANKLIN FIRE PLUG
BM-E	4523.22	X-CHISELED IN CONCRETE FOUNDATION NORTH LIP GOLDDIGGERS'S #2

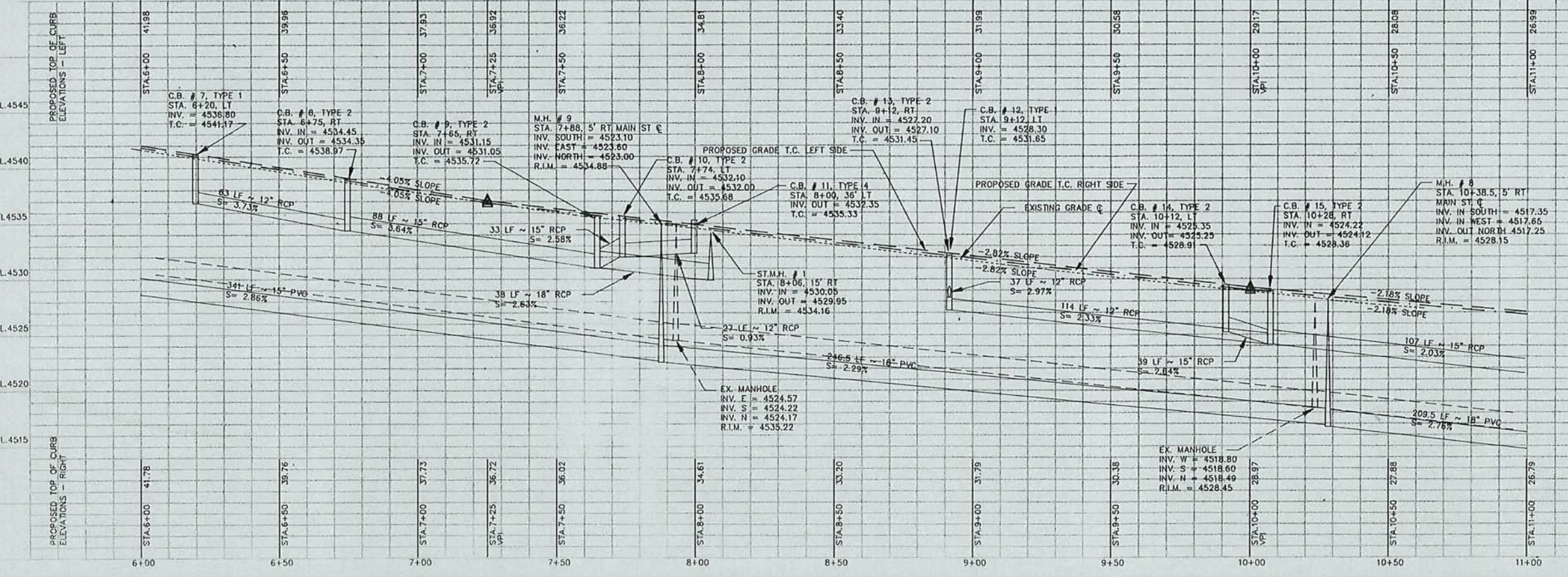


SANITARY SEWER NOTES

1. REPLACE EXISTING 4" SEWER SERVICE WITH NEW 4" PVC SERVICE LINE AT SAME LOCATION. INSTALL WYE BRANCH OR SERVICE SADDLE ON MAIN AND CONNECT NEW SERVICE LINE TO EXISTING LINE AT BUILDING. SEE DETAIL 4/M-1
2. REPLACE EXISTING 6" SEWER SERVICE WITH NEW 6" PVC SERVICE LINE AT SAME LOCATION. INSTALL WYE BRANCH OR SERVICE SADDLE ON MAIN AND CONNECT NEW SERVICE LINE TO EXISTING LINE AT BUILDING. SEE DETAIL 4/M-1
3. STORM SEWER SERVICE LINE. INSTALL 3 LF ~ OF 6" PVC AT S= 1.0%. CAP END OF LINE WITH 6" CAP AT BUILDING FOUNDATION WALL.
4. INSTALL NEW 4" SEWER SERVICE LINE FROM MAIN TO SIDEWALK BASEMENT WALL. SEE DETAIL 4/M-1


GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft

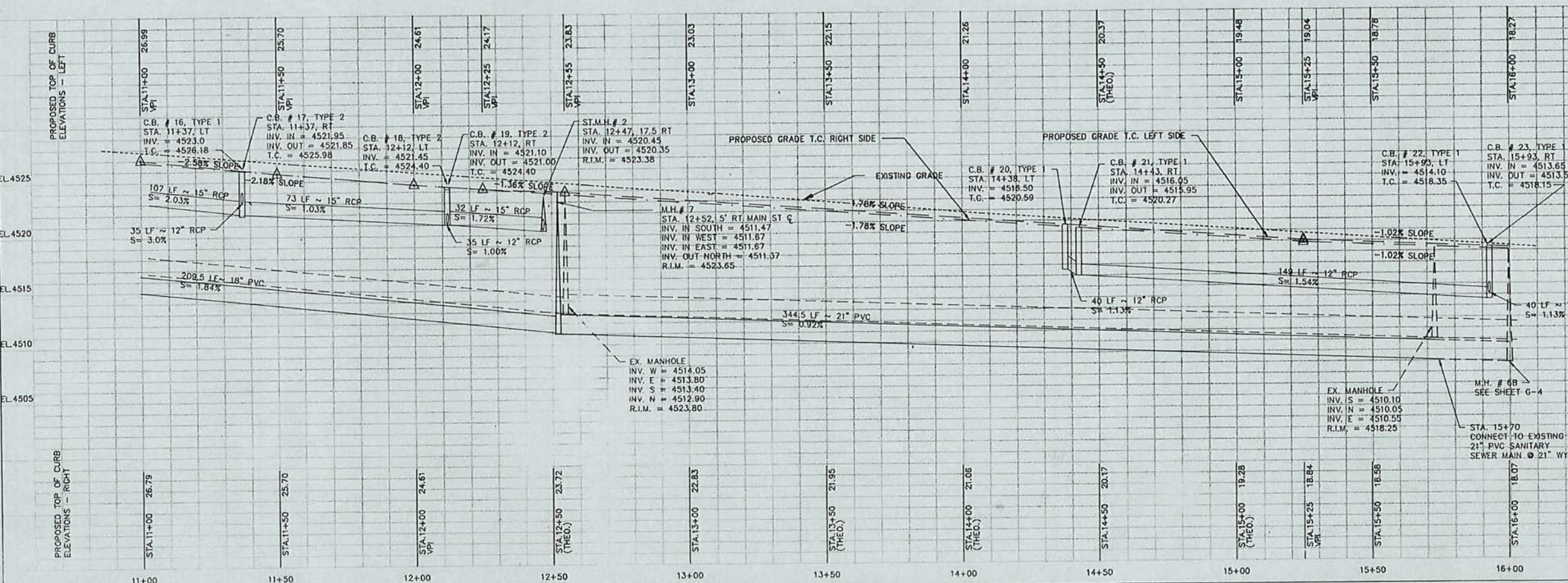
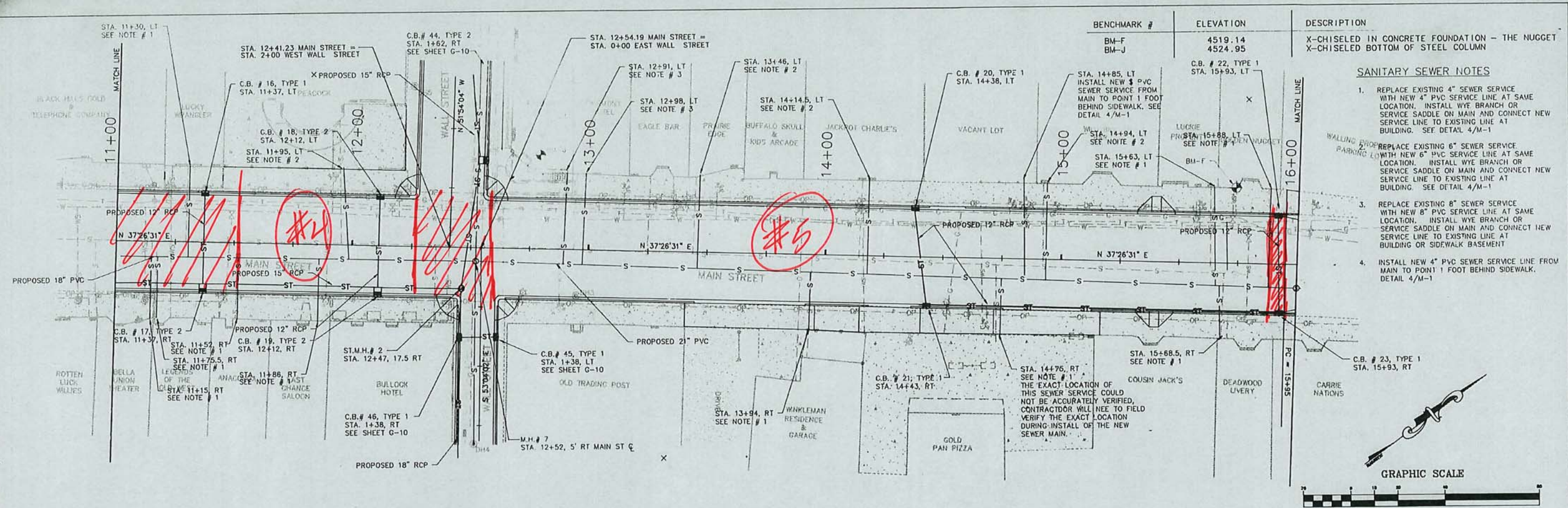
PROFILE SCALE
VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=20'



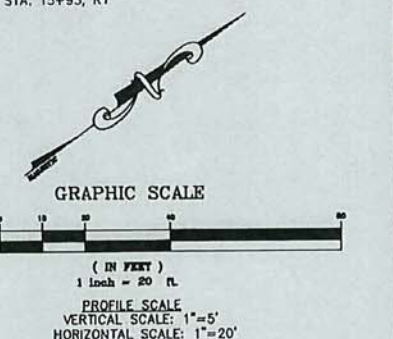
UTILITY LOCATION NOTE

THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES ARE SHOWN AS LOCATED BY EACH UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL UNDERGROUND UTILITIES FIELD VERIFIED BEFORE ANY DIGGING BEGINS. THE CONTRACTOR WILL BE HELD FULLY RESPONSIBLE FOR ANY DAMAGE TO THE UNDERGROUND UTILITIES SHOULD HE FAIL TO HAVE THEM PROPERLY LOCATED.

NO.	DATE	DESCRIPTION	BY
 A Professional Design Group			
TSP Two, Inc. 600 Kansas City St. Rapid City, SD 57701 (605) 343-6102			
Project No. 02902059 Drawn By: GMH Checked By: RWK/KK Date: 05/20/91 Copyright © 1991		F-2	
DEADWOOD MAIN STREET PLAN AND PROFILES STA. 6+00 TO 11+00			



- ### SANITARY SEWER NOTES
1. REPLACE EXISTING 4" SEWER SERVICE WITH NEW 4" PVC SERVICE LINE AT SAME LOCATION. INSTALL WYE BRANCH OR SERVICE SADDLE ON MAIN AND CONNECT NEW SERVICE LINE TO EXISTING LINE AT BUILDING. SEE DETAIL 4/M-1
 2. REPLACE EXISTING 6" SEWER SERVICE WITH NEW 6" PVC SERVICE LINE AT SAME LOCATION. INSTALL WYE BRANCH OR SERVICE SADDLE ON MAIN AND CONNECT NEW SERVICE LINE TO EXISTING LINE AT BUILDING. SEE DETAIL 4/M-1
 3. REPLACE EXISTING 8" SEWER SERVICE WITH NEW 8" PVC SERVICE LINE AT SAME LOCATION. INSTALL WYE BRANCH OR SERVICE SADDLE ON MAIN AND CONNECT NEW SERVICE LINE TO EXISTING LINE AT BUILDING OR SIDEWALK BASEMENT
 4. INSTALL NEW 4" PVC SEWER SERVICE LINE FROM MAIN TO POINT 1 FOOT BEHIND SIDEWALK. DETAIL 4/M-1



UTILITY LOCATION NOTE
THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES ARE SHOWN AS LOCATED BY EACH UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL UNDERGROUND UTILITIES FIELD VERIFIED BEFORE ANY DIGGING BEGINS. THE CONTRACTOR WILL BE HELD FULLY RESPONSIBLE FOR ANY DAMAGE TO THE UNDERGROUND UTILITIES SHOULD HE FAIL TO HAVE THEM PROPERLY LOCATED.

NO.	DATE	DESCRIPTION	BY

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A Professional Design Group

TSP Two, Inc.
600 Kansas City St.
Rapid City, SD 57701
(605) 343-6102

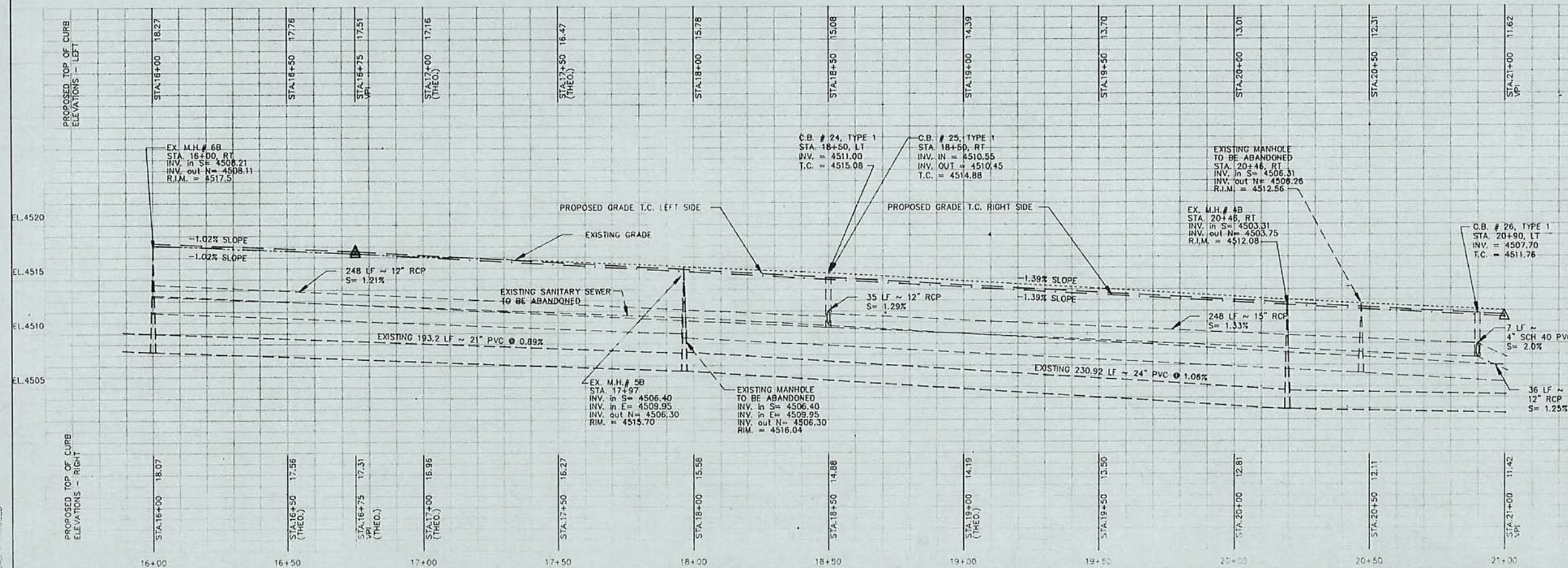
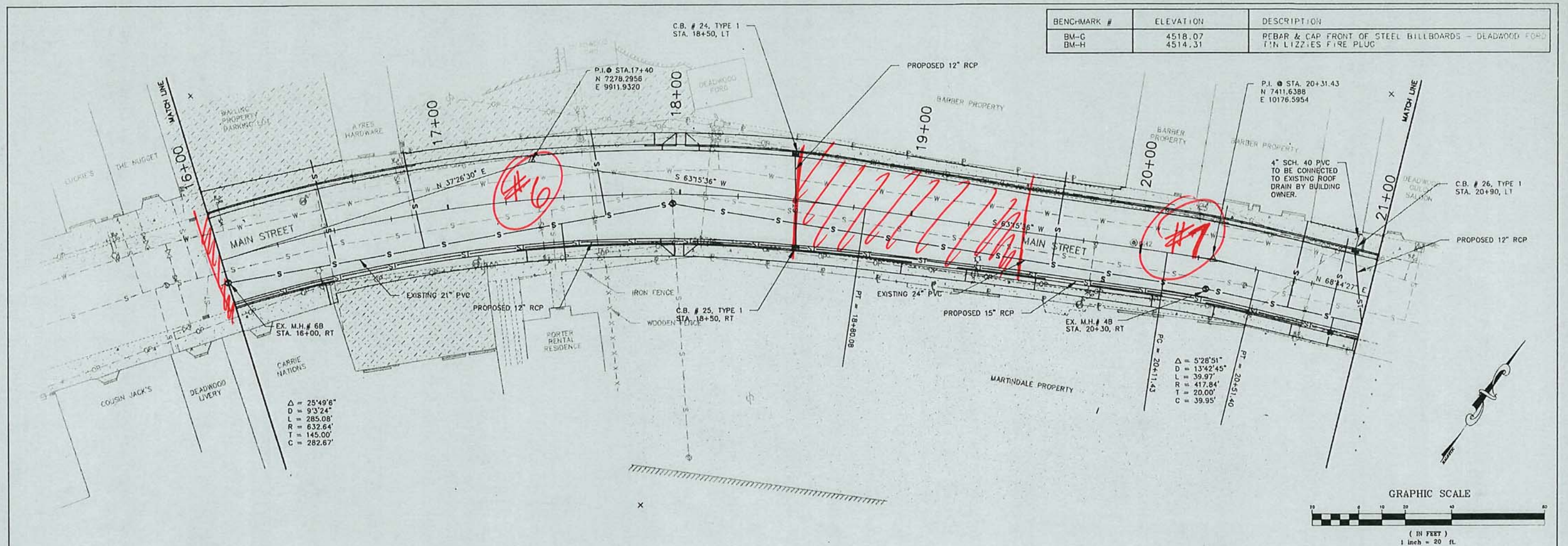
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F-3

DEADWOOD MAIN STREET

PLAN AND PROFILES
STA. 11+00 TO 16+00

BENCHMARK #	ELEVATION	DESCRIPTION
BM-G	4518.07	REBAR & CAP FRONT OF STEEL BILLBOARDS - DEADWOOD FORD
BM-H	4514.31	TIN LIZZIES FIRE PLUG



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

UTILITY LOCATION NOTE
 THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES ARE SHOWN AS LOCATED BY EACH UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL UNDERGROUND UTILITIES FIELD VERIFIED BEFORE ANY DIGGING BEGINS. THE CONTRACTOR WILL BE HELD FULLY RESPONSIBLE FOR ANY DAMAGE TO THE UNDERGROUND UTILITIES SHOULD HE FAIL TO HAVE THEM PROPERLY LOCATED.

NO.	DATE	DESCRIPTION	BY

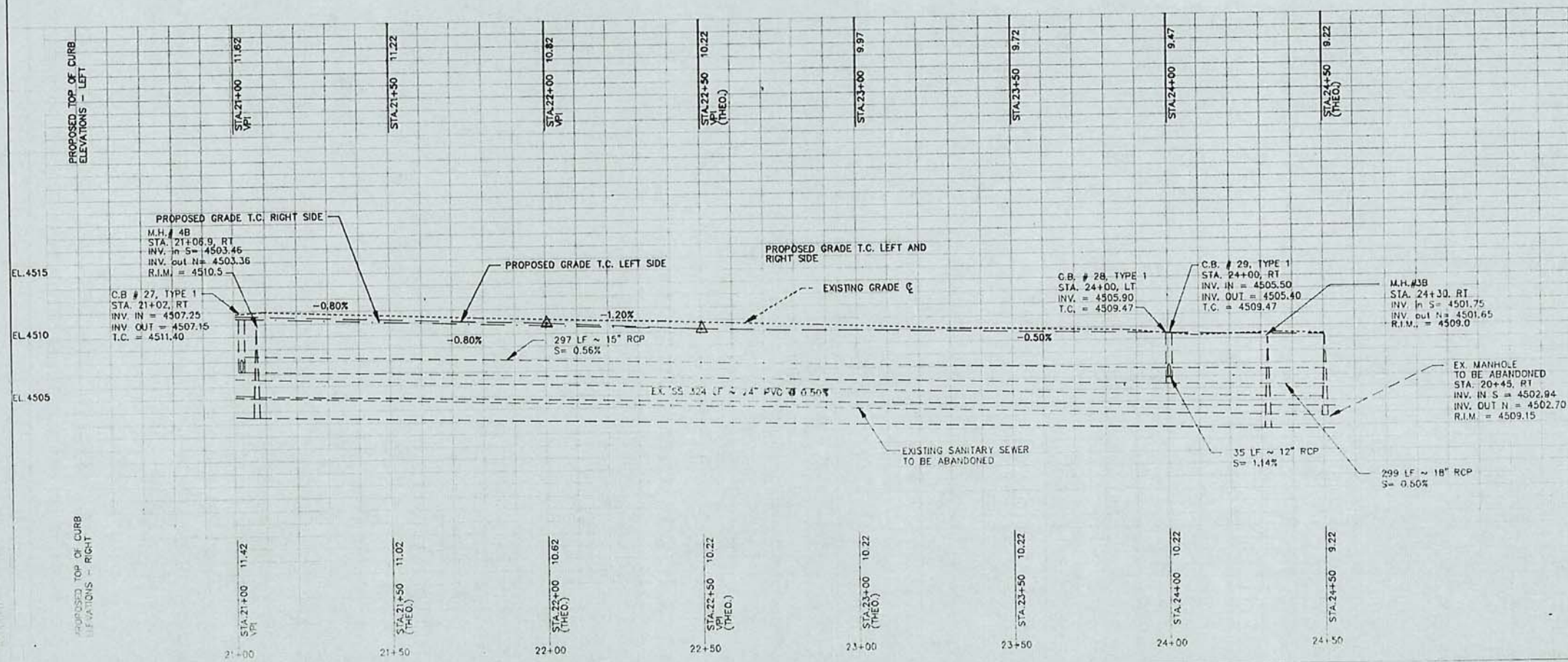
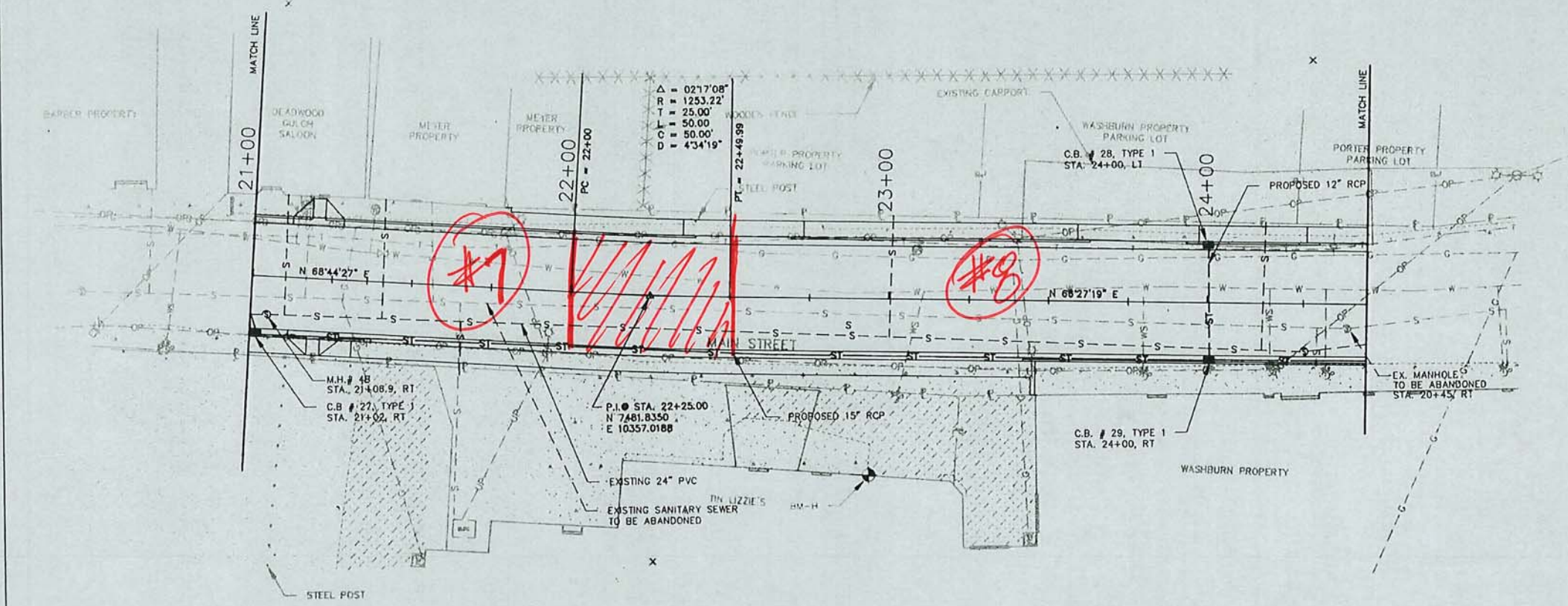
TSP
 A Professional Design Group
 TSP Two, Inc.
 600 Kansas City St.
 Rapid City, SD 57701
 (605) 343-6102

Project No. 02902059
 Drawn By: GMH
 Checked By: RWK/KK
 Date: 05/20/91
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DEADWOOD MAIN STREET
PLAN AND PROFILES
STA. 16+00 TO 21+00


F-4

BENCHMARK #	ELEVATION	DESCRIPTION
BM-G	4518.07	REBAR & CAP FRONT OF STEEL BILLBOARDS - DEADWOOD FORD
BM-H	4514.31	TIN LIZZIES FIRE PLUG



UTILITY LOCATION NOTE
 THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES ARE SHOWN AS LOCATED BY EACH UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL UNDERGROUND UTILITIES FIELD VERIFIED BEFORE ANY DIGGING BEGINS. THE CONTRACTOR WILL BE HELD FULLY RESPONSIBLE

NO.	DATE	DESCRIPTION	BY



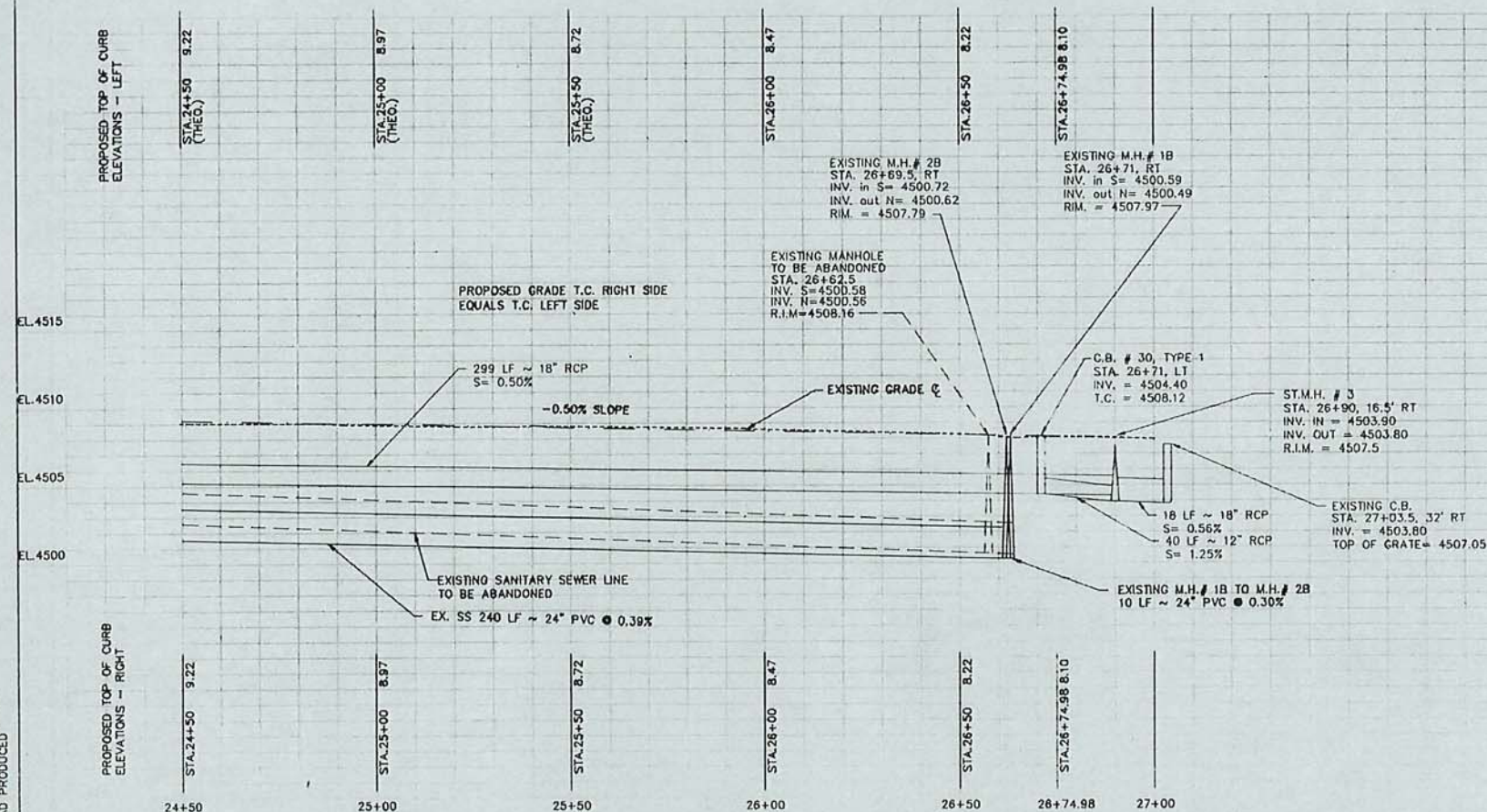
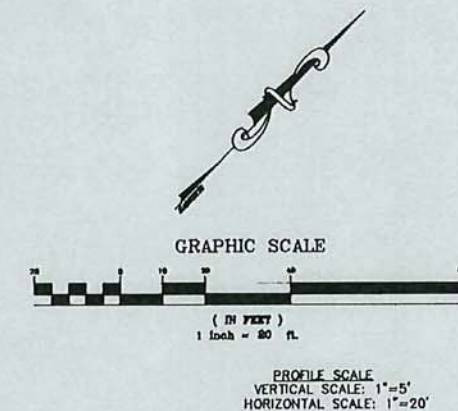
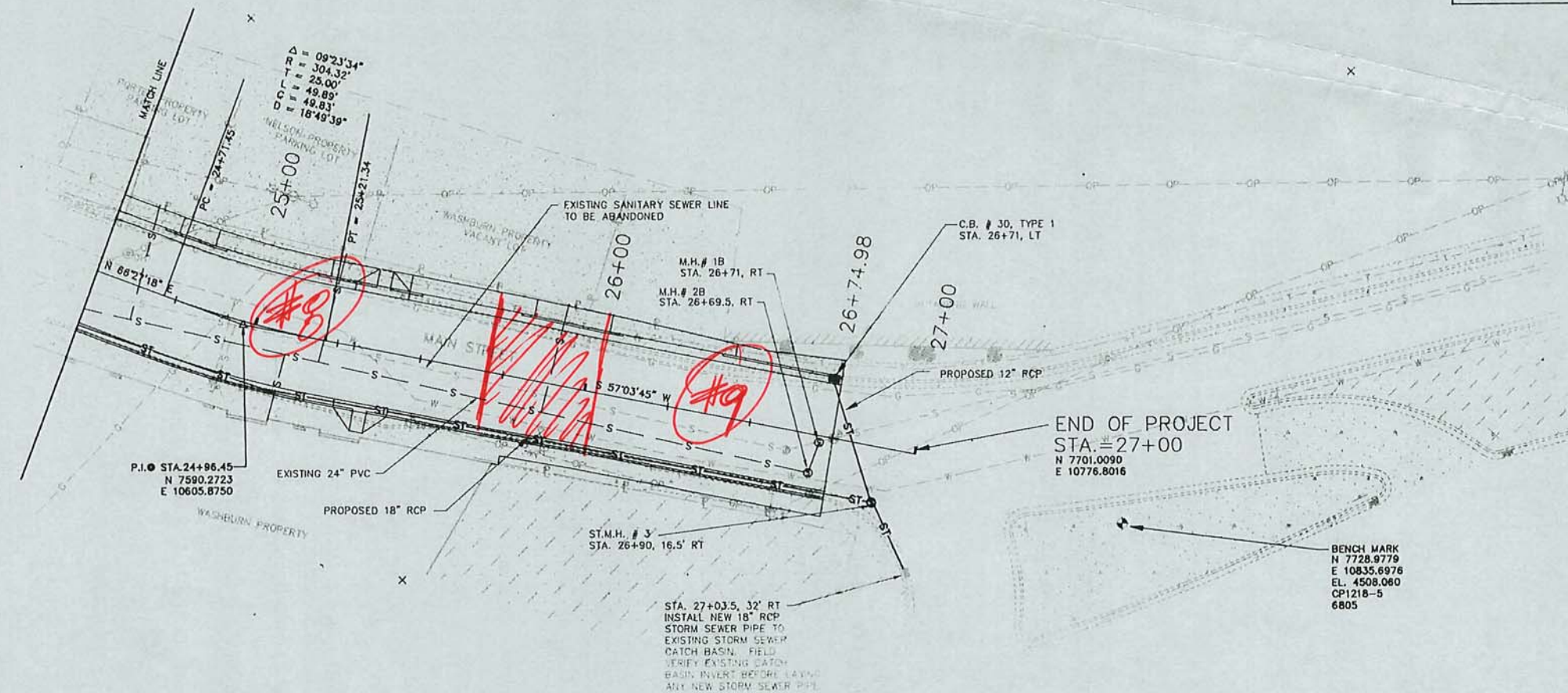
TSP
A Professional Design Group

TSP Two, Inc.
600 Kansas City St.
Rapid City, SD 57701
(605) 343-6102

Project No. 02802059	F-5
Drawn By CMH	
Checked By RWK/KK	
Date 05/20/91	
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DEADWOOD MAIN STREET
 PLAN AND PROFILES
 STA. 21+00 TO 24+50

BENCHMARK #	ELEVATION	DESCRIPTION
BM-G	4518.07	REBAR & CAP FRONT OF STEEL BILLBOARDS - DEADWOOD FORD
BM-H	4514.31	TIN LIZZIES FIRE PLUG
BM-I	4543.74	WEST FLANGE BOLT FIRE HYDRANT DEADWOOD & US 14



UTILITY LOCATION NOTE
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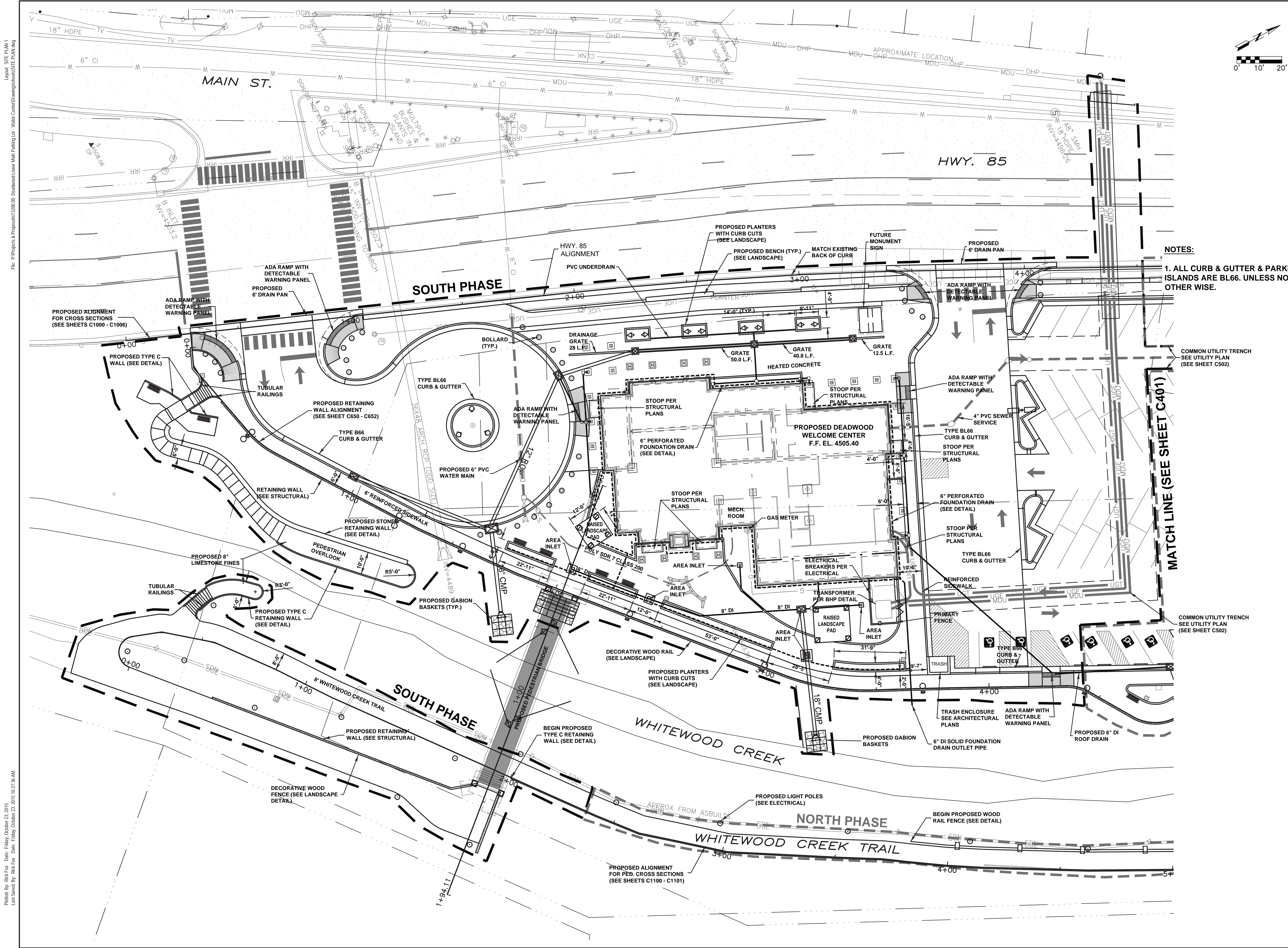
NO.	DATE	DESCRIPTION	BY

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TSP Two, Inc.
600 Kansas City St.
Rapid City, SD 57701
(605) 343-6102

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Checked By RWH/KK
Date 05/20/91
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F-6


DEADWOOD MAIN STREET
PLAN AND PROFILES
STA. 24+50 TO 27+00




CHAMBERLIN
ARCHITECTS
ENHANCING EVERYDAY LIVING THROUGH DESIGN

CHAMBERLIN ARCHITECTS
725 Saint Joseph St., Suite B1
Rapid City, South Dakota 57701
T 605.355.6804

www.chamberlinarchitects.com


1560 Concourse Drive
Rapid City, SD 57703
Phone: (605) 341-7800
Fax: (605) 341-7864
www.ae2s.com



DEADWOOD
LOWER MAIN
PARKING LOT &
WELCOME CENTER

DEADWOOD, SOUTH DAKOTA

SITE PLAN

NO: ISSUED FOR: DATE:

PROJECT STATUS: 100%
DESIGN DEVELOPMENT

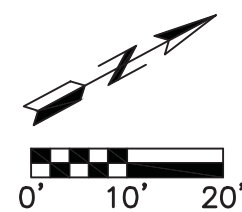
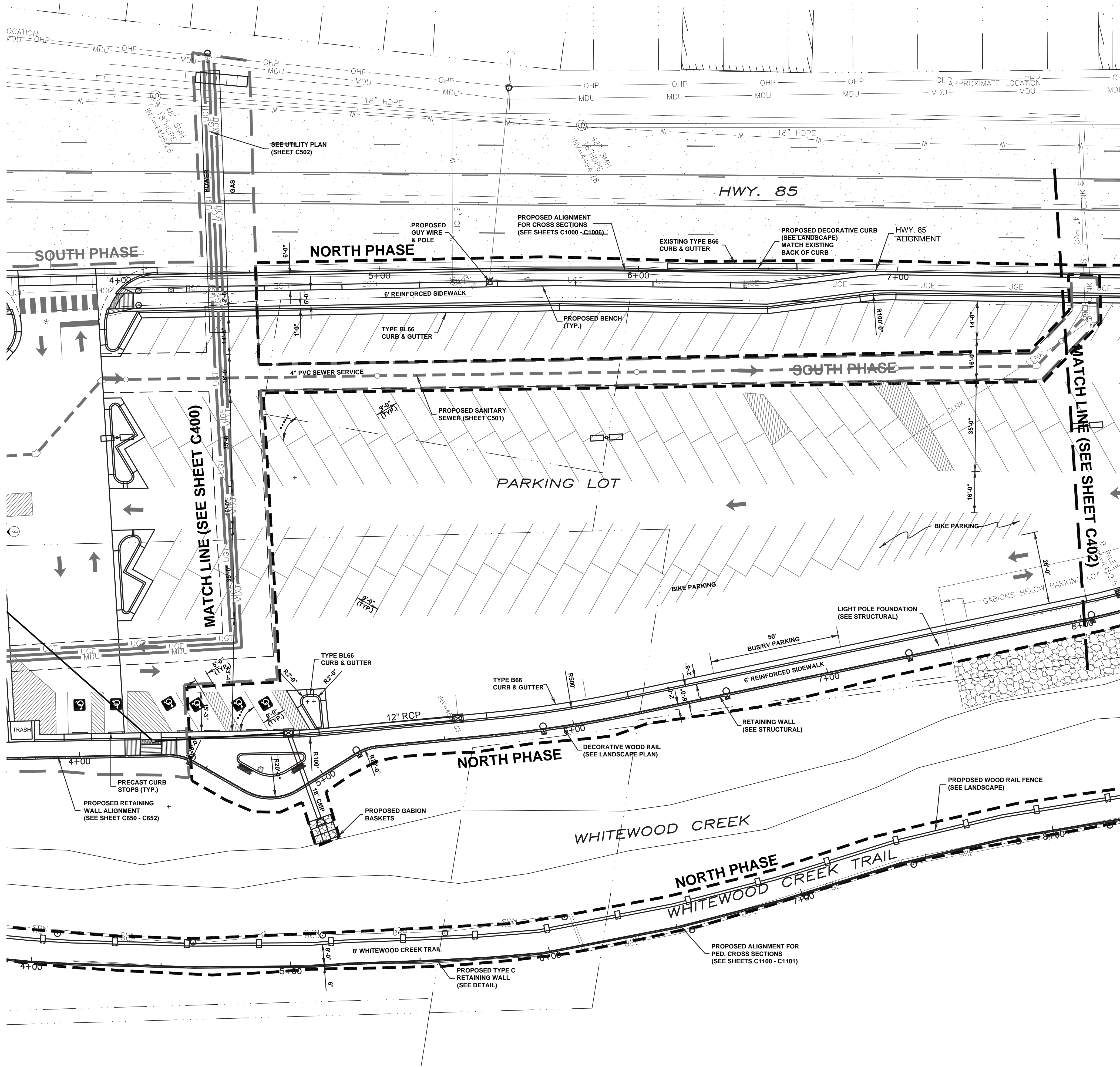
DRAWN BY: RF/IG CHECKED BY: TS

DATE: 10/19/15 SHEET NO:

PROJECT NO: C400

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Printed By: Rbf Fox Date: Friday, October 23, 2015
Last Saved By: Rbf Fox Date: Friday, October 23, 2015 10:37:39 AM



NOTES:
1. ALL CURB & GUTTER & PARKING ISLANDS ARE BL66. UNLESS NOTED OTHERWISE.

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ARCHITECTS
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Rapid City, SD 57703
Phone: (605) 341-7800
Fax: (605) 341-7864
www.ae2s.com



DEADWOOD LOWER MAIN PARKING LOT & WELCOME CENTER

DEADWOOD, SOUTH DAKOTA

SITE PLAN

NO: ISSUED FOR: DATE:



PROJECT STATUS: 100%
DESIGN DEVELOPMENT

DRAWN BY: RFIG CHECKED BY: TS

DATE:

10/19/15

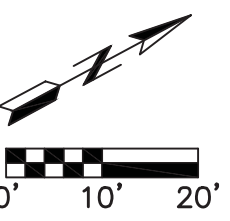
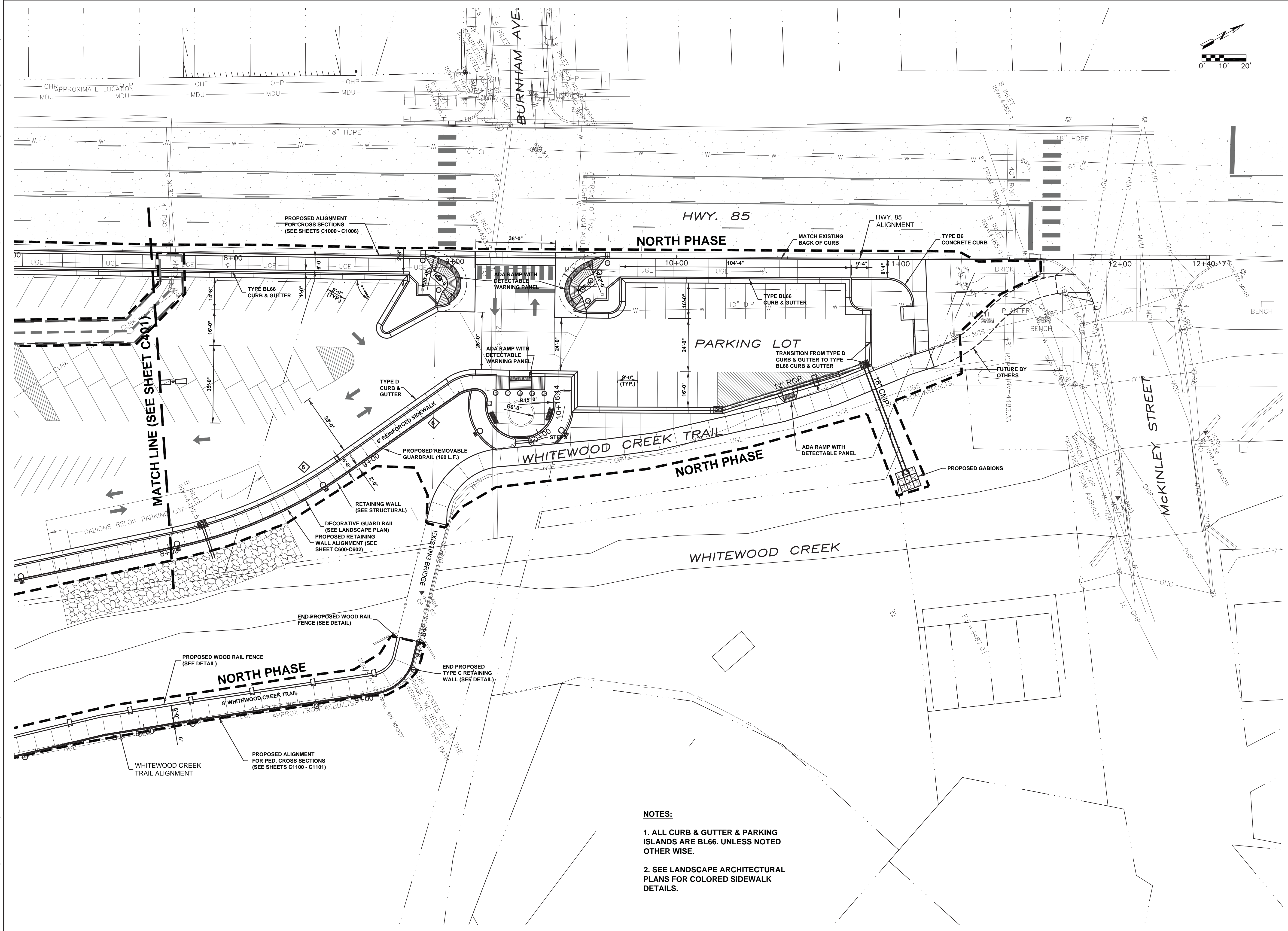
SHEET NO:

PROJECT NO:

C401

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Rapid City, SD 57703
Phone: (605) 341-7800
Fax: (605) 341-7864
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DEADWOOD LOWER MAIN PARKING LOT & WELCOME CENTER

DEADWOOD, SOUTH DAKOTA

SITE PLAN

NO: ISSUED FOR: DATE:

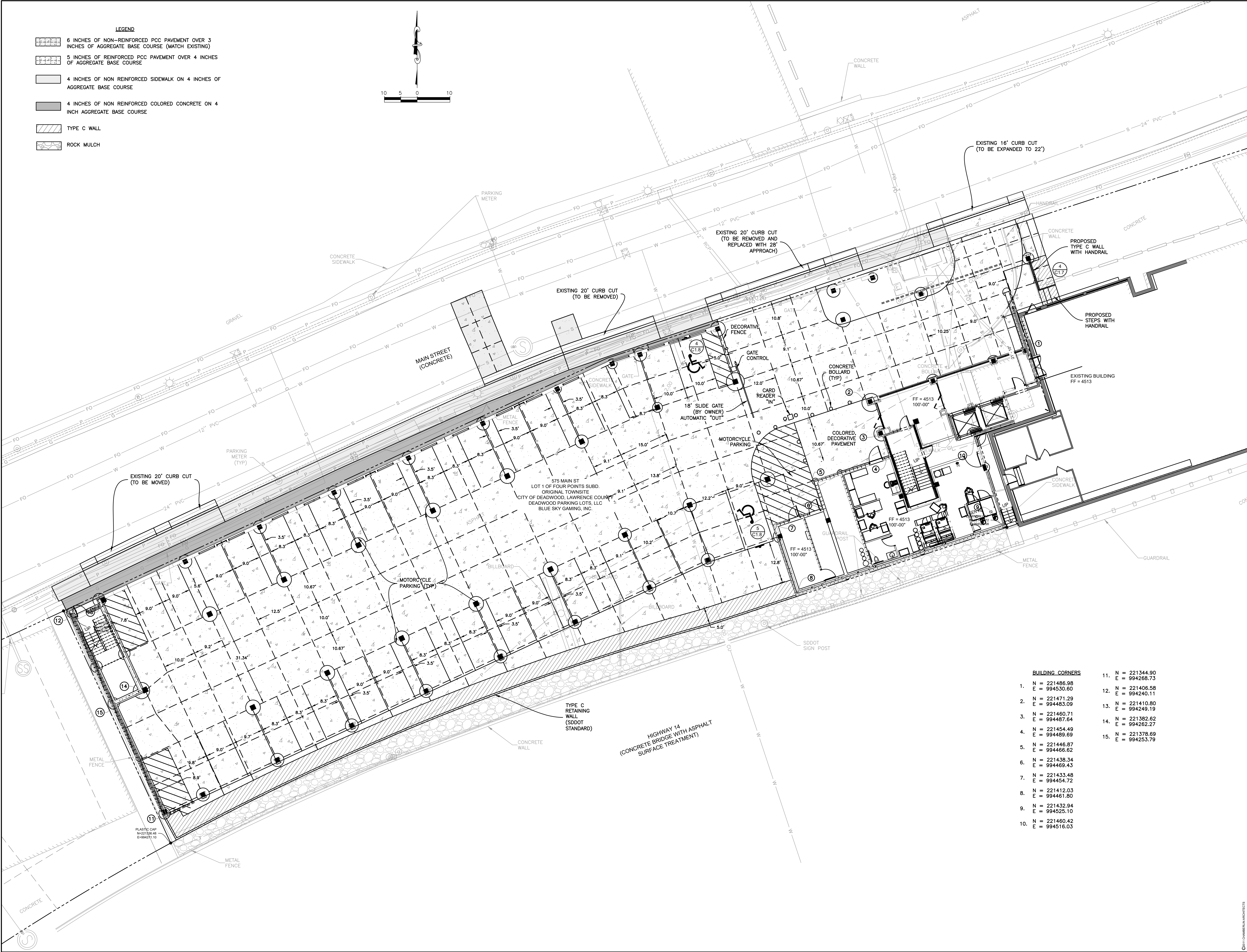


PROJECT STATUS: 100%
DESIGN DEVELOPMENT

DRAWN BY: RFG CHECKED BY: TS

DATE:
10/19/15 SHEET NO:

PROJECT NO: **C402**



LEGEND

- 6 INCHES OF NON-REINFORCED PCC PAVEMENT OVER 3 INCHES OF AGGREGATE BASE COURSE (MATCH EXISTING)
- 5 INCHES OF REINFORCED PCC PAVEMENT OVER 4 INCHES OF AGGREGATE BASE COURSE
- 4 INCHES OF NON REINFORCED SIDEWALK ON 4 INCHES OF AGGREGATE BASE COURSE
- 4 INCHES OF NON REINFORCED COLORED CONCRETE ON 4 INCH AGGREGATE BASE COURSE
- TYPE C WALL
- ROCK MULCH

BUILDING CORNERS

- | | |
|------------------------------------|------------------------------------|
| 1. N = 221486.98
E = 994530.60 | 11. N = 221344.90
E = 994268.73 |
| 2. N = 221471.29
E = 994483.09 | 12. N = 221406.58
E = 994240.11 |
| 3. N = 221460.71
E = 994487.64 | 13. N = 221410.80
E = 994249.19 |
| 4. N = 221454.49
E = 994489.69 | 14. N = 221382.62
E = 994262.27 |
| 5. N = 221446.87
E = 994486.62 | 15. N = 221378.69
E = 994253.79 |
| 6. N = 221438.34
E = 994469.43 | |
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| 8. N = 221412.03
E = 994461.80 | |
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E = 994525.10 | |
| 10. N = 221460.42
E = 994516.03 | |

CHAMBERLAIN
ARCHITECTS

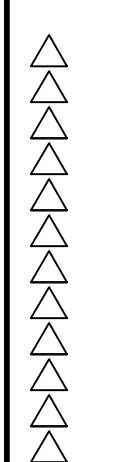


NOT FOR
CONSTRUCTION

OWNER:
Deadwood Hotels LLC
502 W. BLVD
RAPID CITY, SD 57701

HILTON
PROJECT
NUMBER:
12224

NEW HOTEL FOR:
Four Points
DEADWOOD, SD 57732



SITE LAYOUT

DATE:
3/27/19
JOB NUMBER:
18-162
SHEET
C1.4

ASPHALT
PARKING AREA

SIDEWALK

NOTE:
ADJUST LOCATION OF SIDEWALK AROUND
POSTS--SEE ARCH DWGS. NEW SIDEWALK
TO MATCH (E) THICKNESS, REINFORCE
W/#4 REBAR @ 12" C.C.

(2) 16"x16" POST
36"x26" CONC PIER
TOP 4507.00

(2) 16"x16" POST
36"x26" CONC PIER
TOP 4507.00

BACK OF
CURB

FOUNDATION PLAN
SCALE: 1/4"=1'-0"

PLAN NOTES

- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO VERIFY LOCATION OF UTILITIES NEAR FOUNDATIONS PRIOR TO ORDERING STEEL. LOCATION OF FOOTING TO BE COORDINATED WITH UTILITIES. CONTACT OWNER IF SITE CONDITIONS DIFFER FROM LOCATION SHOWN ON PLANS.
- OBTAIN ANY AND ALL NECESSARY PERMITS FROM THE CITY OF DEADWOOD.
- CONSTRUCTION TO BE COMPLETED WITHIN 90 DAYS OF START OF CONSTRUCTION. LIQUIDATED DAMAGES IN THE AMOUNT OF \$250 PER DAY WILL BE ASSESSED FOR EACH DAY PAST THE 90 DAY LIMIT IN WHICH CONSTRUCTION IS NOT COMPLETED.
- THERE WILL BE A PERIOD FROM JULY 21 TO AUGUST 9 WHERE THERE WILL BE A STOPPAGE IN CONSTRUCTION WORK DUE TO CITY EVENTS.
- CONSTRUCTION STORAGE IS AVAILABLE ON RAILROAD STREET. CONTRACTOR TO COORDINATE WITH OWNER.
- CONTRACTOR TO COORDINATE CLOSURE OF MAIN STREET WITH THE CITY. MAIN STREET MAY NOT BE CLOSED FOR MORE THAN 3 CONSECUTIVE DAYS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL OVERHEAD AND UNDERGROUND UTILITIES AND TAKING ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGING ALL UTILITIES.
- CONTRACTOR TO VERIFY 17'-0" CLEARANCE FROM ROAD TO BOTTOM OF SIGN. CONTRACTOR TO NOTIFY OWNER IF SITE CONDITIONS DIFFER FROM PLAN.
- SOD ALL DISTURBED AREAS OF GRASS OR REPLACE DAMAGED PLANTINGS.

FOOTING SCHEDULE

MARK	SIZE	REINFORCING	REMARKS
(A)	3'-6" x 7'-0" x 1'-0"	(4) #6 LONG / (8) #6 SHORT	TOP & BOTTOM



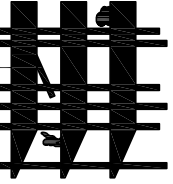
NO.	DATE	REVISIONS	DATE

2015-160

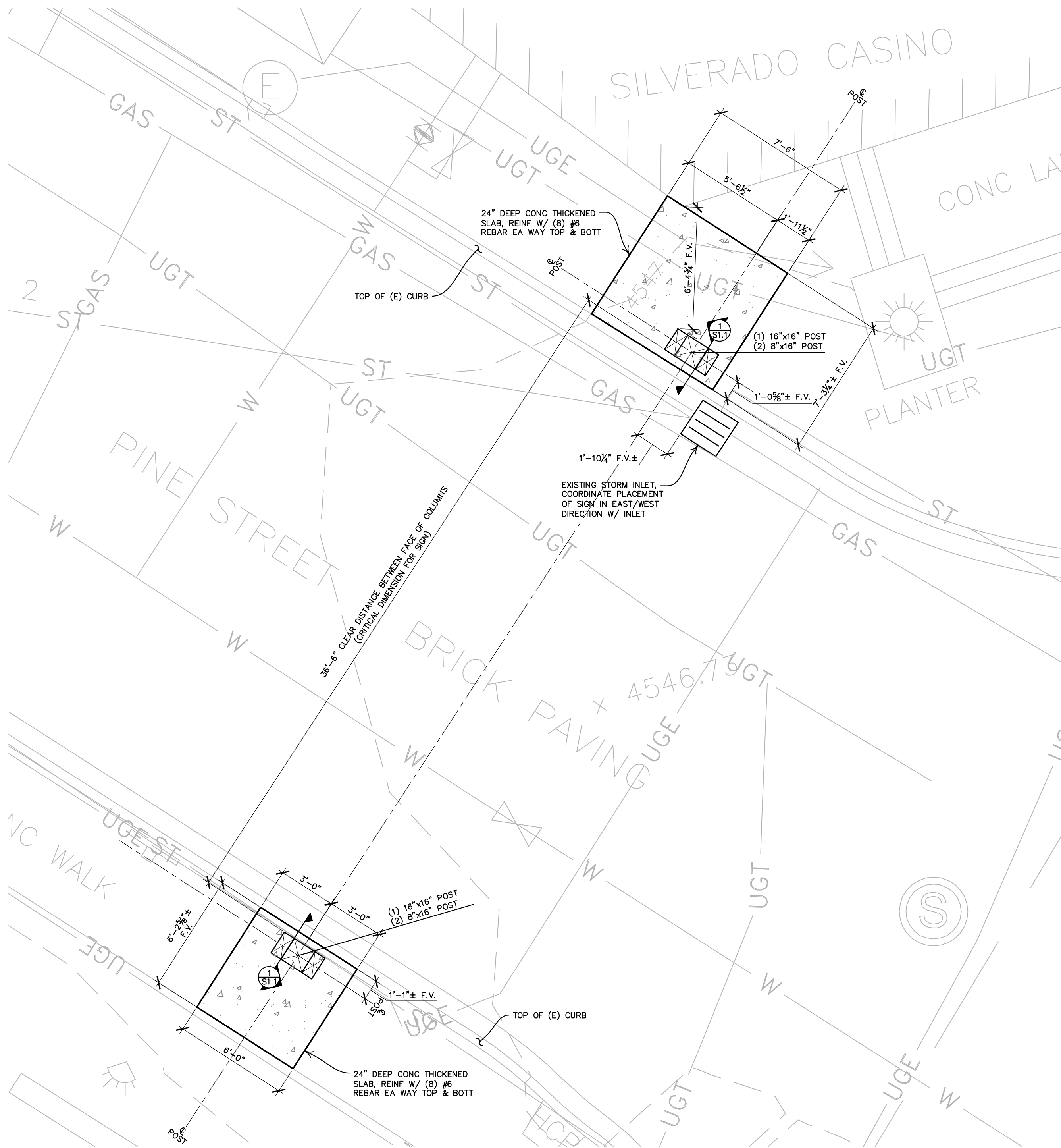
3202 W. MAIN, SUITE C
RAPID CITY, SOUTH DAKOTA 57702
605.343.9606
Albertson Engineering Inc.

LOWER MAIN ARCHWAY
DEADWOOD, SOUTH DAKOTA

DATE: 05-29-2015
DRAWN BY: JAB
SHEET TITLE: FOUNDATION PLAN

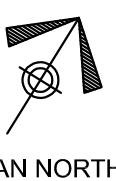


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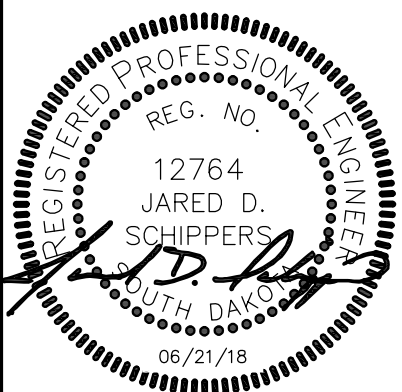


PLAN NOTES

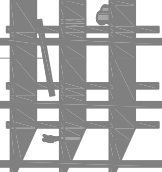
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO VERIFY LOCATION OF UTILITIES NEAR FOUNDATIONS PRIOR TO ORDERING STEEL. LOCATION OF FOOTING TO BE COORDINATED WITH UTILITIES. CONTACT OWNER IF SITE CONDITIONS DIFFER FROM LOCATION SHOWN ON PLANS.
- OBTAIN ANY AND ALL NECESSARY PERMITS FROM THE CITY OF DEADWOOD.
- CONSTRUCTION TO BE COMPLETED WITHIN 90 DAYS OF START OF CONSTRUCTION. LIQUIDATED DAMAGES IN THE AMOUNT OF \$100 PER DAY WILL BE ASSESSED FOR EACH DAY PAST THE 90 DAY LIMIT IN WHICH CONSTRUCTION IS NOT COMPLETED.
- CONTRACTOR TO MAINTAIN FULL ACCESS ON PINE STREET.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL OVERHEAD AND UNDERGROUND UTILITIES AND TAKING ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGING ALL UTILITIES.
- CONTRACTOR TO VERIFY 17'-0" CLEARANCE FROM ROAD TO BOTTOM OF SIGN. CONTRACTOR TO NOTIFY OWNER IF SITE CONDITIONS DIFFER FROM PLAN.
- SOD ALL DISTURBED AREAS OF GRASS OR REPLACE DAMAGED PLANTINGS.
- F.V. = FIELD VERIFY BY CONTRACTOR.
- BACKGROUND SHOWN IS SURVEY PRODUCED BY ARLETH DATED APRIL 16, 2018.



FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



3202 W. MAIN, SUITE C
RAPID CITY, SOUTH DAKOTA 57702
605.343.9606



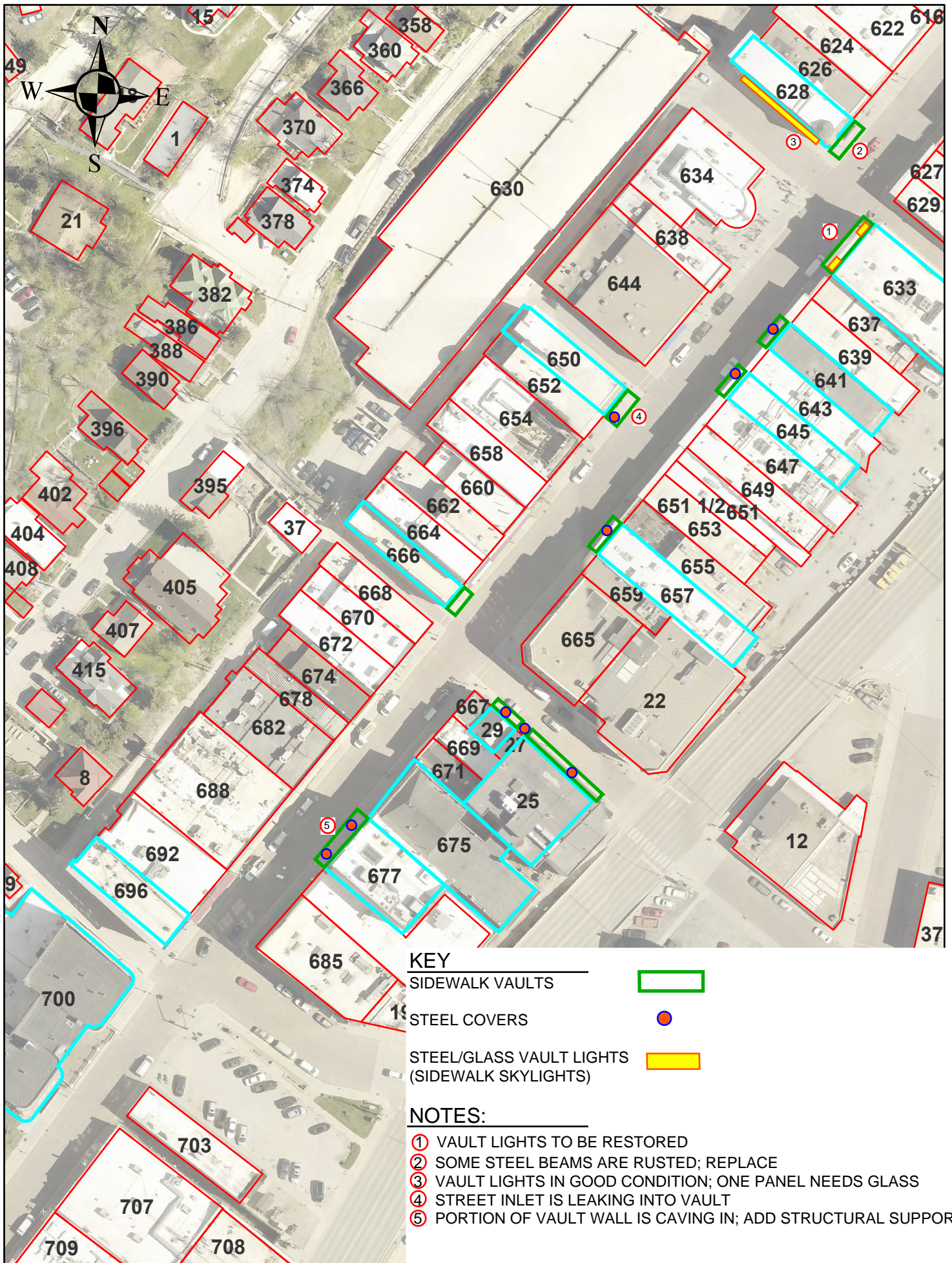
Albertson Engineering Inc.

S1.0

REVISIONS:	NO.	DATE:	NO.	DATE:

COMM. NO.: 2018-230
CADD FILE:

UPPER MAIN ST. ARCHWAY
DEADWOOD, SOUTH DAKOTA
DATE: 06-21-2018
DRAWN BY: JAB
SHEET TITLE: FOUNDATION PLAN



Appendix C - Phase 1 Cost Estimate Summary, Product Sheets, Cost Quotes & Background Information

We developed “high level” cost estimates for as many of the improvement opportunities as possible in order to provide a range of potential costs to consider for future bond funding. Note that, the cost estimates do not take into consideration all of the design issues or vetted design decisions into account, and therefore these numbers vary widely. This is due to a variety of reasons including:

- Technical studies and investigations of existing conditions above and below ground have not been completed
- The Main Street Master Plan project will not be initiated until after the cost estimates have been developed
- The design assumptions are preliminary
- The scope of work and programming that are assumed have not been approved by the community
- State, national, and local jurisdictions have not provided formal approvals

In this section:

- Cost Summary
- Product Sheets & Estimates (These are preliminary products and estimates and do not imply any final Main Street design decisions.)

Jared D. Schippers, PE
Albertson Engineering Inc.
3202 W. Main Suite C
Rapid City, SD 57702
Office: (605) 343-9606

From: Julie Husband [mailto:julie@winterandcompany.net]
Sent: Thursday, November 15, 2018 4:23 PM
To: Brad Burns <bburns@chamberlinarchitects.com>
Cc: Bob Nelson Jr. <BobJr@cityofdeadwood.com>; John Van Beek
(JohnVanBeek@ferberengineering.com)
<johnvanbeek@ferberengineering.com>; Kevin Kuchenbecker
<kevin@cityofdeadwood.com>; Jared D. Schippers
<JaredS@albertsonengineering.com>; Marcia Klopf
<marcia.klopfgmail.com>; Noré Winter <nore@winterandcompany.net>
Subject: Re: Deadwood MS MP – Sidewalk Vaults

Thank you!!!

On Nov 15, 2018, at 3:14 PM, Brad Burns
<bburns@chamberlinarchitects.com> wrote:

Citrix Attachments
Expires May 14, 2019
20181114_125954.jpg
2.7 MB
20181114_130017.jpg
3.1 MB
20181114_130212.jpg
3.4 MB
20181114_130225.jpg
2.7 MB
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20181114_130748.jpg
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20181114_130845.jpg
2.3 MB
20181114_130852.jpg
2.7 MB
20181114_130925.jpg
2.3 MB

20181114_131005.jpg

2.3 MB

20181114_141058.jpg

2.9 MB

Main Street Sidewalk Vaults.pdf

2.3 MB

Download Attachments

Brad Burns uses Citrix Files to share documents securely.

Here are some notes from our sidewalk vault tour.

Jared – I don't know what you decided on the condition of some of them, so if you could mark it up, I can edit my notes.

Brad Burns, AIA, NCARB, LEED AP

CHAMBERLIN ARCHITECTS

GRAND JUNCTION, CO • RAPID CITY, SD

725 St. Joseph Street, Suite B1

Rapid City, SD 57701

Office (605) 355-6804

www.chamberlinarchitects.com

From: Julie Husband [mailto:julie@winterandcompany.net]

Sent: Tuesday, November 13, 2018 11:51 AM

To: Bob Nelson Jr.; John Van Beek (JohnVanBeek@ferberengineering.com); Kevin Kuchenbecker; Brad Burns; Jared D. Schippers (JaredS@albertsonengineering.com)

Cc: Marcia Klopff; Noré Winter

Subject: Deadwood Main ST Master Plan Meeting after Scull meeting NOV. 14

Hi!

Per the meeting on the Main St Master Plan Project after the Scull meeting tomorrow, please consider this email an Agenda. We will plan to discuss ADA compliance issues on Main Street, and then the city will conduct a tour of sidewalk basements/coal chutes with you. I'd like to include an assessment of a few of the light poles in this walk.

The light poles have some galvanic corrosion occurring where the poles mount to the base. We need to have an understanding of the extent of the corrosion. Will the shafts need to be replaced in their entirety, or is there a retrofit that can occur? I will be sending any images of these to the manufacturer so he can help us identify a solution and we can develop a estimate to address these.

Could someone please follow-up with the following documentation from the tour:

- Provide images of sidewalk basements/coal chutes. If you could identify sidewalk/coal chute image per property that would also be helpful. I have attached the map that shows locations (blue outline). We will be meeting with SHPO on Thursday the NOV 15th. It'd be nice to be able to show them a few of the sidewalk basements/coal chute conditions – highlighting the difference in covers, structural conditions of steel members and walls.
- Provide images of corroded light fixtures. Please let me know if the poles affected are only the 5-bulb fixtures, or does it also include the 3-bulb fixtures, so I can get my counts right. Kevin, per scope of fixtures, we're just looking at the Main Street area from Lower Main to Armory Street, and from Main to Pioneer/US14A. If this appears to be a city-wide issue should we be looking at including fixtures from other areas in the count?

Please note: these meeting and tour hours should be applied to existing conditions Phase 1A. This will be a new contract that draws from the Existing Conditions budget noted in Phase 2. Your work on cost estimates should be noted in Phase 1.

Thank you so much for all you're doing! Have a great day! Sunny here and the foot of snow we got Sunday is disappearing, but the Mtns. are holding the snow...it should be a good holiday skiseason!
Julie

<image001.jpg>

Julie Husband
Winter & Company
303.440.8445
www.winterandcompany.net

Our office address is:
1155 Alpine Avenue, Suite 260
Boulder, CO 80304

Our mailing address is:
3980 Broadway Street
Suite 103, PMB 140
Boulder, CO 80304

<Attachments.html>

Appendix B - Background Research for Main Street Master Plan

In this section:

- ADA Case Study
- Deadwood Bump-outs

CASE STUDIES

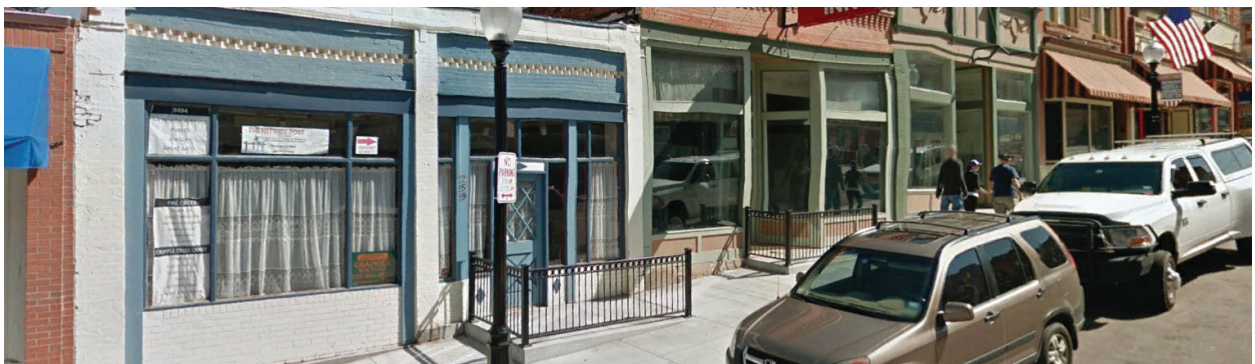
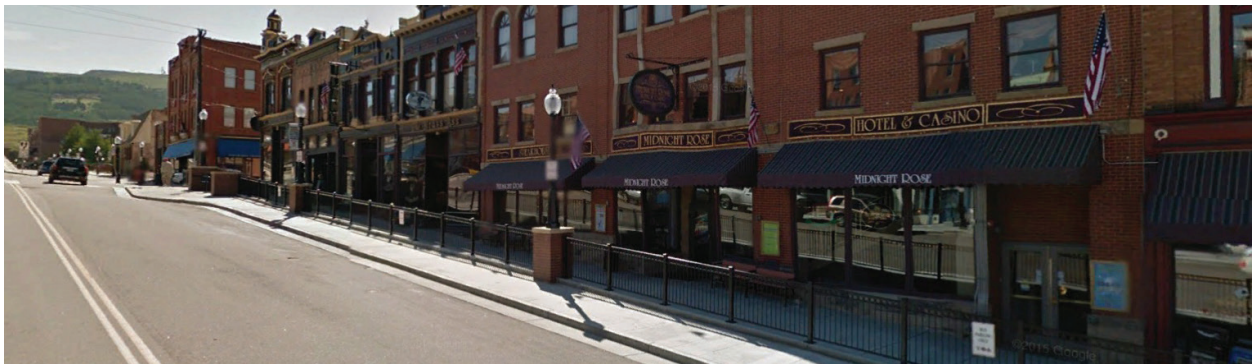
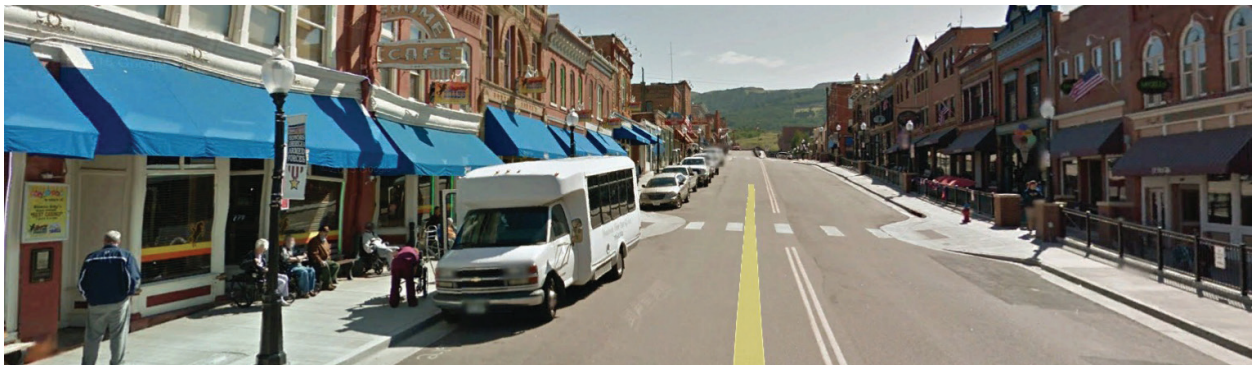
This handout shows some examples of streetscape improvements in several Downtown and Main Street historic settings. They show varying degrees of ADA compliance in their improvements for discussion purposes.

In addition, the last page shows some images of other ADA compliance and potential streetscape features that could be considered for Main Street.

#1 - E. BENNETT AVE. (CRIPPLE CREEK, CO)-APPEARS TO BE IN FULL COMPLIANCE



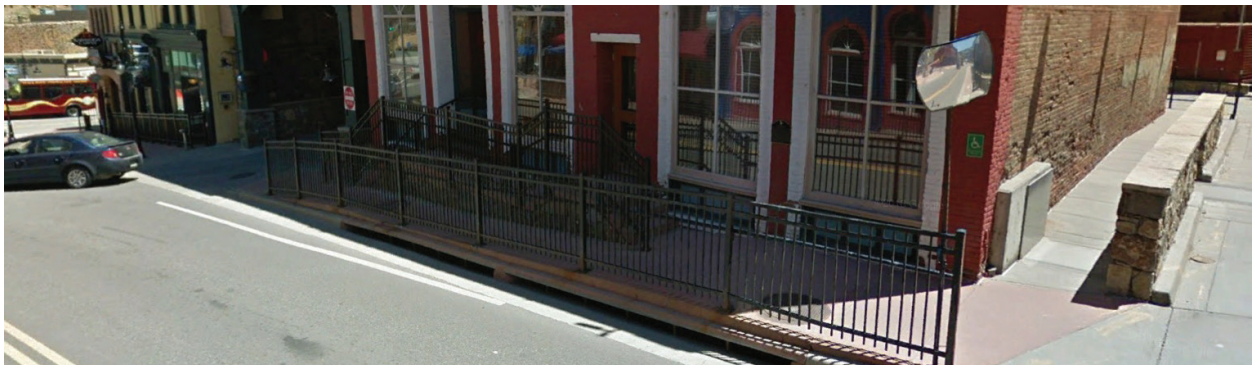
Cripple Creek, CO Aerial



#2 -GREGORY ST. (BLACK HAWK, CO)-APPEARS TO BE IN FULL COMPLIANCE



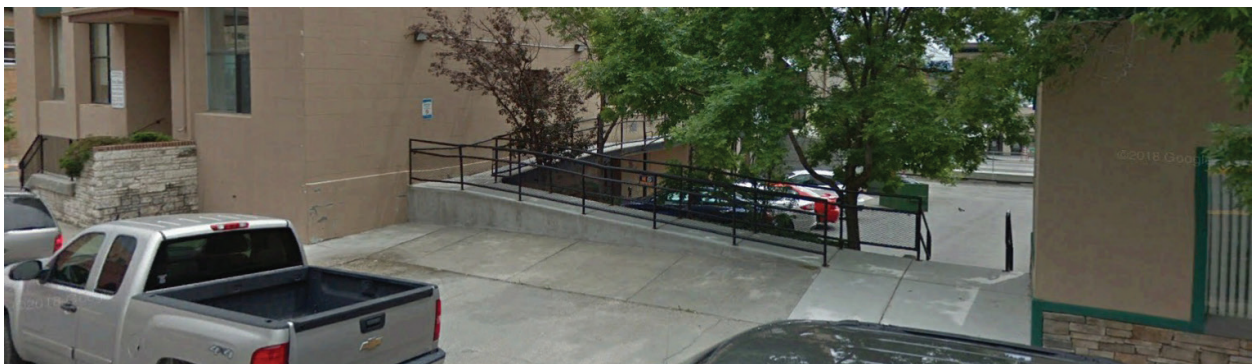
Black Hawk, CO Aerial



#3 - E. BROADWAY ST. (BUTTE, MT)-APPEARS TO BE IN PARTIAL COMPLIANCE



Butte, MT Aerial



#4 - 6TH ST. (GEORGETOWN, CO)- APPEARS NOT TO BE IN COMPLIANCE



Georgetown, CO Aerial



#6 - OTHER STREETSCAPE FEATURES

Other streetscape features that might be considered for Deadwood, SD are provided below. Some are associated with ADA compliance, while other are just streetscape features.



Truckee, CA: Plaza space



Truckee, CA: bollards and chains



Dubuque, IA: storefront ramps with railing



Lyons, CO: steps with landscaping

Appendix B - Background Research for Main Street Master Plan

In this section:

- ADA Case Study
- Deadwood Bump-outs



MEMORANDUM

TO: Kevin Kuchenbecker, Bob Nelson Jr. and Tom Kruzel, City of Deadwood

FROM: Winter & Company

DATE: November 27, 2018

RE: Considering the Addition of Bumpouts along Main Street in Deadwood

In order to achieve ADA accessibility and to accommodate other streetscape improvements and amenities along Main Street in the Deadwood Historic District, the use of bumpouts merits consideration. At intersections along Main Street, bumpouts would allow enough space to incorporate ramps that meet ADA requirements. If these bumpouts are extended beyond the corner along Main Street, as seen in Figure 1, there is also an opportunity to incorporate other features such as parking meters, information kiosks, sound system, and to protect street lights. Bumpouts located mid-block would also include some of the same features, and have an opportunity to provide safer and shorter cross-walks along Main Street in some locations, as seen in Figure 2. Where a cross-walk is not incorporated as part of the design of a new bumpout, bollards would be placed along the outer edge to act as a safety feature. Where feasible, mid-block bumpouts and those at intersections would be placed to incorporate street lights, especially the five globe lamps, to protect them from damage by trucks. As street lights are repaired, they may also be shifted slightly along Main street to be placed within a bumpout.

When considering an addition to a historic building, a variety of questions are considered including if the historic character can still be interpreted, if the addition is visually subordinate, if it is reversible in a way that would not damage the historic building, and if it is compatible and distinguishable as a later alteration. If incorporated, a bumpout would be considered an addition to the sidewalk of the Deadwood Historic District. Therefore, a bumpout would need to answer the considerations above in a way that creates a compatible, subordinate, distinguishable and reversible addition to the sidewalk. There are a variety of ways to achieve this, and to distinguish a new bumpout from the existing sidewalks and historic curb line including:

1. Distinguish the bumpout by incorporating a simple running bond that clearly and subtly distinguishes the original curb line from the bumpout. Figure 3 illustrates an example of the running bond.
2. Distinguish the bumpout by scoring the concrete in a different manner than is used on the sidewalk.
3. Distinguish the bumpout through a change in material or color. For instance, the

bumpout could be made of brick pavers similar to the street so that the bumpout blends with the street and reads as the historic brick paver. The bumpout could also be made of concrete and dyed a similar color to the brick so that it blends into the street and the sidewalk appears as a separate streetscape component. Figure 4 illustrates the incorporation of a different color concrete; however, this example is different in that the change in color is not used to highlight a historic curb line or existing section.

The three ways described above emphasize the importance of maintaining the historic curb line and distinguishing the new addition (bumpout) from the sidewalk to minimize the negative impact on the historic streetscape of the district.

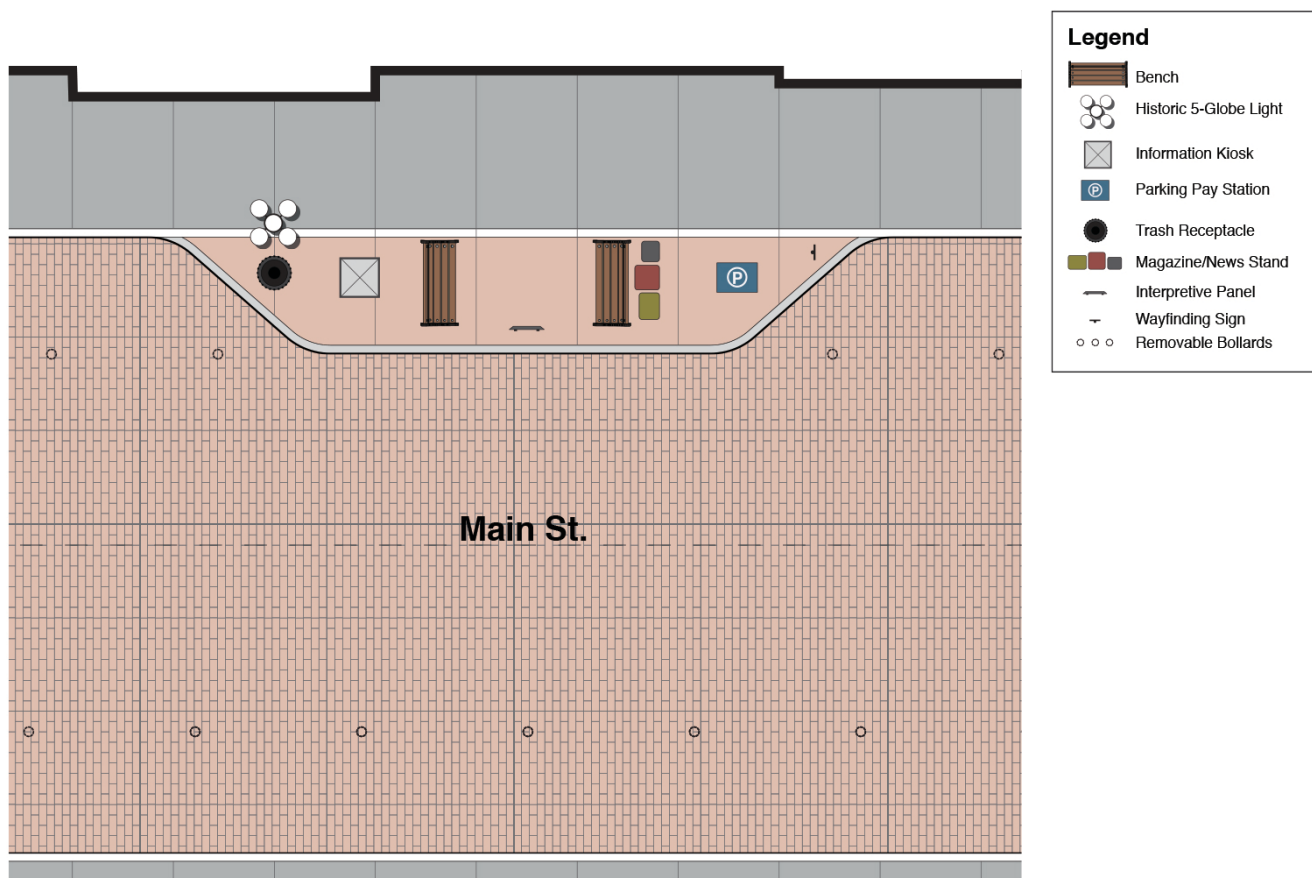


Diagram 1. This diagram illustrates a mid-block bumpout that protects an existing five globe light, and incorporates a variety of features including benches, information kiosks and interpretive panels. Locating these features within the bumpout creates a clearer pedestrian pathway. This bumpout is distinguishable from the existing sidewalk in the use of colored concrete, which matches the color of the brick pavers on the street so the bumpout reads as a component of the street. The original curb line is maintained and the new bumpout curb is minimized through the use of a darker material that blends more with the street. The removable bollards shown align with the bumpout and would be located in a concrete strip, colored to match the brick pavers. This would define an expanded pedestrian zone during parades and other events.

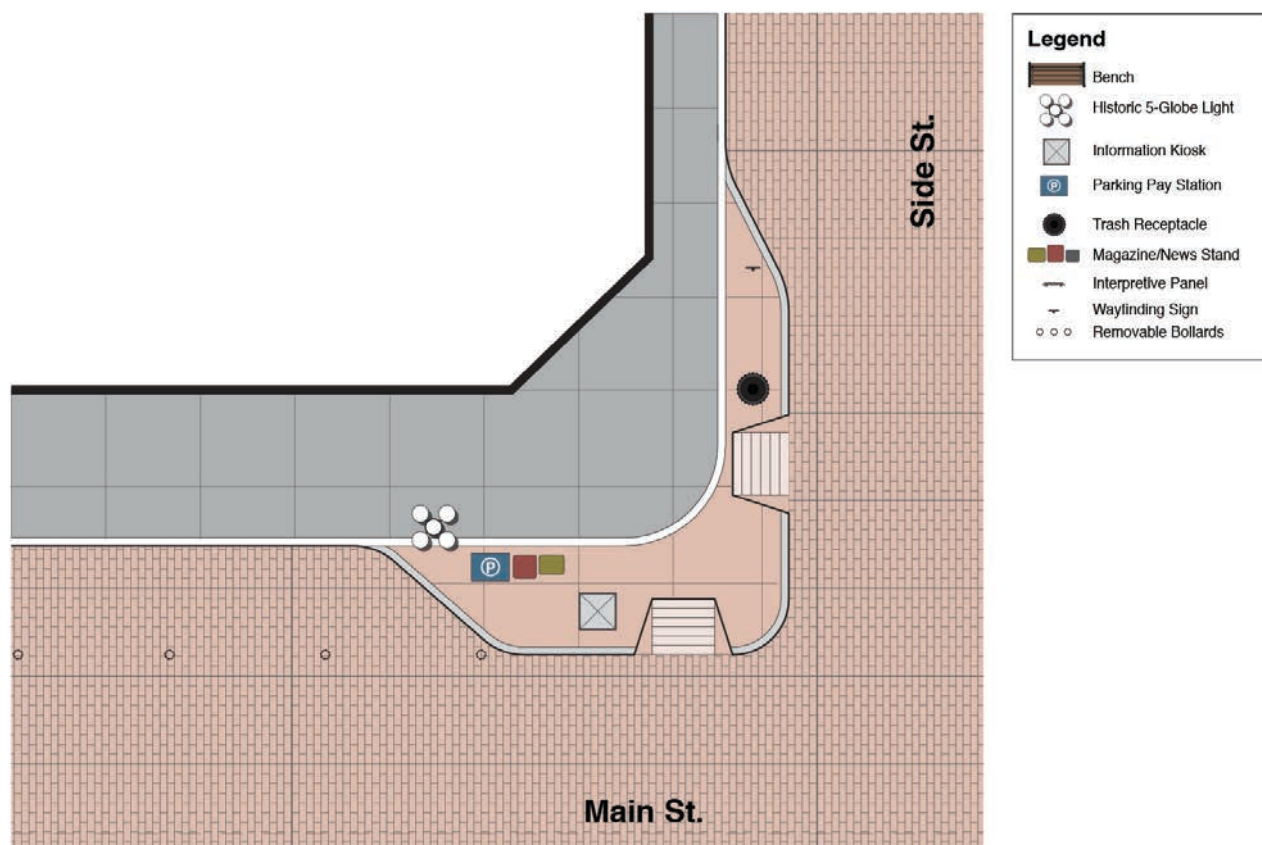


Diagram 2. This diagram illustrates the extension of a corner bumpout to include more than the ADA ramps. Here, the bumpout includes an information kiosk, a parking pay station, a trash receptacle and other features. The extension of this bumpout also allows for the globe light to be protected. The colored concrete of the bumpout matches the color of the brick pavers and is distinguishable from the existing sidewalk. The curb line of the existing sidewalk is maintained. The removable bollards shown align with the bumpout along Main Street and would be located in a concrete strip, colored to match the brick pavers. This would define an expanded pedestrian zone during parades and other events.



Figure 1. Boonville, MO utilized bumpouts in their historic downtown, which accommodated ramps and globe lights. The bumpout provides additional space to protect the globe lights from any passing vehicles.



Figure 2. The mid-block bumpout seen in this image protects the globe lights from interference by trucks or other vehicles.



Figure 3. The running bond shown in this image is an example of one way to distinguish the original curb line. Here, the original sidewalk curb line is distinguished along a street that is now a pedestrian mall. This same concept could be applied in Deadwood to distinguish the bumpout from the sidewalk.



Figure 4. Colored concrete is used to highlight this bumpout, which incorporates ADA ramps, a street light, fire hydrant, trash can and plenty of seating. It is important to note that while this bumpout incorporates similar ideas to those proposed for Deadwood, the colored concrete is used in a much different way than might be considered for Deadwood's Main Street.

Appendix C - Phase 1 Cost Estimate Summary, Product Sheets, Cost Quotes & Background Information

We developed “high level” cost estimates for as many of the improvement opportunities as possible in order to provide a range of potential costs to consider for future bond funding. Note that, the cost estimates do not take into consideration all of the design considerations or potential final decisions into account, and therefore these numbers vary widely. This is due to a variety of reasons including:

- Technical studies and investigations of existing conditions above and below ground have not been completed
- The Main Street Master Plan project will not be initiated until after the cost estimates have been developed
- The design assumptions are preliminary
- The scope of work and programming that are assumed have not been approved by the community
- State, national, and local jurisdictions have not provided formal approvals

In this section:

- Cost Summary
- Product Sheets & Estimates (These are preliminary products and estimates and do not imply any final Main Street design decisions.)

Deadwood Main Street Updates Project Description

The Deadwood Main Street project consists of road resurfacing, safety, and anticipated streetscape improvements beginning at the west end of Main at Armory Street and extending to the intersection with Highway 14A/85 at the east end of the downtown district. The improvements include side streets and alleys located one block either side of Main. These are Armory, Fire, Pine, Lee Street, Gold and Wall Street.

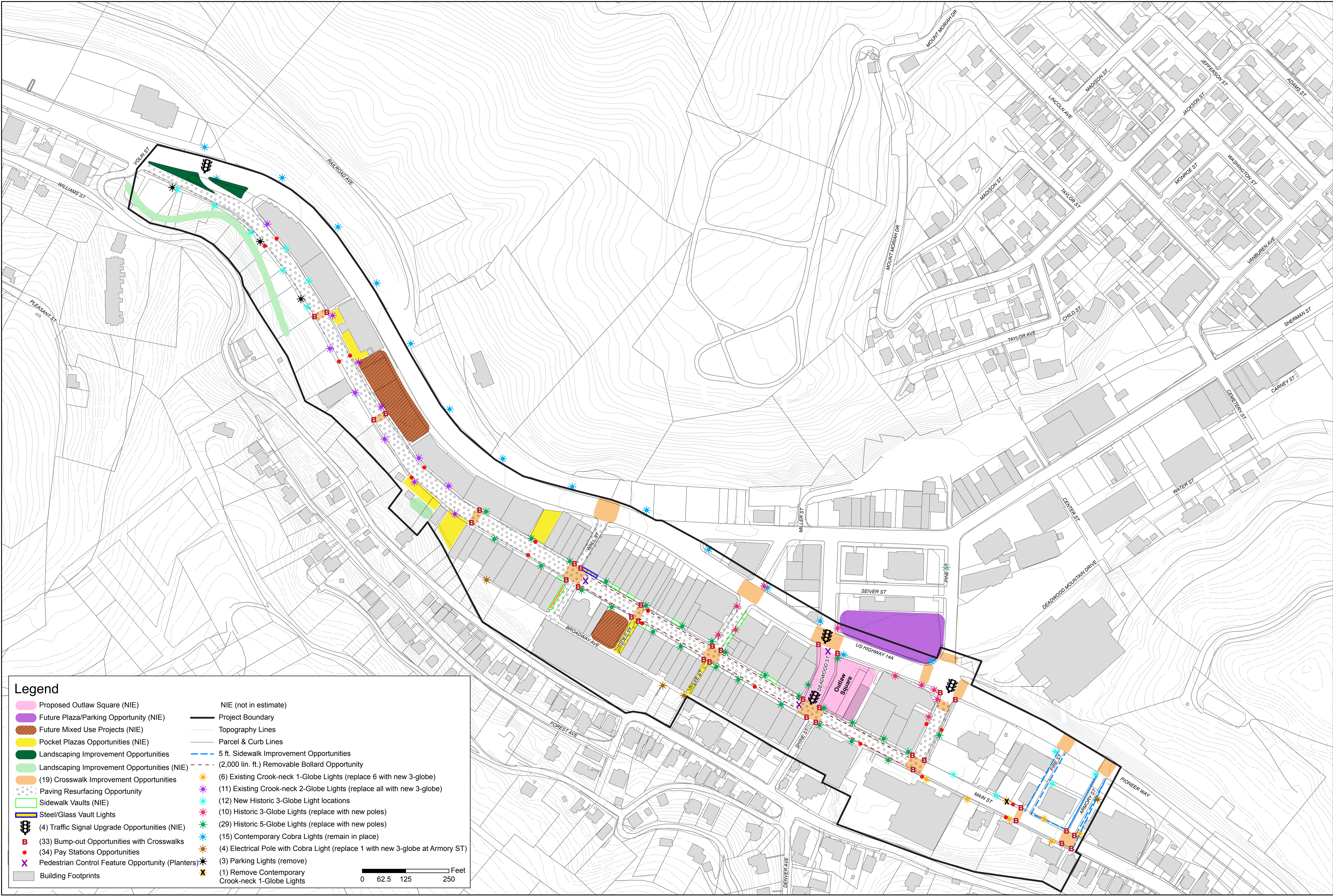
The major effort for this project is road resurfacing along Main Street (from Pine to 14A/85), Pine, Lee Street, Gold and Wall Street. This will include removing the existing pavers and replacing them with a more durable brick paver (existing pavers that are in fair to good condition will be stored and reused in other sections of town to repair road areas that have the same material.) Also, some sections of the concrete base along Main Street and the side streets will also be improved as necessary. Road resurfacing will primarily be from curb to curb. Some sidewalk repair with the addition of some bulb-outs to accommodate ramps is also anticipated.

In addition, the Main Street improvements will include some of the projects identified in the Main Street Master Plan project. This project is scheduled to be completed in early 2020. Even though there isn't a vision established for Main Street yet, there will be some streetscape enhancements that will likely be provided in some type of configuration, so these have been included in the cost estimates.

The following lists the major construction improvements and some quantities based on the research completed in December of 2019. There are a lot of unknown conditions under Main Street and the side streets that could impact resurfacing costs. Therefore, the cost estimates are very high-level, so the numbers could change once the reality of the actual conditions are known. Note: the majority of the estimates provided include construction, design and products.

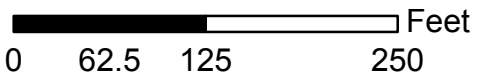
The attached map identifies where the improvements are anticipated to occur. There are also a series of product samples that were selected for cost purposes only. They do not represent what the final products will be since this will be determined in the design development phase of the Main Street improvement project.

Main Street and Side Street Improvements (see map)			
1.0 Utilities			Alternates
	Storm Sewer Improvements	\$116,400.00	
	Sanitary Sewer Improvements	\$119,000.00	
	Water Main Improvements	\$907,500.00	
	Electrical Improvements (traffic signal countdowns x 3, underground electrical for streetlights)	\$354,650.00	
	Unforeseen repairs	\$500,000.00	
2.0 Surfacing			
	Street resurfacing and concrete base	\$2,906,068.00	
	Bump-outs w/curb-ramps	\$345,000.00	
	Pavement Markings	\$18,720.00	
3.0 Removals	Street surfacing	\$298,631.00	
	Utilities	\$194,600.00	
4.0 Landscape and irrigation work	North gateway	\$110,000.00	
5.0 Streetscape Enhancements	Furnishings	\$225,400.00	
	Removeable bollards, concrete base, and crowd control fencing	\$220,300.00	
	All crowd control fencing (alternate to above)		\$64,000.00
	Streetlights and planter arms	\$390,600.00	
6.0 Specialized	Reconstruct prism glass	\$40,000.00	
	Vault repairs	\$410,000.00	
	Public restrooms	\$120,000.00	
	Parking pay stations and signs	\$514,200.00	
	Sound System		
	Smoke Test	\$26,872.00	
	Water investigations	\$28,000.00	
7.0 Other			
	Civil Construction Contingency	\$2,049,799.00	
	Civil Design/Construction/Admin/Legal	\$1,185,955.00	
Total Cost		\$11,081,695.00	



Legend

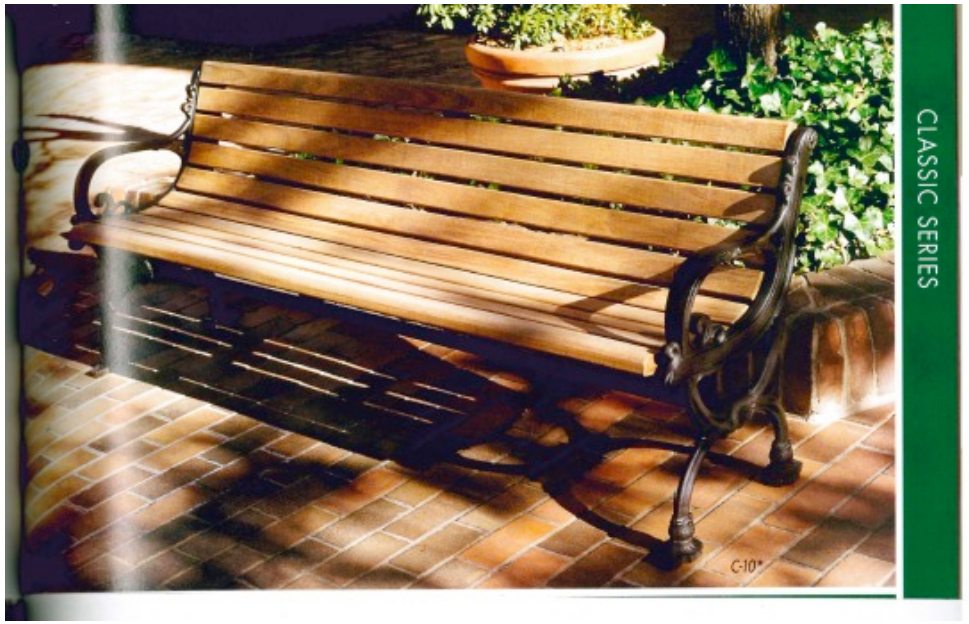
- | | |
|---|--|
| Proposed Outlaw Square (NIE) | Project Boundary |
| Future Plaza/Parking Opportunity (NIE) | Topography Lines |
| Future Mixed Use Projects (NIE) | Parcel & Curb Lines |
| Pocket Plazas Opportunities (NIE) | 5 ft. Sidewalk Improvement Opportunities |
| Landscaping Improvement Opportunities | (2,000 lin. ft.) Removable Bollard Opportunity |
| Landscaping Improvement Opportunities (NIE) | (6) Existing Crook-neck 1-Globe Lights (replace 6 with new 3-globe) |
| (19) Crosswalk Improvement Opportunities | (11) Existing Crook-neck 2-Globe Lights (replace all with new 3-globe) |
| Paving Resurfacing Opportunity | (12) New Historic 3-Globe Light locations |
| Sidewalk Vaults (NIE) | (10) Historic 3-Globe Lights (replace with new poles) |
| Steel/Glass Vault Lights | (29) Historic 5-Globe Lights (replace with new poles) |
| (4) Traffic Signal Upgrade Opportunities (NIE) | (15) Contemporary Cobra Lights (remain in place) |
| (33) Bump-out Opportunities with Crosswalks | (4) Electrical Pole with Cobra Light (replace 1 with new 3-globe at Armory St) |
| (34) Play Stations Opportunities | (3) Parking Lights (remove) |
| Pedestrian Control Feature Opportunity (Planters) | (1) Remove Contemporary Crook-neck 1-Globe Lights |
| Building Footprints | |



Prepared By:

Prepared For:

CITY OF DEADWOOD
Existing Conditions &
Potential Main Street Improvements Map
for high-level cost estimates
March 5, 2019



Classic Series Bench:

Info: 2nd Site Systems recycled slats, a recycled plastic, with iron detail.

Dimensions: 4' (248 lbs.) or
6' (288 lbs.)

Finish: Maple, Cherry, walnut or gray.

Cost: 4' - \$1,296 .00
6' - \$1,372.00

*Pricing does not include shipping or tax.

The City of Deadwood will do a 50/50 cost share with your business.



P.O. Drawer 330, Dunkirk, MD 20754
1.800.368.2573 (USA + Canada) TEL 301.855.8300 FAX 410.257.7579
VICTORSTANLEY.COM

SALES QUOTE

Sales Quote No: SQ87109
Revision Number: 0
Sales Quote Date: 06/15/17

Sell To:

City of Deadwood
Bonny Anfinson
108 Sherman Street
Deadwood, SD 57732

Customer No: C013197
Phone No: 605-578-2082
Contact Name:
Contact Phone No:
Terms: Pending
Associate: Megan Brien

Project Name: CITY OF DEADWOOD-DIRECT BUY
Project Location State: SD

Ship To:

Please advise
108 Sherman Street
Deadwood, SD 57732

Ship Via: Contract Carrier
Ship Freight: Prepaid
Shipping Method: FOB Factory

This Quote is valid for 30 **days.**

Estimated Lead Time: Allow 8 to 10 (weeks)
for Production of your order.

All credit determinations are made by our Credit Department.

Comments:

- * Orders are released into production upon receipt of signed sales/purchase order, credit determination and (where applicable) deposit, payment bond, etc.
- * Our standard powder coating colors for metalwork VS: Black, Bronze, Burgundy, Blue, Green, Tavern Square Green, Teal, Red, Gray and White.
- * Our optional powder coating metallic colors for metalwork are Titanium and Silver.
- * All products must be permanently affixed to the ground. Consult your local codes for regulations. Anchor bolts NOT provided.
- * Common Carrier unloading is the responsibility of the receiver.
- * While the vast majority of our components satisfy Buy America requirements, we must know if there are Buy America requirements before the order is placed.
- * It is the buyer's sole responsibility to inspect shipments at the time of delivery; any damage, loss, or shortage must be noted on the signed Proof of Delivery and reported to Victor Stanley within seven (7) days.
- * This quote is valid for shipment within normal production time. No deferred shipping dates are accepted without prior written approval.

QTY	Model No.	Description	Unit Cost	Total Price
4	FC-6	Concourse Series Stand-Alone Ash Urn FC-6 Components Stainless-Steel Ashtray Black Plastic Liner Black	564.00	2,256.00
4	C-10	Classic Series Contoured Bench C-10 Components 6-Foot Black 2x3 Maple 2nd Site Systems Slats	1,564.00	6,256.00

Many Victor Stanley, Inc. products are covered by patents including but not limited to the following:
USA Patents D458,431 S; D441,532 S; D452,760 S; D450,166 S; D445,982 S; D483,538 S; D487,177 S; D487,537 S; D487,538 S; D454,238 S; D476,455 S; D476,454 S; D417,053; 6,339,944 B1; D385,231; 5,660,907; 5,791,047; D386,012; D376,937; D383,615; D376,271; D384,512; D523,263 S; D532,620 S; D526,805 S; D585,793 S; D582,169 S; D578,792 S; D579,694 S; D585,220 S; D573,766 S; D573,769 S; D553,921 S; D555,209 S; D586,144 S; D579,684 S; D578,783 S; D581,173 S; D581,188 S; D563,689 S; D579,227 S; D579,685 S; D542,993 S; D561,967 S; D595,915 S; D595,916 S; D599,570 S; D601,770 S; D602,221 S; D606,271 S; D595,973 S; D601,823 S; D607,229 S; D609,933 S; D586,062 S; D621,295 S.
Canada 98101; 96040; 96159; 98103; 96108; 110953; 110954; 117181; 126714; 126322; 126323; 130714; 130717; 126317; 126318; 126319; 126320; 126321; 130652; 130653; 130715; 130716. **Canada Patent** 2,184,349. **Mexico Reg. Des.** 001871; 28182.
EC Reg. Des. 000475579-0001; 000503297-0001; 000762638-0001; 000961404.
Other Patent(s): Pending.



P.O. Drawer 330, Dunkirk, MD 20754
1.800.368.2573 (USA + Canada) TEL 301.855.8300 FAX 410.257.7579
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SALES QUOTE

Sales Quote No: SQ87109
Revision Number: 0
Sales Quote Date: 06/15/17

Sell To:

City of Deadwood
Bonny Anfinson
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Please advise
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Ship Via: Contract Carrier
Ship Freight: Prepaid
Shipping Method: FOB Factory

This Quote is valid for 30 **days.**

Estimated Lead Time: Allow 8 to 10 (weeks)
for Production of your order.

All credit determinations are made by our Credit Department.

QTY	Model No.	Description	Unit Cost	Total Price
1		Freight	1,274.00	1,274.00

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Canada D98101; 96340; 96159; 96103; 96108; 110953; 110964; 117181; 126714; 126322; 126323; 130714; 130717; 126317; 126318; 126319; 126320; 126321; 130662; 130663; 130715; 130716. **Canada Patent** 2,184,348. **Mexico Reg. Des.** 001871; 28182.
EC Reg. Des. 000475579-0001; 000503297-0001; 000762638-0001; 000961404.
Other Patent(s): Pending.

Sub-Total: 9,786.00
Tax: 0.00

Total: 9,786.00

All figures are in US Dollars

Page: 2

Please review our Standard Terms of Production on proceeding pages

STANDARD TERMS OF PRODUCTION

TAXES

Prices on the specified products are exclusive of all city, state and federal excise taxes, including, without limitation, taxes on manufacture, sales, receipts, gross income, occupation, use and similar taxes. It is the responsibility of the purchaser to remit to the appropriate state or local authority all state sales tax not herein designated as well as the applicable use taxes, local taxes, permits and fees of any kind.

REGULAR PAYMENT TERMS

All payment terms are determined by the credit department. No order will be processed or placed into production until credit has been determined and a deposit has been received (if required). Purchaser is responsible for the timely payment of Victor Stanley's invoices within Victor Stanley's payment terms. In the unlikely event that collection activity is necessary due to the non-payment of past due invoices, Purchaser agrees that all collection charges, legal fees and interest incurred in such collection activity will be the sole responsibility of the Purchaser.

CANCELLATION FEE

Victor Stanley, Inc. manufactures all products to specific orders, and therefore reserves the right to charge a 30% cancellation fee if this order is canceled by the Buyer while goods are in production.

DELIVERY

All prices are FOB Factory unless otherwise stated by Victor Stanley, Inc. in writing.

INTEREST

If Buyer fails to pay in accordance with the terms of this agreement, an interest charge of 1.5% per month may be added to the unpaid balance.

ATTORNEYS' FEES

In the event that the Buyer fails to timely pay for the goods in accordance with the terms of this agreement or is otherwise in breach of its obligations to Victor Stanley, Inc., Buyer agrees to pay to Victor Stanley, Inc. the cost of collection, including its reasonable attorney's fees and suit costs.

DELAYS

Our lead time is an estimate only and Victor Stanley, Inc. is not responsible for any delays in our previously quoted or estimated shipping time. Victor Stanley, Inc. will not be liable for any delay in the performance of orders or contracts, or in the delivery or shipment of goods, or for any damages suffered by Buyer by reason of such delay, if such delay is, directly or indirectly, caused by, or in any manner arises from, fires, floods, accidents, civil unrest, acts of God, war, governmental interference or embargoes, strikes, labor difficulties, shortage of labor, fuel, power, materials, or supplies, transportation delays, or any other cause or causes (whether or not similar in nature to any of these herein before specified) beyond its control.

NONCONFORMITY

All products made by Victor Stanley, Inc. are inspected before shipment, and should any of such materials prove defective due to faults in manufacture, or fail to meet the written specifications accepted by Victor Stanley, Inc., Buyer shall not return the goods, but notify Victor Stanley, Inc. immediately, stating full particulars in support of claim, and Victor Stanley, Inc. will either replace goods upon return of the defective or unsatisfactory material or adjust the matter fairly and promptly, but under no circumstances shall Victor Stanley, Inc. be liable for consequential or other damages, losses, or expenses in connection with or by reason of the use of or inability to use materials purchased for any reason.

LIMITED WARRANTY

We warrant to the original purchaser the goods manufactured by us to be free from defects in material and workmanship for one year under normal use and service. Our obligation under this warranty shall be limited to the repair or exchange of any part or parts which may thus prove defective under normal use and service within one year from date of delivery, and which our examination shall disclose to our satisfaction to be defective. This warranty expressly excludes acts of misuse, vandalism or freight damage. Ductile Iron castings include a 10-year limited warranty against breakage. **THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART.**

CONDITIONS

All orders or contracts are accepted with the understanding that they are subject to Victor Stanley, Inc.'s ability to obtain the necessary raw materials, and all orders or contracts as well as shipments applicable thereto are subject to Victor Stanley, Inc.'s current manufacturing schedules, and government regulations, orders, directives, and restrictions that may be in effect from time to time.

CONTROLLING PROVISIONS

These terms and conditions shall supersede all provisions, terms and conditions contained on any confirmation order, or other writing Buyer may give or receive, and the rights of the parties shall be governed exclusively by the provisions, terms and conditions hereof. Victor Stanley, Inc. makes no representations or warranties concerning this order except such as are expressly contained herein, and this order may not be changed or modified orally.

CONTROLLING LAW

Any controversy or claim arising out of or relating to this order or the performance or breach thereof shall be governed by the laws of the State of Maryland and Buyer authorizes and agrees that suit may be brought within the State of Maryland by Victor Stanley, Inc. to collect for any breach of Buyer's obligations to pay for the goods.

SHIPPING CLAIMS

It is the sole responsibility of the Buyer to inspect all shipments at the time of receipt, both by comparing the number of packages received to the number outlined on the Bill of Lading, and by inspecting the packaging for damage. Damage, loss, or shortage must be noted on the signed Proof of Delivery prior to the departure of the delivery driver, and must be reported to Victor Stanley, Inc. within seven (7) days. Replacement cannot be guaranteed for damage, loss, or shortage not clearly noted on delivery paperwork and promptly reported to Victor Stanley, Inc. This includes damage to materials that will be stored for later use.



EXHIBIT BASES AND FRAMES





EXHIBIT BASES AND FRAMES



QUALITY AND FLEXIBILITY - BUILT IN.

As a leading manufacturer of exhibit bases and frames for more than three decades - and with one of the broadest array of options in the industry - you can count on Pannier to have the right frame solution to meet any need or application, inside or out.

Our Exhibit Bases and Frames:

- :: Are built to National Park Service (NPS) standards;
- :: Are constructed of high-strength aluminum, making them both rust-free and maintenance-free;
- :: Can accommodate any panel material up to 1/8 inch thick;
- :: Can be customized to hold panels up to 1/4 inch thick;
- :: Are built in Pannier's own manufacturing facility, allowing us to ensure the highest-level of quality and durability.

And since every Pannier exhibit base and frame is custom-built, they can be engineered to meet your specific installation requirements.

ALL PANNIER EXHIBIT BASES AND FRAMES PROVIDE A HOST OF BENEFITS:

TAMPER PROOF CONNECTIONS
USED TO PROTECT FROM THEFT

REMOVABLE TOP
RAIL FOR EASY
PANEL CHANGES

CUSTOM ALUMINUM
EXTRUSIONS, ELIMINATING
UNNECESSARY WELDS

CORNERS AND EDGES
ROUNDED FOR BOTH SAFETY
AND AESTHETICS

FULL CAPTURE FRAME
HOLDS PANEL IN PLACE

3/16" BACKER PLATES
FOR ADDED STRENGTH
AND DURABILITY

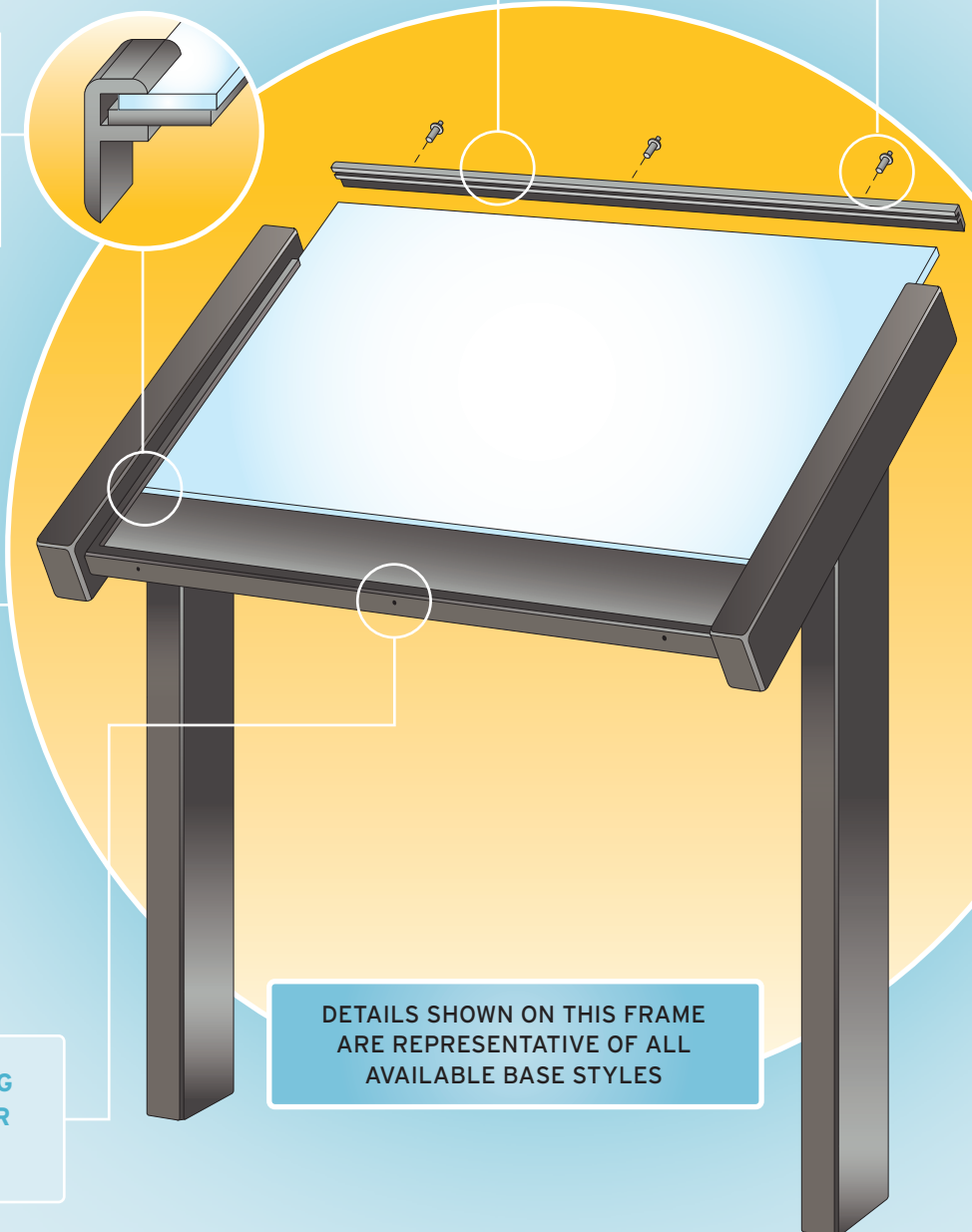
HIGH-QUALITY, PAINTED OR
POWDER COATED FINISHES

STANDARD AND CUSTOM
FRAMES SIZED TO FIT
ANY NEED

VIRTUALLY UNLIMITED
MOUNTING OPTIONS

WEEP HOLES ALONG
BOTTOM FOR WATER
DRAINAGE

DETAILS SHOWN ON THIS FRAME
ARE REPRESENTATIVE OF ALL
AVAILABLE BASE STYLES



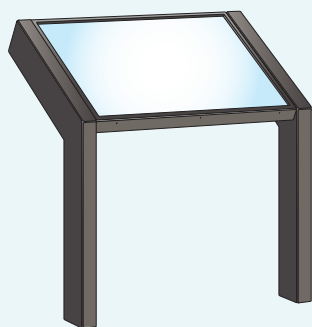
LOW PROFILE BASES: Ideal for interpretive wayside exhibits, these sturdy bases position your panel so that it is easy to read without drawing attention away from the surrounding views.



Low Profile Bases:
TRADITIONAL T

Our most popular style, this base is anchored by two strong, centered posts. This style is also available in an Arch Frame.

AL



Low Profile Bases:
CANTILEVERED

The preferred style for NPS interpretive exhibits, this classic base fits unobtrusively into the landscape while angling the panel for easy viewing.

AL WS



Low Profile Bases:
SINGLE PEDESTAL

Low-key and extremely sturdy, sitting on one centered post, either angled or upright. This base is ideal for smaller size panels, typically up to 24 inches wide.

AL

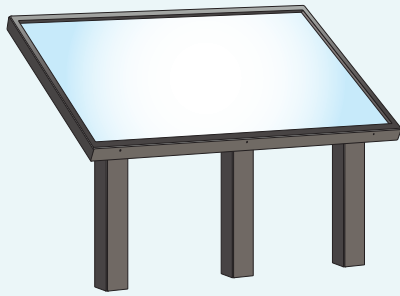


Low Profile Bases:
DOUBLE PEDESTAL

With a double-post configuration, this base can support larger panels than the Single Pedestal while still maintaining the same minimal structure.

AL

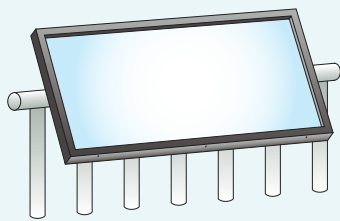




Low Profile Bases: TRIPLE PEDESTAL

Utilizing a triple-post configuration, this base can support large panels, typically 60" wide and above, mounted at an easy-to-read viewing angle.

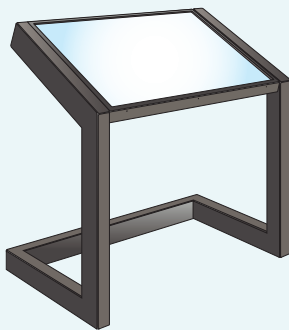
AL



Low Profile Bases: RAIL MOUNT

This custom frame mounts to railings, boardwalks, fences and similar structures. We can engineer a mounting solution for you using our in-house 3D designer.

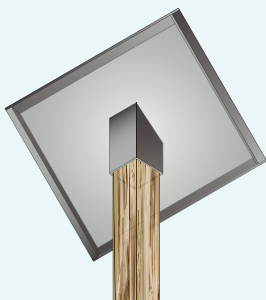
AL



Low Profile Bases: SLED BASE

Designed specifically for moveable exhibits, the Sled Base provides the perfect combination of strength and flexibility; includes options to secure your base in one location if required.

AL WS



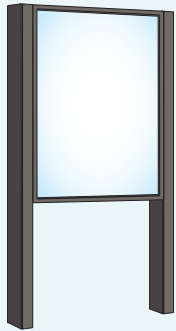
Low Profile Bases: POST MOUNT

This method uses a metal sleeve with pre-drilled mounting holes, which allow the frame to be mounted securely over your wooden post. Multiple post configurations are also an option.

AL



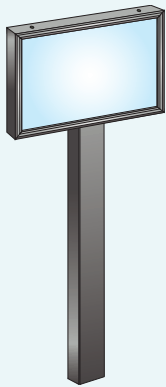
UPRIGHT BASES & KIOSKS: Designed to attract attention, upright bases offer the flexibility to combine permanent information panels with bulletin cases, for temporary postings.



Upright Bases & Kiosks: UPRIGHT

Perfect for maps, safety messages, or other information, Uprights are designed to communicate boldly. We can build to sit at any height you need, and these can also have a double-sided frame.

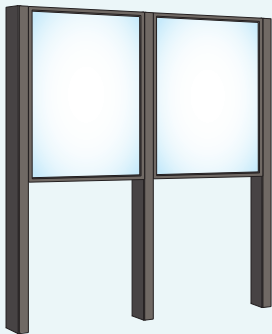
AL WS



Upright Bases & Kiosks: SINGLE POST UPRIGHT

To achieve the visibility you need, Single Post Upright exhibit bases are designed with posts available in a variety of lengths, and accommodate panels 24 inches wide, or less.

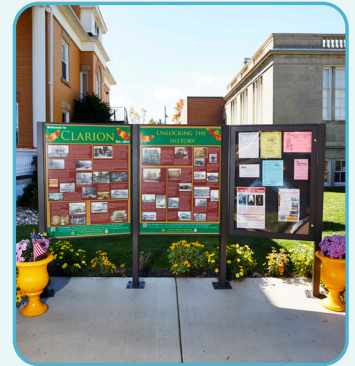
AL WS



Upright Bases & Kiosks: DOUBLE/TRIPLE INLINE

Double and Triple Inlines can accommodate multiple frames, and are arranged in a straight line. In addition to panels, Bulletin Cases can be integrated into these units.

AL

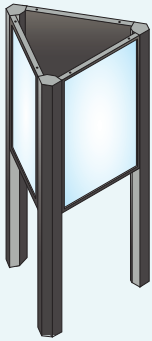


Upright Bases & Kiosks: DOUBLE/TRIPLE OFFSET

Offset bases allow you to connect multiple frames together at an angle, allowing you to surround a visitor with important information. Bulletin Cases can also be integrated into these units.

AL

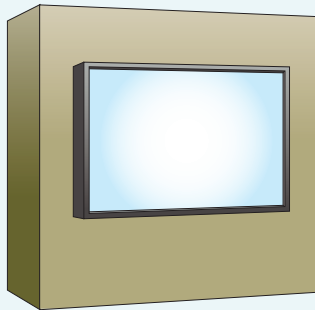




Upright Bases & Kiosks: **TRIANGULAR KIOSK**

Ideal for sharing abundant information in a limited amount of space, this three-sided design accommodates any combination of panels and Bulletin Cases and is a great "information hub."

AL



Upright Bases & Kiosks: **WALL MOUNTED**

These frames are easily mounted to walls with our unique, hidden mounting system. A sleek frame secures your fiberglass panel or Bulletin Case to virtually any vertical surface - brick, wood, concrete, or metal.

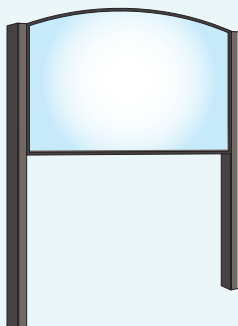
AL WS



Upright Bases & Kiosks: **BULLETIN CASE**

This case provides a secure, weatherproof space for information which is frequently changed and updated. Bulletin Cases can be mounted on a wall or with posts, depending on your need.

AL



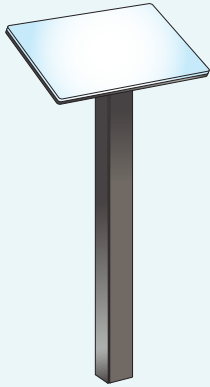
Upright Bases & Kiosks: **ARCH FRAME**

Arch Frames are a custom solution - made to match the uniqueness of each exhibit. The upright design features two sturdy posts, fitted with an arch top (or bottom) frame. Also available as a Low Profile base.

AL



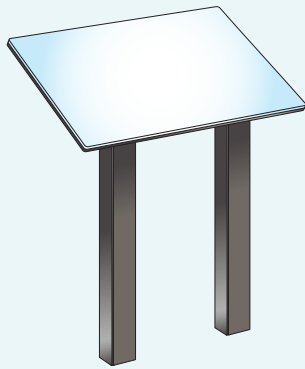
FRAMELESS BASES: When an alternative take on the classic framed wayside exhibit is desired, Pannier panels can go frameless.



Frameless Bases:
SINGLE POST FRAMELESS

Our Single Pedestal Exhibit base, simplified. This base is ideal if your panel is 24 inches wide or less.

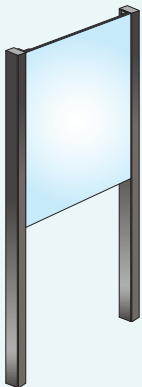
AL



Frameless Bases:
DOUBLE POST FRAMELESS

When your panels are too large to be supported with one single post, we recommend using a double post structure. Frameless mounts allow panels to be cut-to-shape and mounted on an angle or upright.

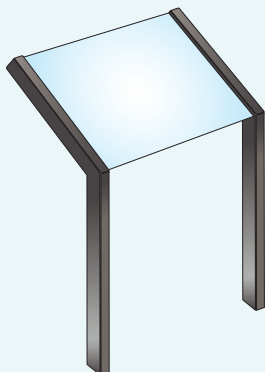
AL



Frameless Bases:
UPRIGHT FRAMELESS

A simplified take on the classic Upright, refined to match your style. As shown on the right, most frameless exhibits can be cut to custom shapes.

AL



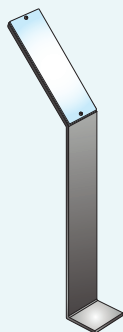
Frameless Bases:
CANTILEVERED FRAMELESS

This slim, yet strong base offers a trimmer option to the traditional NPS style cantilevered base.

AL



TRAILSIDES: Trailside bases deliver information in ways that make a lasting impression – without taking away from the view.



Trailside Bases: SNAKE STAKE

The Snake Stake is a light-weight, unobtrusive trailside identifier used often in trail marking. Typically holds a 6"x 12" panel and sits 18" out of ground.

AL WS



Trailside Bases: PLANT STAKE

The Plant Stake is a easy and economical way to identify plants, used widely in botanical gardens and farms. Panels can be written on and wiped clean over and over.

AL



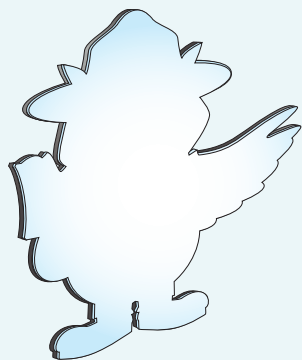
Trailside Bases: PLANT IDENTIFIER

Pannier's Plant Identifier is perfect for calling attention to flora, fauna and other natural wonders. Plant Identifiers hold a 5 $\frac{9}{16}$ " x 11 $\frac{7}{16}$ " panel.

AL



CUT-TO-SHAPE: Custom graphic signs and panels are the perfect way to add something extra for your viewers.

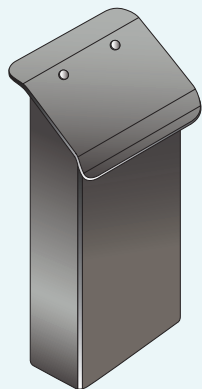


Cut-to-Shape: PANEL

We can manufacture just about any size and shape panel you dream up. Custom cut-to-shape panels are a spectacular addition to your landscape.



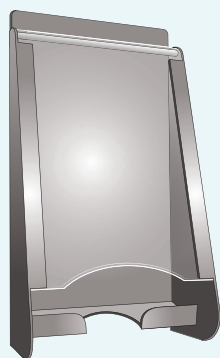
ACCESSORIES: Pannier offers a variety of accessories that can be mounted directly to our exhibit bases.



Accessories: BROCHURE HOLDER

Brochure Holders can be integrated into most Pannier exhibit bases providing additional information that the visitor can take with them. This standard style Brochure Holder has a hinged lid, keeping the rain away from your brochures.

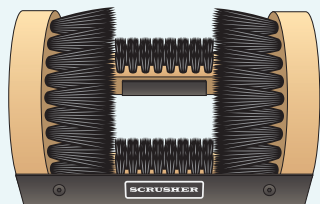
AL



Accessories: NPS STYLE BROCHURE HOLDER

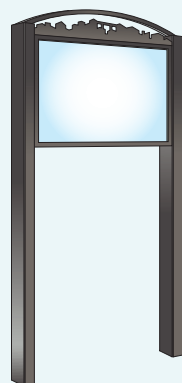
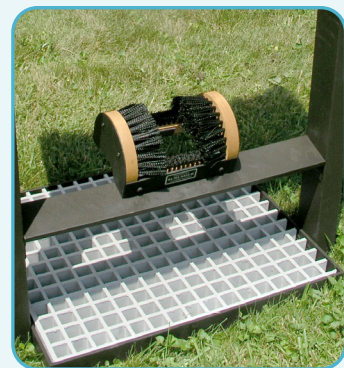
The NPS Style Brochure Holder has a clear front, with brochures being removed from the bottom, giving the visitor (and the owner) the ability to see both which brochure is inside, along with how many.

AL



Accessories: BOOT SCRUSHER

Mountable to most Pannier exhibit bases, a Boot Scrusher is a valuable tool to help keep your Visitor Center clean and invasive species out.



Upright Bases & Kiosks: DECORATIVE CUT-OUT FRAME

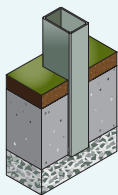
To add a little something extra to your exhibit base, consider a decorative cut-to-shape painted header. We can cut custom shapes to mount directly to the top of the exhibit frame.

AL

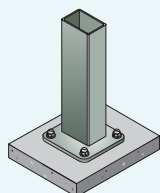


MOUNTING OPTIONS:

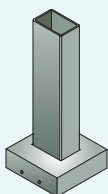
Pannier's range of mounting options allow panels and signage to be installed virtually anywhere – in concrete or wood, on walls or railings, inside or outside.



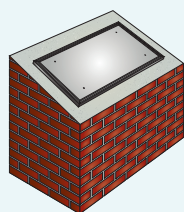
DIRECT EMBEDMENT Our most popular installation method, Direct Embedment buries the exhibit base directly into the ground with a concrete base, providing lasting durability.



BASEPLATE MOUNT With this method, exhibit bases are fitted with baseplates that allow mounting to any flat surface. Baseplate Mounting is commonly used for mounting on decks, as well as other wood and concrete surfaces.



BASEPLATE COVERS When you want to cover your baseplates, we can provide you with baseplate covers. These covers fit snugly over the baseplates, and are attached using tamper-proof pop rivets.



MASON MOUNT This Low Profile style can be mounted to existing architectural features, such as brick, stone, stucco or concrete, with minimal impact where the base is attached.

Contact us for more information on these and other mounting and installation options.

:: COLORS & FINISHES ::

Pannier offers a variety of colors and finishes to ensure the perfect fit for any application:

All Pannier frames are available in these standard colors:



BLACK



NPS DARK BROWN



NPS BROWN



NPS MEDIUM GRAY

:: Custom colors are available upon request.

:: Powder coating is also available.



345 Oak Road
Gibsonia, PA 15044

800.544.8428 / 724.265.4900

marketing@pannier.com

www.PannierGraphics.com

Prepared For: City of Deadwood
Contact: Tom Kruzel
Company: City of Deadwood
Address: 102 Sherman St.
Address: Deadwood, SD 57732
Phone: (605) 645-8447
Email: tomk@cityofdeadwood.com



Amano McGann, Inc.
2695 Patton Road
Roseville, Minnesota 55113
Tel: 612-524-6325
Fax: 612-524-6327
www.amanomcgann.com

<u>MODEL</u>	<u>QTY</u>	<u>DESCRIPTION</u>
AMI MULTI SPACE METER - POWERED BY METRIC		
APM-1650/A987	1	SPRITE - AC Mains Base Unit
APM-120670	1	PowerSonic AC Mains 12V Battery
APM-120270	1	5.7" QVGA Mono Sprite Display
APM-101070	1	CDMA Modem (Please specify if GSM is preferred)
APM-110870	1	Coin Payment Sprite- with vault
APM-120570	1	Bill Payment Sprite- with vault
APM-101970	1	Credit Card Payment
APM-DELIVERY	1	Meter Shipment - US Domestic ONLY
MSM Training		
APM-PSS-120	1	ASLAN Webinar Training
APM-PSS-121	1	Maintenance and Repair Webinar Training
MSM Supplies		
APM-3112TPP	5	Ticket Rolls - Pay and Display
APM-CRCC	1	(40 Pack) Card Reader Cleaning Card
APM-TPCC	1	(15 Pack) Thermal Printer Cleaning Card
APM-BACC	1	(15 Pack) Bill Acceptor Cleaning Card
APM-CSWAB	1	(50 Pack) Cleaning Swabs
MSM ASLAN Back-Office Software, Credit Card Gateway and Airtime Services		
APM-2001MA	1	ASLAN Set Up License Fee
APM-2030MASR	12	webASLAN Hosting SaaS - monthly per meter charge
APM-2035MASR	12	Credit Call Merchant Fee - monthly per meter charge
APM-2052SR	12	KORE Network CDMA 10mb - monthly per meter charge

BASE SYSTEM TOTAL: \$ 15,633.00

OPTION ONE - ADD ADDITIONAL SPRITE MULTI-SPACE METERS

EACH: \$ 11,918.00

<u>MODEL</u>	<u>QTY</u>	<u>DESCRIPTION</u>
AMI MULTI SPACE METER - POWERED BY METRIC		
APM-1650/A987	1	SPRITE - AC Mains Base Unit
APM-120670	1	PowerSonic AC Mains 12V Battery
APM-120270	1	5.7" QVGA Mono Sprite Display
APM-101070	1	CDMA Modem
APM-110870	1	Coin Payment Sprite- with vault
APM-120570	1	Bill Payment Sprite- with vault
APM-101970	1	Credit Card Payment
APM-DELIVERY	1	Meter Shipment - US Domestic ONLY
MSM Supplies		
APM-3112TPP	5	Ticket Rolls - Pay and Display
MSM ASLAN Back-Office Software, Credit Card Gateway and Airtime Services		
APM-2030MASR	12	webASLAN Hosting SaaS - monthly per meter charge
APM-2035MASR	12	Credit Call Merchant Fee - monthly per meter charge
APM-2052SR	12	KORE Network CDMA 10mb - monthly per meter charge

TERMS & CONDITIONS

DISCLAIMERS

1. Amano McGann assumes that all existing electrical conduit, power cabling, inductive loops, and data cable are serviceable and sufficient for a completely operational system. This quotation does not include supply nor the installation of the aforementioned items.
2. Each meter requires an annual subscription fee to cover the hosted software, Credit Call merchant fee, and cellular communications. The first year's fees are included in this proposal. The \$720/meter annual fee will be billed annually.

PROVIDED BY OTHERS (EXISTING MAY BE SUFFICIENT)

1. Power circuits and wiring provided to traffic islands in accordance with Amano McGann specifications and layout drawings.
2. Concrete traffic islands in accordance with Amano McGann layout drawings
3. Traffic safety bollards in accordance with Amano McGann layout drawings.
4. Merchant account with a Credit Card Processor (Clearing House) required for credit card transactions.

INSTALLATION

NOT INCLUDED

PRODUCT DELIVERY

1. Estimated eight to ten week lead time (after down payment is received) for product delivery from Amano factory and 3rd party vendors.
2. Upon delivery and receipt of materials, property owner must provide a secure storage area for said materials throughout duration of the installation.

CHANGE ORDERS

Any alteration or deviation from the above specifications, including but not limited to any such alteration or deviation involving additional material and/or labor costs, will be executed only upon a written order for same, signed by both Buyer and Amano McGann, and if there is any charge for such alteration or deviation, the additional charge will be added to the contract price of this contract.

CANCELLATION & RETURNS

Customer may not cancel the accepted, executed quotation/contract without the written consent of Amano McGann. If Amano McGann approves a cancellation or return, Customer agrees to pay a minimum 25% cancellation/restocking charge. All sales involving customized products are non-cancelable and are final.

BONDING, INSURANCE & LIQUIDATED DAMAGES

1. Any bonding requirements are not included in this quotation and shall be provided at an additional charge based upon scope.
2. Any insurance requirements outside of standard coverage's carried by Amano McGann are not included in this quotation and shall be provided at an additional charge based upon additional requirements and term of coverage.
3. Liquidated damages are not included in this quotation.

WARRANTY

One year parts and labor, not including drivetime and mileage, for defects in materials or manufacture from date of delivery to ownership's property. Warranty does not cover damage or malfunctions resulting from acts of God, collision, vandalism, misuse, electrical surges or power failure, use of non-manufacturer approved supplies.

PAYMENT TERMS

One-half down payment due upon acceptance of quotation.
Remainder to be invoiced upon shipment of equipment – net 10 days.
Products are ordered upon receipt of one-half deposit payment.
Cancellation of contract or P.O. prior to on-site delivery results in a 25% restocking charge.

QUOTATION VALIDITY

This quotation is valid for 60 days. If the quote is accepted after the expiration date, Amano McGann will issue a revised quote.

ACCEPTANCE

The prices, deliverables, specifications and conditions are satisfactory and are hereby accepted. Amano McGann is authorized to perform the work as specified.

To Initiate the ordering process, Please sign below and scan/email to nick.colianni@amanomcgann.com or fax to 612-524-6327.

PROPOSED BY:

Nick Colianni
Sales Executive
2/19/2018

ACCEPTED BY:

Name: _____

Company Name: _____

Title: _____

Date: _____

BASE SYSTEM TOTAL: \$ 15,633.00

OPTION ONE - ADD ADDITIONAL SPRITE MULTI-SPACE METERS (indicate qty if desired) _____

P.O. #: _____

Signature: _____

Amano MSM Sprite

Multi-Space Meter



Digital HD
Advertising



The Amano MSM Sprite terminal powered by Metric answers the needs of the market today and well into the future. This all-new parking terminal has been completely reimagined, combining enhanced functionality with a sleek design. The terminal offers greater security, enhanced power management, a rotatable solar panel and a customizable keypad.

The Sprite offers the latest EMV/PCI compliant payment options, Chip & Pin, Chip & Contactless and Contactless Only – which supports mobile contactless payment technology including Apple Pay®. The new terminal can also accept coins, bills, smart cards and coupons. In addition, the Sprite tariff engine supports real-time dynamic tariff configurations, allowing the operator to structure pricing based on demand and capacity.

Communicating with the Sprite terminal is simple with our user-friendly, back-office system allowing for:

- Real-Time Transactions
- Remote Management
- Tariff Updates
- Time Synchronization
- Function Updates

Key Features

- Pay & Display Parking
- Pay-by-Space Parking
- Pay-by-Plate Parking
- Gated Parking
- LPR Integrated Payments
- Transit Ticketing Solutions

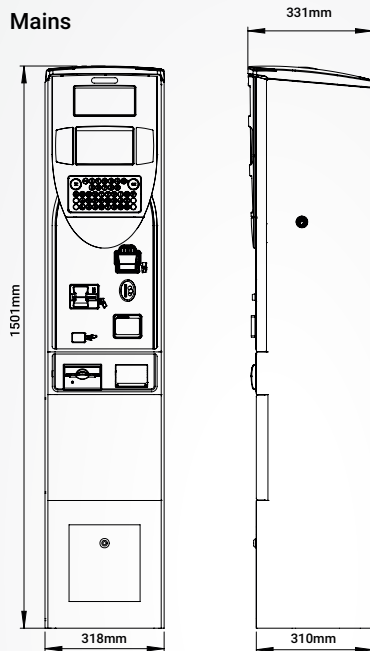
AMANO MSM

powered by **metric**

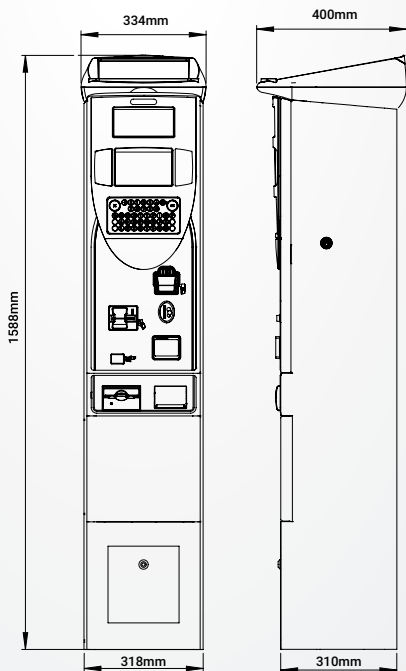
METRIC Sprite

Multi-Space Terminal

Mains



Solar



Manufactured by Metric Parking in an ISO 9001:2008 registered facility.
Specifications are approximate and are subject to change without notice.

SPECIFICATIONS

COMPLIANCE

PCI PA-DSS (Payment Application Data Security Standard) compliant

ELECTRICAL

Power Supply:	110v AC or 220/240v AC single phase Street lighting supply, stand-alone battery operation and solar power with battery backup
Operating Voltage:	12v DC
Solar Power:	Solar charged model supplied with 55Ah battery
Hybrid Dual Power:	Solar + AC Mains electricity
Battery Power:	55Ah battery supplied for solar operation 38 Ah battery supplied for AC operation

ENVIRONMENT

90%+ recyclable ROHS compliant, WEEE applicable, CE mark

Operating Temperature:	-13°F to 140°F (-25°C to +60°C)
Humidity:	Up to 95% (non-condensing)

HOUSING

Height:	59.09" (1501mm)
Width:	12.72" (318mm)
Depth:	12.20" (310mm)
Weight:	Approximately 217 lbs. (98.4 kg)
Construction:	Welded reinforced treated steel
Cabinet Finish:	Standard color: Black. Optional colors: Green, Grey, Blue, Red and custom colors available
Display:	5.7" SD mono screen 5.7" SD color screen 7" HD color screen 8.4" HD color touch screen (mains only)

PAYMENT SYSTEMS

Coins, bills, chip & pin, credit/debit cards, tokens, contactless credit cards, contactless smart cards

Coin Acceptance:	15 channel coin validator, multi-currency capacity
Coin Box:	4,500 coin capacity (US quarters), self-locking, exchangeable
Bill Validator:	Up to 16 currency values in 64 international banknotes
Cash Vault:	6 litre coin box/5 litre with banknote acceptor Banknote Acceptor 600 or 1,000 capacity

TICKETS

Ticket Capacity:	4,000 ticket capacity, 5,500 with ECO paper
Ticket Printing:	Thermal 8 dots/mm graphic printing
Ticket Size:	Single ticket - 2.36"W x 2.36"L (60 mm x 60 mm)

SCANNER

Barcode scanner (coupons, event prepay)

SECURITY

Electronic locking

HEATER (Mains electrical only)

Standard - thermostatically controlled, optional vault area heater

Amano Mi-Office



Comprehensive Back Office

Mi-Office enables centralized remote management of parking pay stations, accessible from any web enabled device. Amano's reporting technology provides information vital to maximizing revenue, controlling costs and efficient deployment of personnel.

TWO-WAY COMMUNICATION

Two-way communication between Mi-Office and parking pay stations allows the operator complete management of their machine stock over 3G, GPRS, LAN and 4G networks. Information transmitted includes:

- all operational warnings and machine alarms
- details of low ticket stock
- coin box status
- comprehensive log of all transaction data

LIVE DASHBOARD

Mi-Office presents a live interactive dashboard for instant visibility of revenue data, machine status and performance notifications with a clear graphical display of parking terminal data. The dashboard is user-configurable to show key snapshot reports.

DYNAMIC REPORTING

Quickly and easily generate reports and graphs and export to CSV, HTML or PDF format. Users can filter by multiple parameters to generate custom reports.

HOSTING FLEXIBILITY

Choose hosting by Amano, or by the customer. Whichever hosting option you select, Mi-Office is always accessible via a web browser anytime, anywhere.

AMANO MSM

powered by **metric** 



Instant visibility of
your parking terminals

Amano Hosted Service



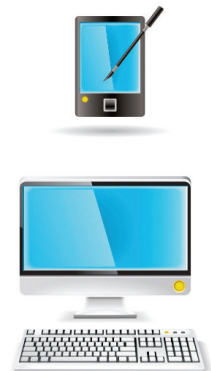
3G/4G



Hosting Site



Internet



Web Browser

Customer Hosted



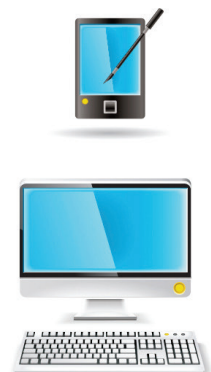
3G/4G



Local Service



Internet



Web Browser

City of Deadwood
Downtown Master Plan
Civil Improvements

1.0 Utilities

1.1 Storm Sewer Improvements	
1.1.1 Remove Curb Inlet Frame & Grate	(See Section 3)
1.1.2 F&I Curb Inlet Frame & Grate	\$96,000
1.1.3 Remove & Reset Manhole Frame & Cover	\$2,400
1.1.4 Adjust Inlet Box	\$18,000
1.2 Sanitary Sewer Improvements	
1.2.1 Remove Manhole	(See Section 3)
1.2.2 Remove & Reset Manhole Frame & Cover	\$17,000
1.2.3 F&I 60" Precast Manhole	\$84,000
1.2.4 Remove and Replace MH Cone Section	\$18,000
1.3 Water Main Improvements	
1.3.1 Remove Fire Hydrant w/ Aux. Valve	(See Section 3)
1.3.2 Remove Fitting (Bend, Tee, Valve)	(See Section 3)
1.3.3 F&I Fire Hydrant w/ Aux. Valve & Bends	\$102,000
1.3.4 F&I Gate Valves	\$131,000
1.3.5 F&I Tee w/ Restraint & CP	\$39,500
1.3.6 F&I Fitting w/ Restraint & CP	\$66,000
1.3.7 Replace Water Main @ Culvert Bridge	\$90,000
1.3.8 F&I Water Service Tee	\$279,000
1.3.9 F&I Water Service Valves	\$200,000
1.4 Electrical Improvements	
1.4.1 Signal Upgrades	\$152,800
1.4.2 Street Lighting Upgrades (underground only)	\$201,850
1.5.1 Misc. Unforeseen Utility Main Repairs	\$500,000

2.0 Surfacing

2.1 Street Surfacing	
2.1.1 Main Street	\$2,364,200
2.1.2 Side Streets	\$541,868
2.2 Bumpouts	
2.2.1 Mid-block	\$85,000
2.2.2 Corner	\$260,000
2.3 Pavement Markings	
2.3.1 Stop Bars & Crosswalks	\$18,720

3.0 Removals

3.1 Street Surfacing	
3.1.1 Main Street	\$205,525
3.1.2 Side Streets	\$49,906
3.1.3 Bumpouts	\$43,200
3.2 Utilities	
3.2.1 Storm Sewer	\$9,600
3.2.2 Sanitary Sewer	\$4,000
3.2.3 Water	\$181,000

4.0 Street Scape

4.1 Removable Bollards (Install only)	\$96,000
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5.0 Total

5.1 Civil Improvements	\$5,856,569
5.2 Construction Contingency (35%)	\$2,049,799
5.3 Design/Construction Admin/Legal (15%)	\$1,185,955
5.3 Total Civil Improvements Estimate	\$9,092,323



Quote

Job Name: Deadwood Decorative Pole Replacement

Quote # : 18-11544-1

Quote Label: Initial Version

Job Location: Deadwood, South Dakota

Issue Date: 1/14/2019

Good Through: 2/7/2019

Quoted By: Dugas, Frank

LUMEN FX
219 N BROADWAY
SUITE A
BILLINGS, MT 59101-1936
(Phn) 406-245-7116
(Fax) 406-245-7703

Quoted To: LUMEN FX
219 N BROADWAY
SUITE A
BILLINGS, MT 59101-1936

Type	Qty	Manufacturer/Brand	Catalog #	Line Comment	Unit \$	Ext \$
20" BASE POLES REPLACEMENTS						
AL	29	ABL-Antique Street Lamps	PA DW20 12 AB3/14 AB-31-4 ABTMP-455 2-7/8T3 FGIUS-S-ANCM445	Cast Post	\$1,600.00	\$46,400.00
	29	ABL-Antique Street Lamps	PX DW20 12 F5 AB3/14 AB-31-4 ABTMP-455 2-7/8T3 FGIUS-S-ANCM445	Alternate Extruded Shaft	\$1,357.80	\$39,376.20
	29	ABL-Antique Street Lamps	DW36/4T 102425 ANCM445	Custom Deadwood Five Fixture Crossarm.	\$853.35	\$24,747.15
	116	ABL-Antique Street Lamps	S14 INV 100S MED PWS TB1	Outer Globe, Outer Edges.	\$366.70	\$42,537.20
	29	ABL-Antique Street Lamps	S16 100S MED PWS TB1 (PT-09215)		\$384.45	\$11,149.05
12" BASE POLES REPLACEMENTS						
AL	10	ABL-Antique Street Lamps	PA DW12 12 AB3/6-1/2 AB-31-4 ABTMP-575 2-7/8T3 FGIUS-S ANCM445	Cast Post	\$1,540.00	\$15,400.00
	10	ABL-Antique Street Lamps	PX DW12 12 S5 AB3/6-1/2 AB-31-4 ABTMP-575 2-7/8T3 FGIUS-S ANCM445	Alternate Extruded Shaft	\$1,111.15	\$11,111.50
	10	ABL-Antique Street Lamps	DW36/2T 102426 ANCM445	Custom Deadwood Three Fixture Crossarm.	\$526.70	\$5,267.00
	20	ABL-Antique Street Lamps	S14 INV 100S MED PWS TB1	Outer Globe, Outer Edges.	\$366.70	\$7,334.00
	10	ABL-Antique Street Lamps	S14 100S MED PWS TB1 (PT-09215)		\$330.00	\$3,300.00
12" BASE POLES (NEW INSTALLATIONS)						
AL	10	ABL-Antique Street Lamps	PA DW12 12 AB3/6-1/2 AB-31-4 ABTMP-575 2-7/8T3 FGIUS-S ANCM445	Cast Post	\$1,540.00	\$15,400.00
	10	ABL-Antique Street Lamps	PX DW12 12 S5 AB3/6-1/2 AB-31-4 ABTMP-575 2-7/8T3 FGIUS-S ANCM445	Alternate Extruded Shaft	\$1,111.15	\$11,111.50



Quote

Job Name: Deadwood Decorative Pole
Replacement

Quote # : 18-11544-1

Quote Label: Initial Version

Job Location: Deadwood, South Dakota

Issue Date: 1/14/2019

Good Through: 2/7/2019

Quoted By: Dugas, Frank

Type	Qty	Manufacturer/Brand	Catalog #	Line Comment	Unit \$	Ext \$
	10	ABL-Antique Street Lamps	DW36/2T 102426 ANCM445	Custom Deadwood Three Fixture Crossarm.	\$526.70	\$5,267.00
	20	ABL-Antique Street Lamps	S14 INV 100S MED PWS TB1	Outer Globe, Outer Edges.	\$366.70	\$7,334.00
	10	ABL-Antique Street Lamps	S14 100S MED PWS TB1 (PT-09215)		\$330.00	\$3,300.00

Notes

- * Prices subject to manufacturers terms and conditions of sale.
- * The prices are for the exact catalog numbers listed on the quote. Any deviation could change the price.
- * Use of this quote is your acceptance that all necessary items are included.
- * Thank you for the opportunity to quote you for your lighting needs.

Freight/Order Terms

Acuity Brands Lighting

Acuity Brands Lighting: (excludes Peerless, and Sunoptics)

Freight Minimum:

\$1,000

Qualifies: Yes

S16 Luminaire



S16 D

SPECIFICATIONS

CONSTRUCTION

The luminaire has a sphere globe in white acrylic with a cast aluminum base/ballast housing. Optional clear acrylic and clear or white polycarbonate are available. Luminaire is available with a large variety of base styles from which to select. An optional spun aluminum top is available. All hardware is stainless steel.

INSTALLATION

The luminaire mounts on a 3" O.D. x 3" tall tenon with six, 1/4-20 socket set screws. Luminaire with the B series luminaire base mounts on a 8.25" O.D. ring. The globe is removed from the luminaire base by loosening 4 stainless steel set screws, providing complete access to the lamp and ballast assembly. Ballast assembly has tool-less access and is furnished with a quick disconnect. To access ballast assembly, release spring tab, rotate cover, then lift out ballast tray.

OPTICS

Luminaire is furnished with an H.I.D. ballast and socket assembly or a 42 watt compact fluorescent socket and ballast. The luminaire is UL listed and labeled as suitable for wet locations. Sockets are glazed porcelain, medium base, with a copper alloy nickel-plated screw shell and center contact. Ballasts are core and coil, high power factor, regulating type.

FINISH

The luminaire has a powder coat finish utilizing a premium TGIC polyester powder. The finish is a three-stage process which consists of drying, powder application and curing. Before coating, the parts are treated with a five-stage pretreatment process, consisting of a heated alkaline cleaner, rinse, phosphate coating, rinse and sealant.

ANTIQUE Street Lamps™

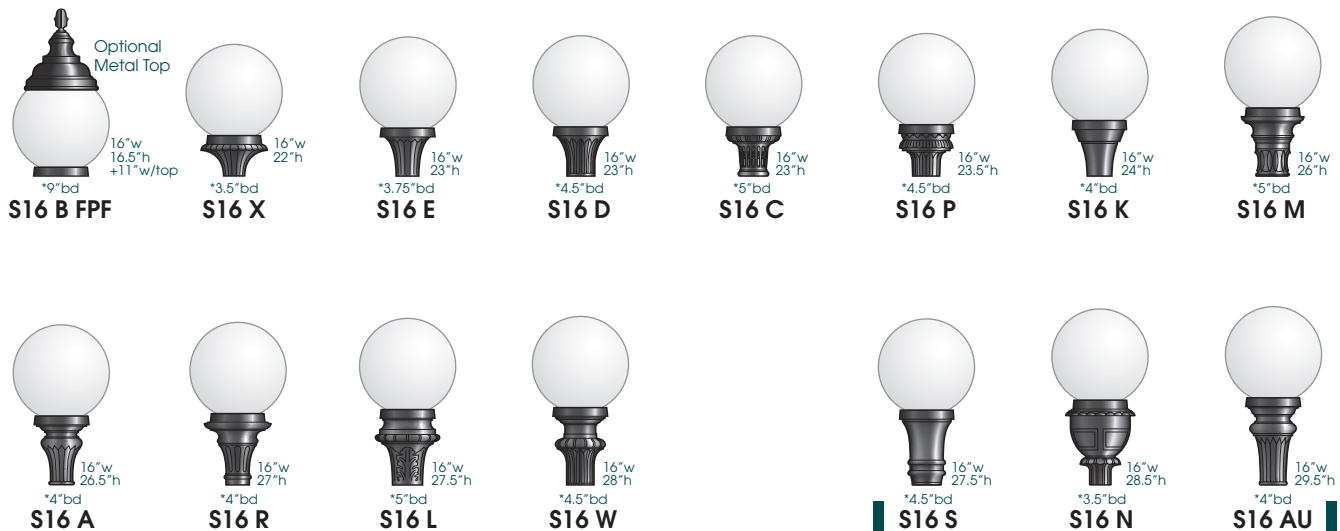
An **Acuity** Brands Company

2011-B W. Rundberg Lane • Austin, TX 78758
ph. (800)410-8899 • fax (512)977-9622
www.antiquestreetlamps.com
Acuity Lighting Group, Inc.

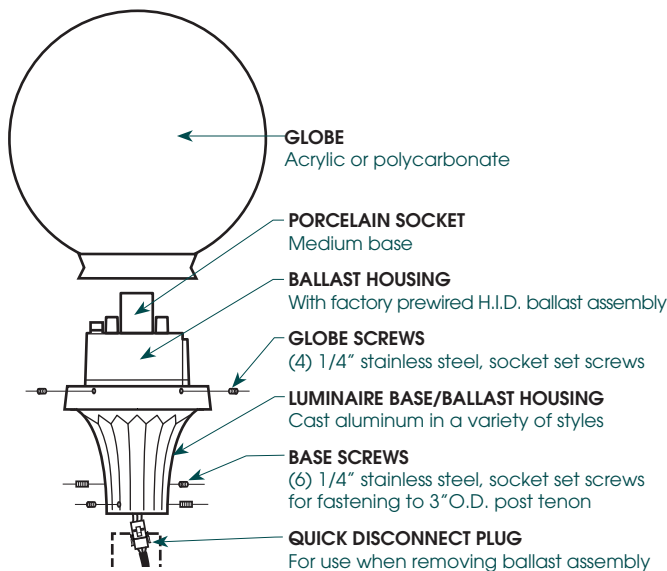
S16 Luminaire

S16 WITH LUMINAIRE BASE CHOICE

* bd dimensions are the diameter at the base



Twist & Lock photoelectric cell options available with luminaire bases S, N and AU only.



TOOL-LESS BALLAST HOUSING



LUMINAIRE BASE WITH BALLAST HOUSING AND SOCKET



REMOVING BALLAST ASSEMBLY

Note: Lamp is not furnished with the luminaire.

ORDERING GUIDE

Sample Catalog no: S16 E 150M MED AWS GR5 TB1 PEB1 ANBK

Series	Wattage/Lamp	Lens Material	Distribution	Voltage ¹	Options	Finish ²
S16 B ⁴	Metal Halide	AWS Acrylic, White Smooth (Std)	GR5 Glass refractor, Type V	TB1 120 volt	MT Metal Top	ANBK Black
S16 X	50M MED	PWS Polycarbonate, White Smooth	GR3 Glass refractor, Type III	TB2 208 volt	HS House Side Shield	ANDB Dark Bronze
S16 E	70M MED	ACS Acrylic, Clear Smooth	LBR5 Low Bright, Refl., Type V	TB3 240 volt	PEB1 Photoelectric cell button 120v	ANDG Dark Green
S16 D	100M MED	PCS Polycarbonate, Clear Smooth		TB4 277 volt	PEB2 Photoelectric cell button 208, 240, 277v	ANPP Prime Painted
S16 C	150M MED			347 347 volt	PER ³ Twist-Lock Photocontrol Receptacle	CM Custom Match
S16 P				480 ¹ 480 volt	PE1 ³ NEMA Twist & Lock PE 120, 208, 240v	CS Custom Select RAL colors
S16 K	High Pressure Sodium				PE3 ³ NEMA Twist & Lock PE 347v	
S16 M	50S MED				PE4 ³ NEMA Twist & Lock PE 480v	
S16 A	70S MED				PE7 ³ NEMA Twist & Lock PE 277v	
S16 R	100S MED				SF Single Fuse	
S16 L	150S MED				DF Double Fuse	
S16 W						
S16 S ³	Compact Fluorescent					
S16 N ³	42TRT					
S16 AU ³						

NOTES:
1. Multi-tap Ballast (120, 208, 240, 277v), (120, 277, 347v in Canada).
For wattages under 70S or 70M contact ASL for voltage availability.
2. For finish and color options, see Finish section in catalog or contact ASL.
3. Twist & Lock Photo Control only available with N, S, and AU bases.

ANTIQUE Street Lamps™

An Acuity Brands Company



Price Quotation

Quote No. 0141195
Quote Date 12/18/2018

SOLD TO: 01-WIN2654

WINTER & COMPANY
3980 BROADWAY ST.
SUITE 103, PMB 140
BOULDER, CO 80304

SHIP TO: 9613

DEADWOOD MAIN ST MSTR PLN BND
ADDRESS
DEADWOOD, SD 57732

Confirm To: JULIE HUSBAND

Phone: 303-440-8445 Ext:

Fax:

Email Address: julie@winterandcompany.net

Ship To Contact: JULIE HUSBAND

Phone: (303) 440-8445 Ext:

Fax:

Email Address: julie@winterandcompany.net

Customer P.O.	Terms of Quotation	Salesperson	Specifier
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50% DEP/ BAL PAY BEFORE SHIP

COLORADO TERRITORY

Item / Item Description	Qty	UM	Unit Price	Amount
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FREIGHT EXPIRES 1-18-19

QSCLS4836P	10.00	EACH	1,408.00	14,080.00
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48" SQ. X 36" HT. PRECAST CONCRETE CLASSIC SERIES PLANTER.
C - _____, (HYCRETE), T - _____, STANDARD SEALER 4200
STANDARD 2" DIA DRAIN HOLE.

APPROX 1,876 LBS.

DELIVERED ON PALLETS

SEALANT B	10.00	EACH	51.00	510.00
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CHARGE FOR INTERIOR WATER SEALANT IN A 31"-60" ROUND OR SQUARE PLANTER.
** QUICK CRETE RECOMMENDS INTERIOR WATERSEALING ON ALL PLANTERS ***

QSCLS3026P	52.00	EACH	678.00	35,256.00
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30 SQ X 26 HT CLASSIC SERIES PLANTER.
C - _____, (HYCRETE), T - _____, STANDARD SEALER 4200
STANDARD 2" DIA DRAIN HOLE.

APPROXIMATELY 584 LBS.

DELIVERED ON PALLET

SEALANT A	52.00	EACH	35.00	1,820.00
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CHARGE FOR INTERIOR WATER SEALANT IN A 9"-30" ROUND OR SQUARE PLANTER.
** QUICK CRETE RECOMMENDS INTERIOR WATERSEALING ON ALL PLANTERS**

PLEASE NOTE

A 50% DEPOSIT OF \$ 25,833.00 IS REQUIRED BEFORE PRODUCTION.

DELIVERY REQUESTED ON: _____
(PLEASE FILL IN THE REQUESTED DELIVERY DATE ABOVE)

PRICE DOES NOT INCLUDE SALES TAX. QUICK CRETE DOES NOT COLLECT ANY SALES TAX
OUTSIDE OF CALIFORNIA. ALL SALES TAX ARE THE RESPONSIBILITY OF THE PURCHASING
PARTY.

PRICE INCLUDES SHIPPING VIA COMMON CARRIER. CUSTOMER TO PROVIDE FORKLIFT,
PALLET JACK OR CRANE FOR OFFLOADING AND PLACEMENT.
DUE TO THE FLUIDITY OF FREIGHT EXPENSES, ALL EXPIRED QUOTES WILL BE SUBJECT TO A
POSSIBLE DELIVERY COST INCREASE. ORDERS NOT SHIPPED WITHIN 90 DAYS FROM RECEIPT
BY QUICK CRETE WILL BE SUBJECT TO A POSSIBLE DELIVERY INCREASE.

MANUFACTURER'S ESTIMATE

QUICK CRETE IS NOT RESPONSIBLE FOR THE TAKE-OFF PROVIDED, DIMENSIONS, QUANTITIES,
APPROPRIATENESS OF THE PRODUCTS FOR CUSTOMER'S APPLICATION, ETC....WHICH ARE
THE RESPONSIBILITY OF THE CUSTOMER.



Price Quotation

Quote No. 0141195
Quote Date 12/18/2018

SOLD TO: 01-WIN2654

WINTER & COMPANY
3980 BROADWAY ST.
SUITE 103, PMB 140
BOULDER, CO 80304

SHIP TO: 9613

DEADWOOD MAIN ST MSTR PLN BND
ADDRESS
DEADWOOD, SD 57732

Confirm To: JULIE HUSBAND

Phone: 303-440-8445 Ext: Fax:

Email Address: julie@winterandcompany.net

Ship To Contact: JULIE HUSBAND

Phone: (303) 440-8445 Ext: Fax:

Email Address: julie@winterandcompany.net

Customer P.O.	Terms of Quotation	Salesperson	Specifier
	50% DEP/ BAL PAY BEFORE SHIP	COLORADO TERRITORY	

Item / Item Description	Qty	UM	Unit Price	Amount
-------------------------	-----	----	------------	--------

When applicable, price includes delivery and offloading with Quick Crete's crane equipped truck. Placement, if not accessible with Quick Crete's crane truck, is required by others. Palletized products will be offloaded only. Customer will provide the necessary equipment for offloading shipments requiring the use of flatbed common carriers. Customer is responsible for supplying one person to assist the driver. All installation and assembly are required by others. Customer must provide any and all necessary permits. Deliveries are made "RAIN" or "SHINE". Customer shall be responsible for count, model numbers, and/or specifications on all written or verbal quotations by Quick Crete Products Corp. Quick Crete Products Corp. reserves the right to change price if quantity changes.

Quick Crete Products Corp. is a material supplier, not a contractor. If rescheduling delivery is necessary, customers must notify Quick Crete Products Corp. at least 72 hours prior to delivery to avoid penalty. Failure to do so may require the customer to pay a restocking fee of 10% of the total order.

This price quote expires on January 18, 2019

Plus Any Other Applicable Taxes. For Accounting inquiries or lien releases, please send your fax to (951) 734-8154. **Please issue all purchase orders to Quick Crete Products**

The above Price Quotation is subject to the Terms and Conditions contained on the following page, and are part of this Agreement. Customer acknowledges that the Terms and Conditions have been read and approved. **Credit terms subject to change pending account verification.**

Net Amount:	51,666.00
Sales Tax:	0.00
Total Amount (USD)	51.666.00



Price Quotation

Quote No. 0141195
Quote Date 12/18/2018

SOLD TO: 01-WIN2654

WINTER & COMPANY
3980 BROADWAY ST.
SUITE 103, PMB 140
BOULDER, CO 80304

SHIP TO: 9613

DEADWOOD MAIN ST MSTR PLN BND
ADDRESS
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Confirm To: JULIE HUSBAND

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Customer P.O.	Terms of Quotation	Salesperson	Specifier
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50% DEP/ BAL PAY BEFORE SHIP

COLORADO TERRITORY

Item / Item Description	Qty	UM	Unit Price	Amount
-------------------------	-----	----	------------	--------

TERMS & CONDITIONS

QUICK CRETE PRODUCTS PURCHASED NEW ARE GUARANTEED FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP, UNDER NORMAL USE, FOR A PERIOD OF ONE YEAR FROM THE ORIGINAL DATE OF DELIVERY. DAMAGE INCURRED FROM VANDALISM AND ACTS OF GOD ARE NOT COVERED. REPLACEMENT AND REPAIR SHALL BE AT THE DISCRETION OF QUICK CRETE PRODUCTS CORP. QUICK CRETE SHALL NOT BE LIABLE TO YOU OR ANY OTHER PARTY FOR LOSS OF PROPERTY, LOSS OF USE, LOSS OF SAVINGS, LOSS OF PROFITS, INSTALLATION CHARGES, SPECIAL DAMAGES, INCIDENTAL DAMAGES, CONSEQUENTIAL DAMAGES, DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE MATERIAL, INDIRECT OR OTHER SIMILAR DAMAGES ARISING FROM BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, OR ANY OTHER LEGAL THEORY; EVEN IF QUICK CRETE OR ITS AGENT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSS AND/OR DAMAGES.

In the event of a claim for defective goods, Quick Crete shall be allowed to inspect such materials or upon request shall be furnished a sample of such materials. Goods claimed to be defective shall not be returned without Quick Crete's written prior-authorization, Quick Crete is only liable to replace, or credit you, at Quick Crete's option, for defective materials. Where you are to inspect as a condition of purchase, you shall be responsible for any charges for inspection, analysis or tests.

Quick Crete shall not be liable for its failure to perform due to strikes, labor difficulties, judicial action, fire, flood, war, sabotage, riot, breakdowns or failure of plant or equipment, delays in or lack of transportation, government allocations, delays of supplies or unavailability of material or any other cause beyond Quick Crete's control. If Quick Crete, in its discretion, determines that its performance would result in Quick Crete's incurring a loss because of causes beyond Quick Crete's control, Quick Crete may terminate this agreement, without penalty or obligation to you.

Shipments and deliveries shall be subject to approval of Quick Crete's credit department. Quick Crete reserves the right to demand you give a security interest in your inventory to Quick Crete before making any shipment to you that is not COD. If you fail to fulfill the terms of payment, Quick Crete may defer further shipments or may at its option cancel any unshipped balance. No failure of Quick Crete to exercise any right accruing from any default by you shall impair Quick Crete's rights in the event you subsequently default. In the event Quick Crete has a security interest in your inventory, this invoice shall become a demand notice.

Quick Crete shall retain title of the goods sold until the goods are paid for in full. If payment is not made when due, Quick Crete may, at its option and without notice, enter the premises where the goods may be located and repossess the goods. This reservation of title in Quick Crete and the right to repossess shall be in addition to any and all other remedies Quick Crete may have under law or equity. Any and all of the above mentioned remedies may be used at the same time and the use of any of these shall not constitute a waiver of the right to use any other available remedies.

This transaction shall be governed by and construed in accordance with the laws of the State of California, without regard to principles of conflicts of law. The parties expressly consent to be subject to the exclusive jurisdiction of the California State courts. The parties agree that receipt of an order in Riverside County constitutes performance, and that Riverside County, Corona Court is the proper venue.

You agree your acknowledgement on the bottom of this page shall constitute your acceptance of the terms and conditions contained herein and/or referred to in Quick Crete's Price Quotation. You agree to pay within the terms specified on the invoice/price quotation. Any delinquent account will bear interest at 2% per month, or 24% per year. You agree to pay all reasonable collection costs and attorney's fees incurred in collection of this account.

Any excises, levies or taxes which Quick Crete may be required to pay or collect under any existing or future law, upon or with respect to the sale, purchase, delivery, storage, processing, use, consumption or transportation of any of the material covered hereby shall be your responsibility, and you agree to pay the amount thereof to Quick Crete.

The above Terms and Conditions represent the entire agreement between Quick Crete and the customer with respect to the sale of goods supplied hereunder and cannot be modified except by a new written contract signed by both Quick Crete and the customer. By signing below, customer agrees to be contractually bound for the above mentioned products and / or services.

Alli Hill
Quick Crete Products Corp.

12/19/2018
Date

Customer Authorization
Date

PRODUCT: **QS-CLS4836P**

WEIGHT: **1,654 Lbs.**
(CUSTOMER TO OFFLOAD IF OVER 6000 Lbs.)

QUANTITY: **—**

- CONCRETE COLOR:
- ☐ QUAIL HILL RED
 - ☐ NATURAL
 - ☐ MISSION WHITE
 - ☐ LATTE
 - ☐ HARVEST
 - ☐ FRENCH GREY
 - ☐ BUNGALOW
 - ☐ ADOBE TAUPE
 - ☐ CUSTOM COLOR

- CONCRETE TEXTURE:
- ☐ CRAFTSMANS ETCH
 - ☐ STRATA

SEALER: **STANDARD SEALER**

Authorized Signature

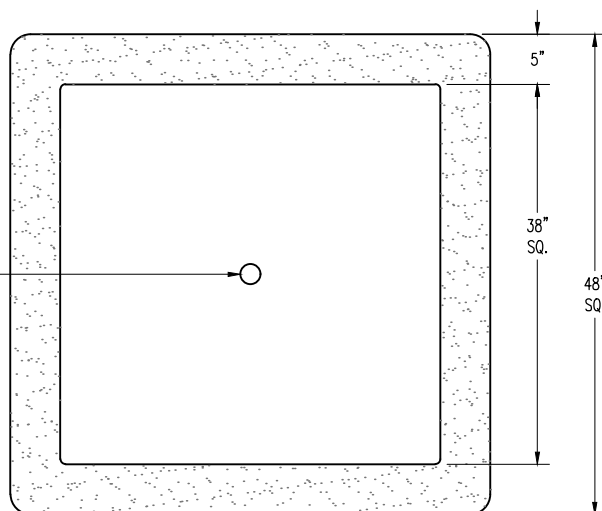
Date

By signing above or stamping this drawing "approved" or "no exception taken" authorization is given to QCP to produce this drawing as shown within a 1/4" tolerance.

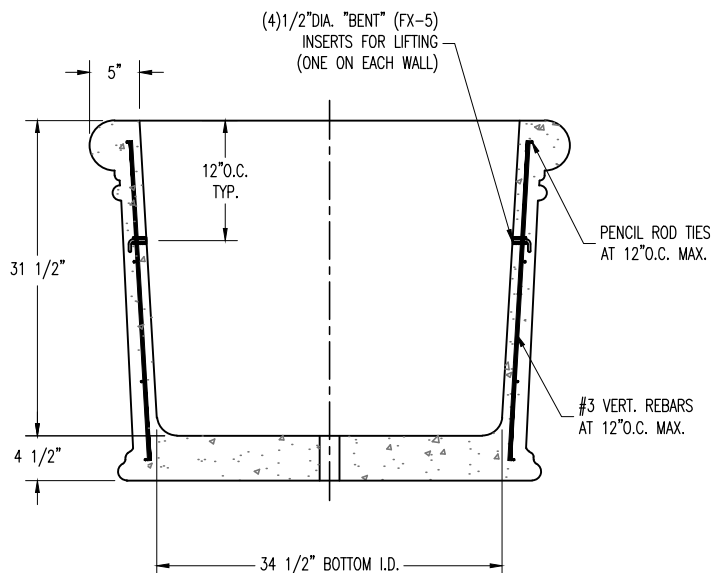
GENERAL PRODUCT NOTES:

E = EXPOSED FINISHED SURFACE
INSTALLATION IS REQUIRED BY OTHERS.
ALL EDGES TO BE EASED.
MANUFACTURING TOLERANCE $\pm 1/4"$.
STD. 2"DIA. DRAIN HOLE
INCLUDES INTERIOR WATER SEALANT

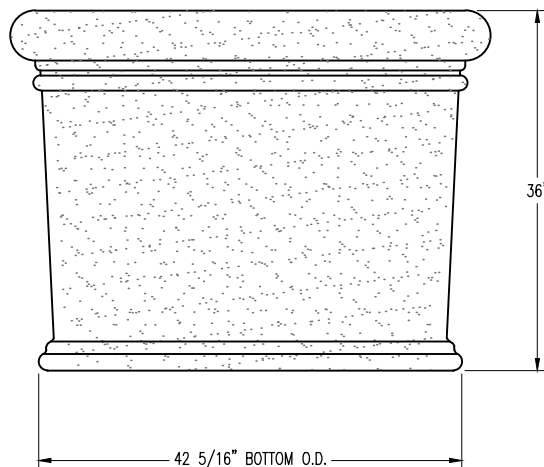
STD. 2"DIA. DRAIN
HOLE. (CENTERED)



PLAN VIEW



SECTION VIEW



ELEVATION VIEW



PLAN TYPE

CONSTRUCTION PLAN

PRODUCT

QS-CLS4836P | SQUARE PLANTER | CLASSIC

PROJECT NAME

DATE

3/21/17

SCALE

5/8" = 1'

PC. NO.

FILE NO.

QS-CLS4836P

DRAWN BY:

S.B.

QC ITEM NO.

SHEET

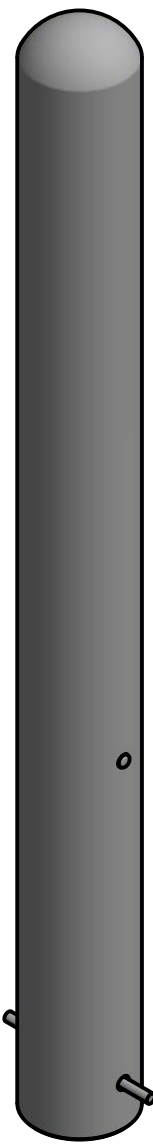
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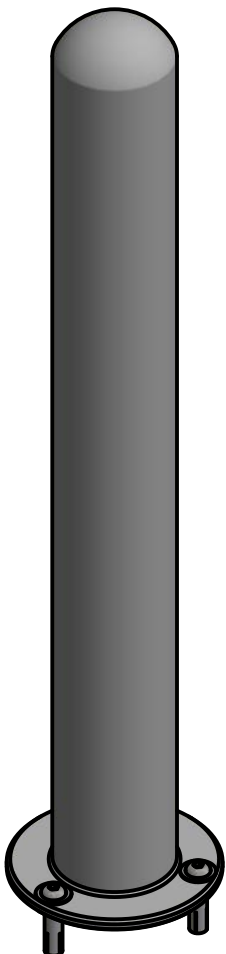
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Bollard Post R-7902

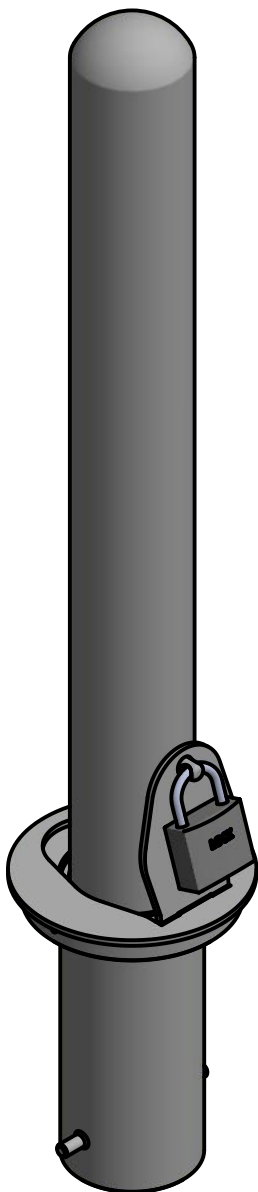
Fixed
Embedded
Mount
(for detail, see sheet 2 of 7)



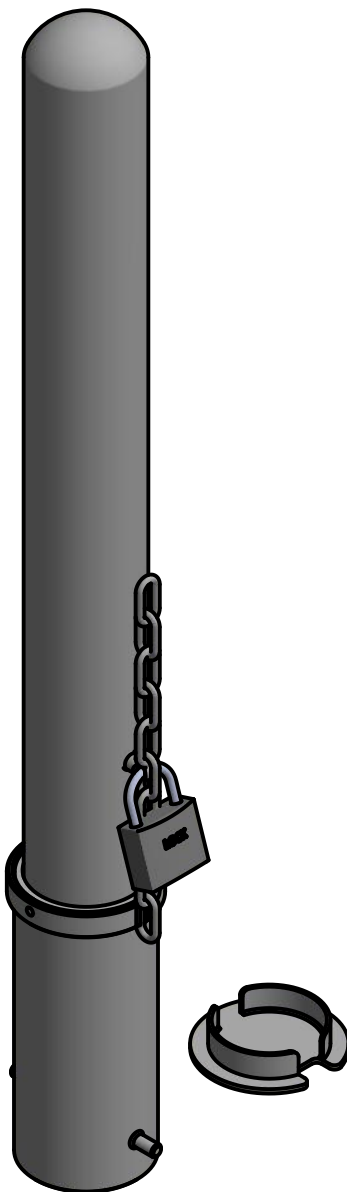
Flanged
Surface
Mount
(for detail, see sheet 3 of 7)



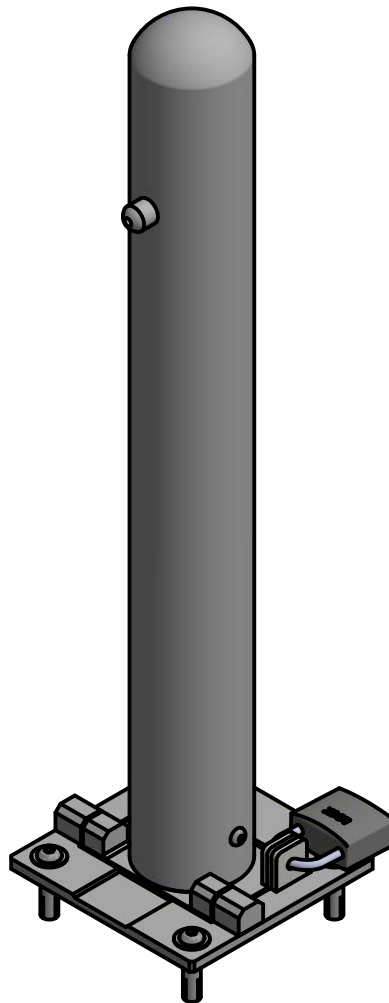
Removable
Receiver
with Lid
(for detail, see sheet 4 of 7)



Removable
Receiver
with Chain
(for detail, see sheet 5 of 7)

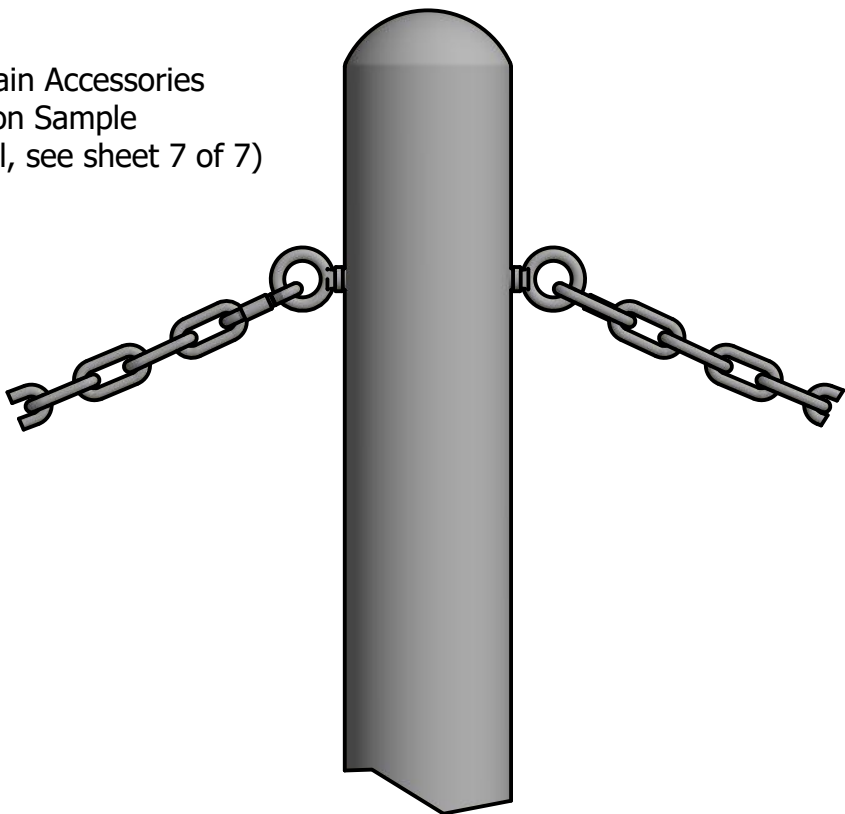


Fold Down
Mount
(for detail, see sheet 6 of 7)



5 Available Mounting Options

5/16" Chain Accessories
Installation Sample
(for detail, see sheet 7 of 7)



Optional Chain Accessories Available



Chain Eye 3/8"
(Powder Coated)



Quick Link Connector
(Powder Coated)



Bollard Chain 5/16"
(Powder Coated)

General Description:

Make a pronounced statement on entry to your streetscape, business, park, school or stadium with the contemporary and practical design of the model R-7902 steel bollard. A staple of the product line, it will complement the aesthetics of almost any architectural style. It can be embedded in new concrete or surface-mounted on existing concrete. For locations where access needs fluctuate, it can also be installed with removable or fold down mountings. The model R-7902 can be finished in one of seven different powder-coated color options and it is kept in stock, available to ship immediately.

Specifications:

Height: 36" (Above Grade)
Base Diameter: 4 3/8"
Weight: 31 lbs (Bollard Post Full Length)
Material: Steel (ASTM A36)

Finish Options:

⊙ Polyester Powdercoated

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

Installation Options:

- Fixed - Embedded Mounting in New Concrete (see sheet 2 of 7)
- Fixed - Flanged in Existing Concrete (see sheet 3 of 7)
- Removable - Receiver with Lid in New Concrete (see sheet 4 of 7)
- Removable - Receiver with Chain in New Concrete (see sheet 5 of 7)
- Removable - Fold Down Mounting in Existing Concrete (see sheet 6 of 7)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

Accessory Options:

- Optional - Chain Accessories Installation Details (see sheet 7 of 7)

Care and Maintenance:

Reliance's line of bollards are finished with a long-lasting powder-coating. Proper care and maintenance are required. Regularly-performed inspections and routine cleaning will ensure that a bollard retains its aesthetic appeal and does not become damaged by the elements.

See Reliance Foundry's maintenance guide at:
www.reliance-foundry.com/bollard/maintenance-bollards

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www.reliance-foundry.com

TITLE

Bollard Post R-7902

SIZE
C

DWG NO
R-7902

REV
C1

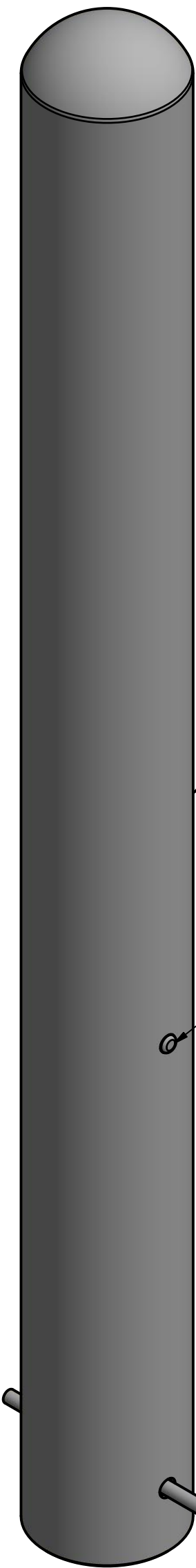
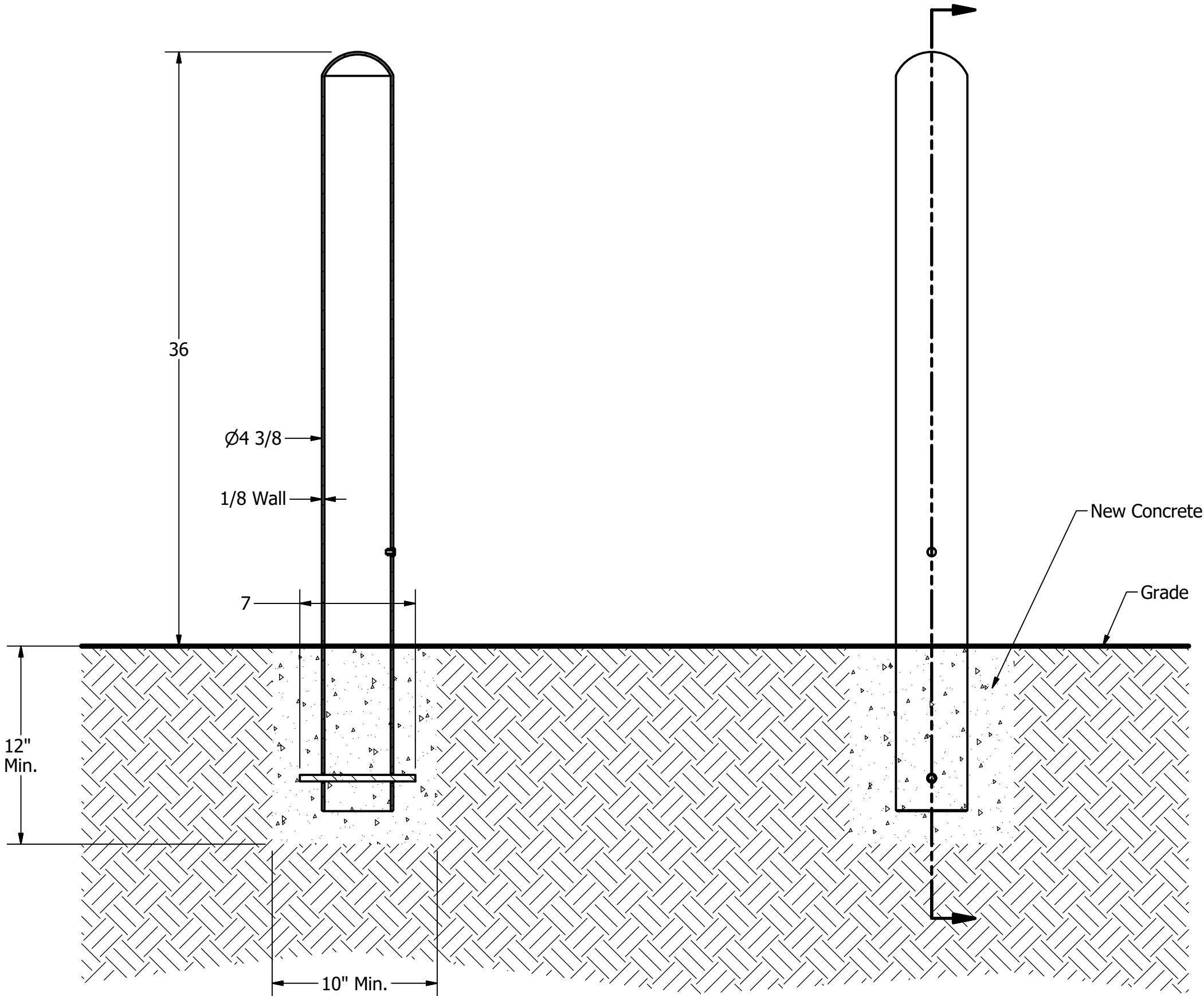
Bollard Post R-7902

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A



General Description:

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Specifications:

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Base Diameter: 4 3/8"
Weight: 31 lbs (Bollard Post Full Length)
Material: Steel (ASTM A36)

Finish Options:

⊙ Polyester Powdercoated

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

Installation Options:

- ⊙ Fixed - Embedded Mounting in New Concrete (see sheet 2 of 7)
- Fixed - Flanged in Existing Concrete (see sheet 3 of 7)
- Removable - Receiver with Lid in New Concrete (see sheet 4 of 7)
- Removable - Receiver with Chain in New Concrete (see sheet 5 of 7)
- Removable - Fold Down Mounting in Existing Concrete (see sheet 6 of 7)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

Accessory Options:

- Optional - Chain Accessories Installation Details (see sheet 7 of 7)

Care and Maintenance:

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Notes:

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- 4) Dimensions provided herein is for reference only. Please consult Reliance Foundry sales professionals if any dimension is critical to your particular installation.
- 5) Reliance Foundry reserves the right to amend design and specifications without prior notice for product improvement.

PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R7902 Fixed Bollard	R7902 Fixed Bollard Body	Steel Powder Coated	31 lbs
2	1	Polyethylene Plug 1/2"	Polyethylene Plug 1/2"	Polyethylene Plastic	
3	1	Steel Rebar	Steel Rebar 10 mm x 7"	Steel Epoxy Coated	3/8 lbs

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TITLE

Bollard Post R-7902

SIZE

C

DWG NO

R-7902

REV

C1

NOT TO SCALE

SHEET 2 OF 7

4

3

2

1

Bollard Post R-7902

General Description:

Make a pronounced statement on entry to your streetscape, business, park, school or stadium with the contemporary and practical design of the model R-7902 steel bollard. A staple of the product line, it will complement the aesthetics of almost any architectural style. It can be embedded in new concrete or surface-mounted on existing concrete. For locations where access needs fluctuate, it can also be installed with removable or fold down mountings. The model R-7902 can be finished in one of seven different powder-coated color options and it is kept in stock, available to ship immediately.

Specifications:

Height: 36" (Above Grade)
Base Diameter: 4 3/8"
Weight: 31 lbs (Bollard Post Full Length)
Material: Steel (ASTM A36)

Finish Options:

⊙ Polyester Powdercoated

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

Installation Options:

- Fixed - Embedded Mounting in New Concrete (see sheet 2 of 7)
- ⊙ Fixed - Flanged in Existing Concrete (see sheet 3 of 7)
- Removable - Receiver with Lid in New Concrete (see sheet 4 of 7)
- Removable - Receiver with Chain in New Concrete (see sheet 5 of 7)
- Removable - Fold Down Mounting in Existing Concrete (see sheet 6 of 7)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

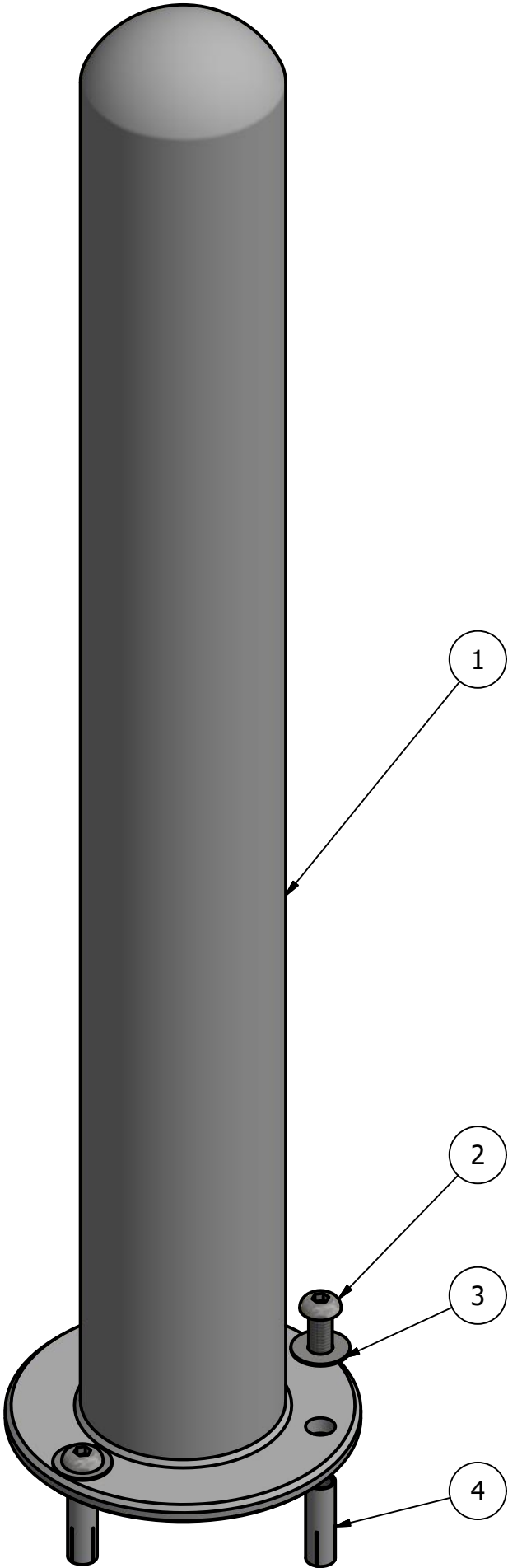
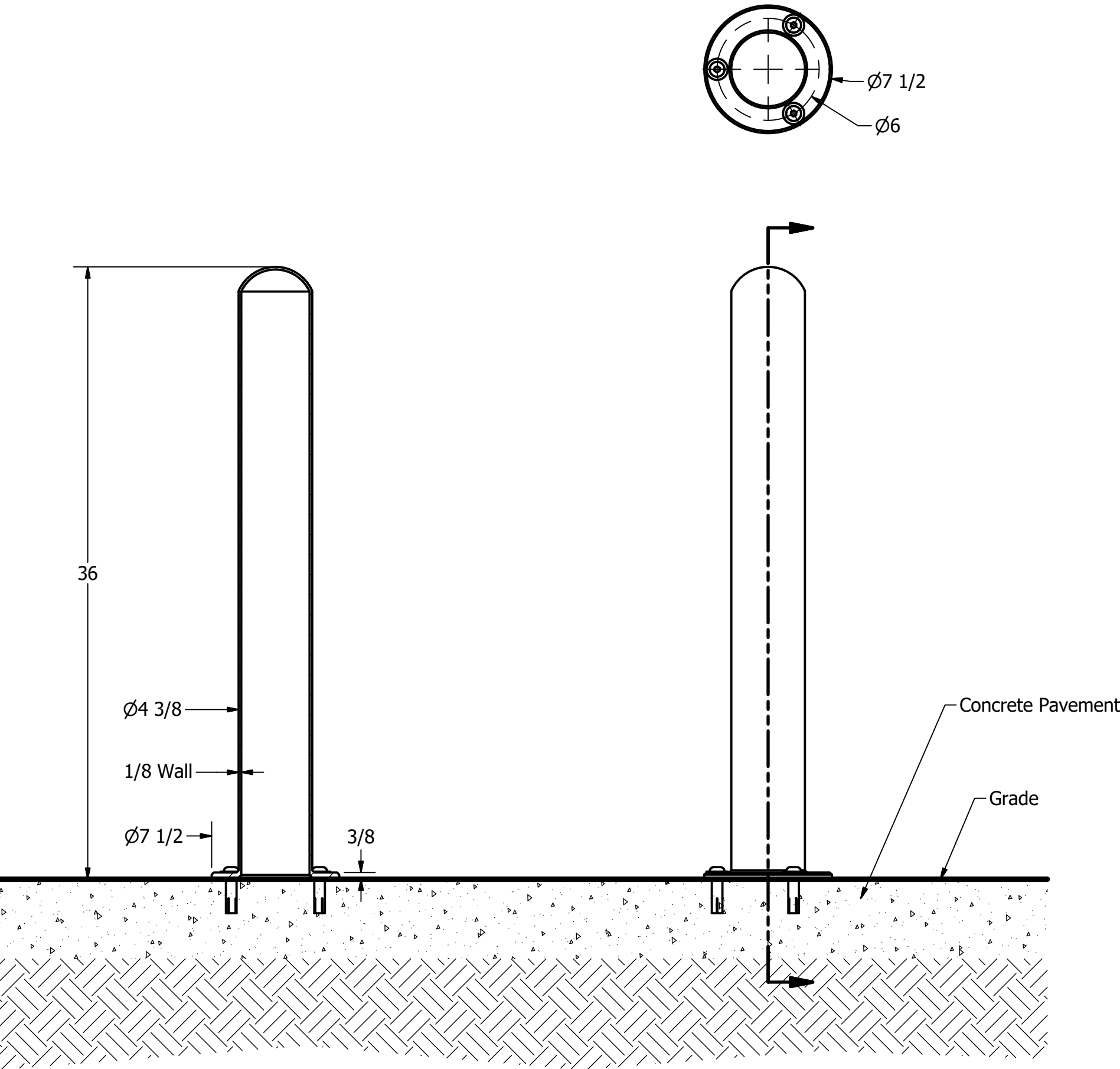
Accessory Options:

- Optional - Chain Accessories Installation Details (see sheet 7 of 7)

Care and Maintenance:

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www.reliance-foundry.com/bollard/maintenance-bollards



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PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R7902 Flanged Bollard	R7902 Flanged Bollard Body	Steel Powder Coated	30 lbs
2	3	Button Head Bolt 1/2" x 1 1/4"	Hexagon Socket Button Head Cap Bolt 1/2" x 1 1/4" - requires 5/16" hex key	Stainless Steel	1/8 lbs
3	3	Stainless Steel Washer 1/2"	Stainless Steel Washer 1/2" OD 1 1/4" Thick .05"	Stainless Steel	
4	3	Drop-in Concrete Insert 1/2"	Drop-in Concrete Insert 1/2" - requires 5/8" x 2" hole (dia. x depth)	Steel Plated	1/8 lbs

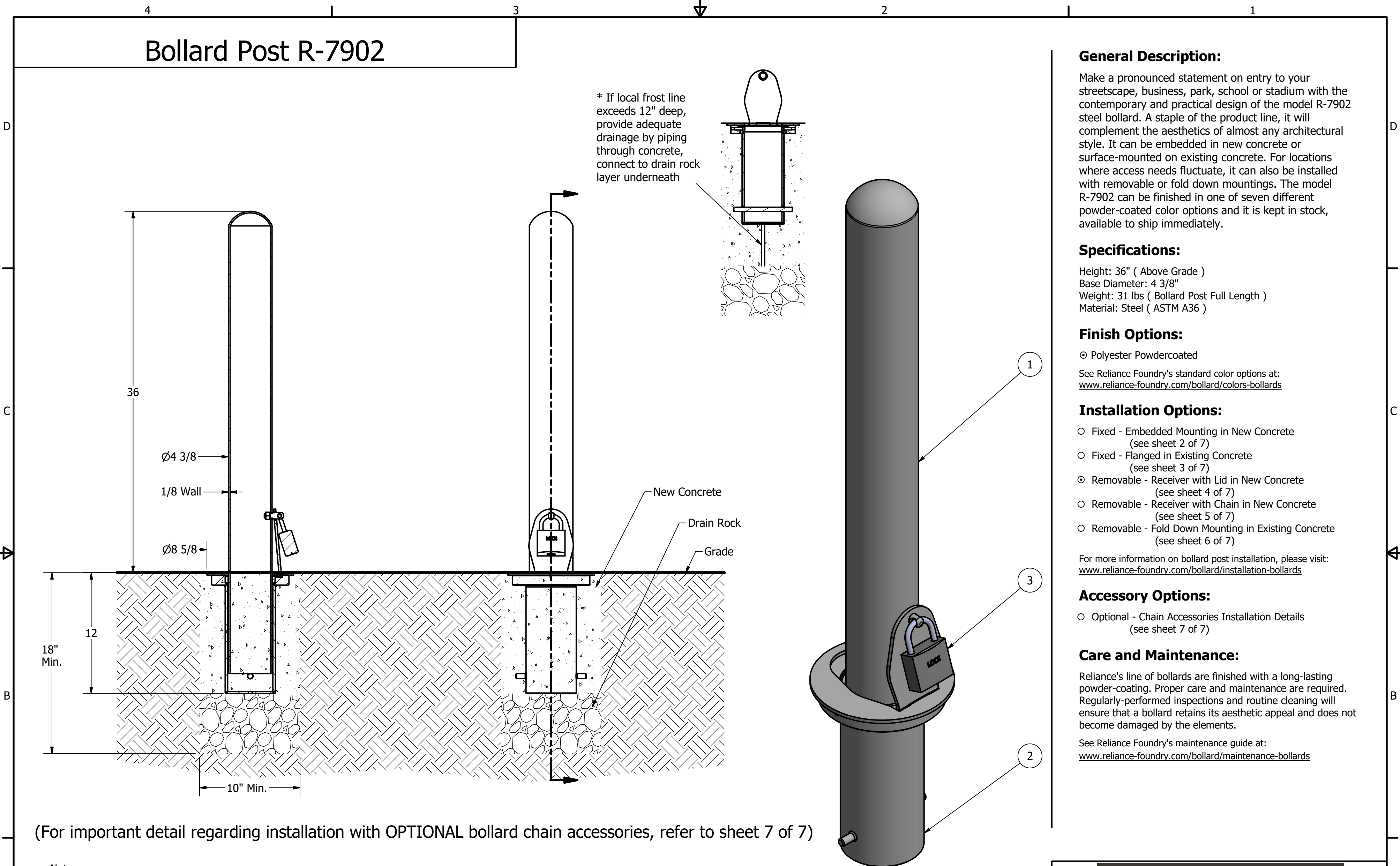
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TITLE			
Bollard Post R-7902			
SIZE		DWG NO	REV
C		R-7902	C1
NOT TO SCALE		SHEET 3 OF 7	

Bollard Post R-7902



General Description:

Make a pronounced statement on entry to your streetscape, business, park, school or stadium with the contemporary and practical design of the model R-7902 steel bollard. A staple of the product line, it will complement the aesthetics of almost any architectural style. It can be embedded in new concrete or surface-mounted on existing concrete. For locations where access needs fluctuate, it can also be installed with removable or fold down mountings. The model R-7902 can be finished in one of seven different powder-coated color options and it is kept in stock, available to ship immediately.

Specifications:

Height: 36" (Above Grade)
Base Diameter: 4 3/8"
Weight: 31 lbs (Bollard Post Full Length)
Material: Steel (ASTM A36)

Finish Options:

⊙ Polyester Powdercoated

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

Installation Options:

- Fixed - Embedded Mounting in New Concrete (see sheet 2 of 7)
- Fixed - Flanged in Existing Concrete (see sheet 3 of 7)
- ⊙ Removable - Receiver with Lid in New Concrete (see sheet 4 of 7)
- Removable - Receiver with Chain in New Concrete (see sheet 5 of 7)
- Removable - Fold Down Mounting in Existing Concrete (see sheet 6 of 7)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

Accessory Options:

- Optional - Chain Accessories Installation Details (see sheet 7 of 7)

Care and Maintenance:

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See Reliance Foundry's maintenance guide at:
www.reliance-foundry.com/bollard/maintenance-bollards

(For important detail regarding installation with OPTIONAL bollard chain accessories, refer to sheet 7 of 7)

- Notes:
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PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R7902 Removable	Bollard R7902 Removable Assembly	Steel Powder Coated	31 lbs
2	1	R7901R Receiver	R7901R Receiver Assembly w/ Lid	Galvanized Steel w/ 316 Stainless Steel Cover	24 lbs
3	1	Padlock (Optional)	Optional Padlock (Brass or Stainless Steel)	Choice of Brass or Stainless Steel	5/8 lbs

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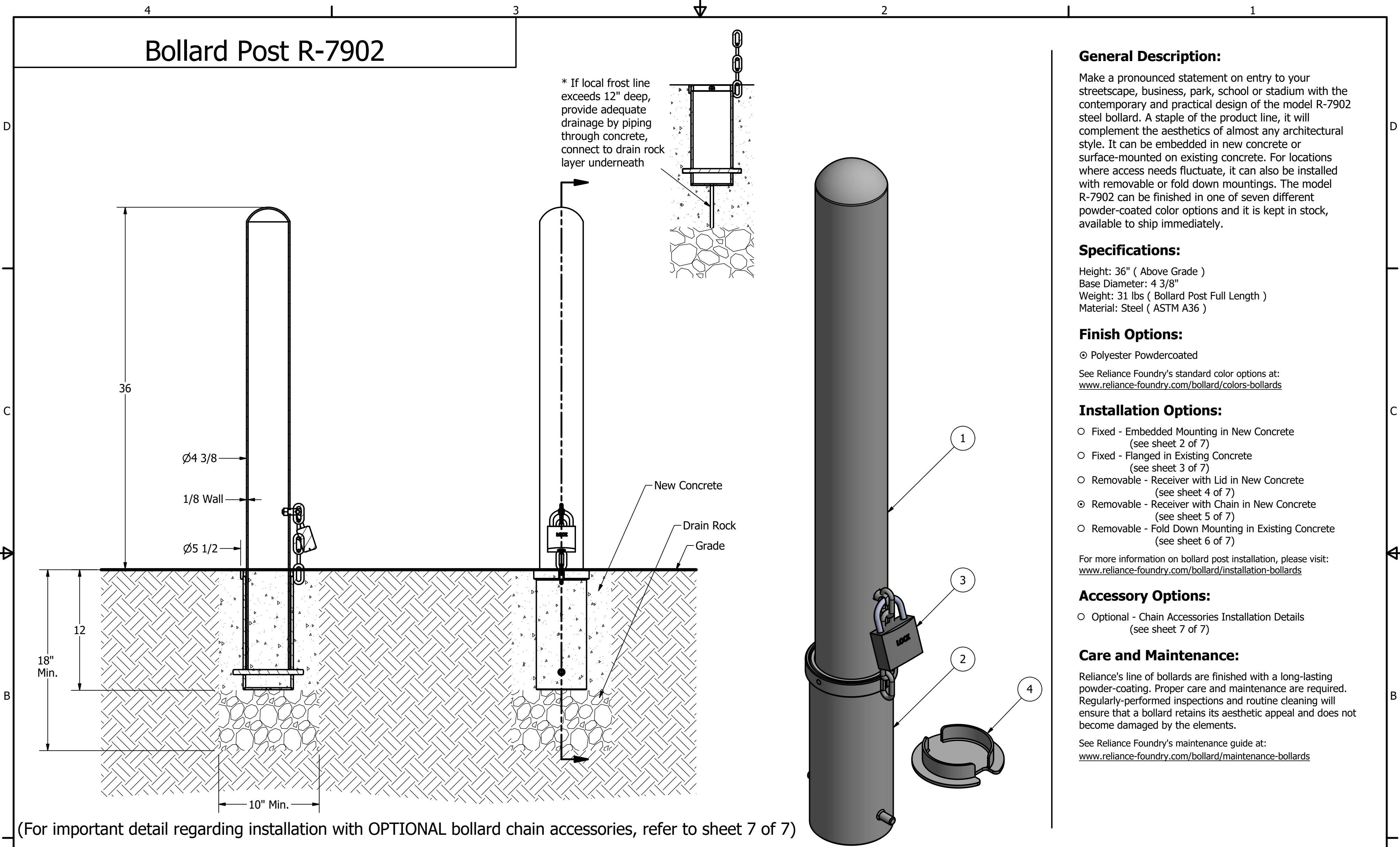
TITLE			
Bollard Post R-7902			
SIZE		DWG NO	REV
C		R-7902	C1
NOT TO SCALE		SHEET 4 OF 7	

Bollard Post R-7902

SIZE C DWG NO R-7902 REV C1

NOT TO SCALE SHEET 4 OF 7

Bollard Post R-7902



General Description:

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Specifications:

Height: 36" (Above Grade)
Base Diameter: 4 3/8"
Weight: 31 lbs (Bollard Post Full Length)
Material: Steel (ASTM A36)

Finish Options:

⊙ Polyester Powdercoated

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

- Installation Options:**
- Fixed - Embedded Mounting in New Concrete (see sheet 2 of 7)
 - Fixed - Flanged in Existing Concrete (see sheet 3 of 7)
 - Removable - Receiver with Lid in New Concrete (see sheet 4 of 7)
 - ⊙ Removable - Receiver with Chain in New Concrete (see sheet 5 of 7)
 - Removable - Fold Down Mounting in Existing Concrete (see sheet 6 of 7)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

- Accessory Options:**
- Optional - Chain Accessories Installation Details (see sheet 7 of 7)

Care and Maintenance:

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www.reliance-foundry.com/bollard/maintenance-bollards

(For important detail regarding installation with OPTIONAL bollard chain accessories, refer to sheet 7 of 7)

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PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R7902 Removable	Bollard R7902 Removable Assembly	Steel Powder Coated	31 lbs
2	1	R7902R Receiver	R7902R Receiver Assembly	Galvanized Steel, w/ 304 Stainless Steel Chain	16 lbs
3	1	Padlock (Optional)	Optional Padlock (Brass or Stainless Steel)	Choice of Brass or Stainless Steel	5/8 lbs
4	1	R7902RC Receiver Cover (Optional)	Optional R7902RC Receiver Cover	304 Stainless Steel	2 lbs

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TITLE

Bollard Post R-7902

SIZE

C

DWG NO

R-7902

REV

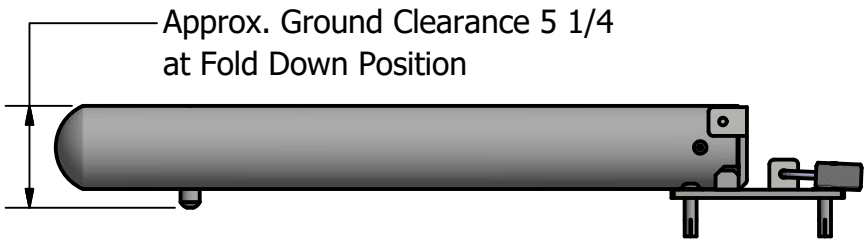
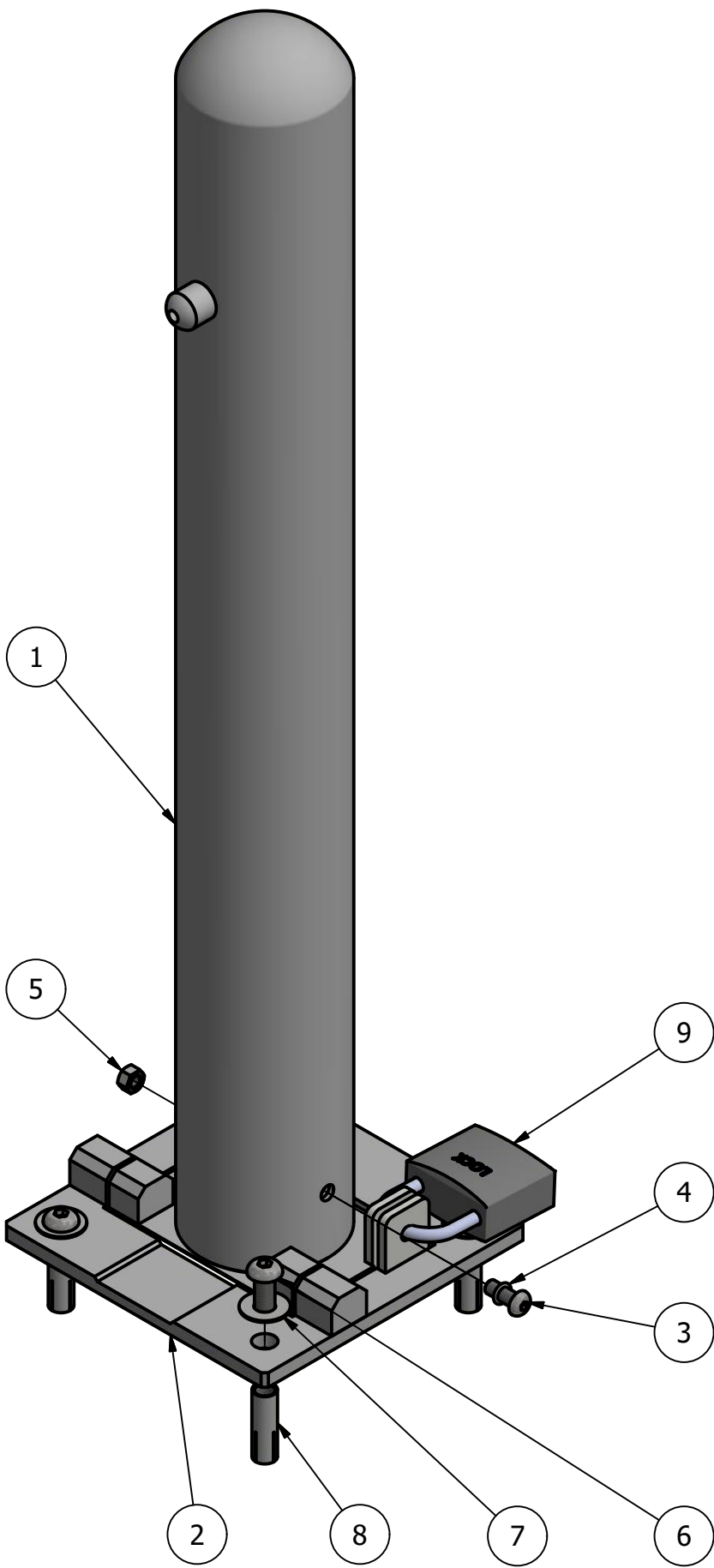
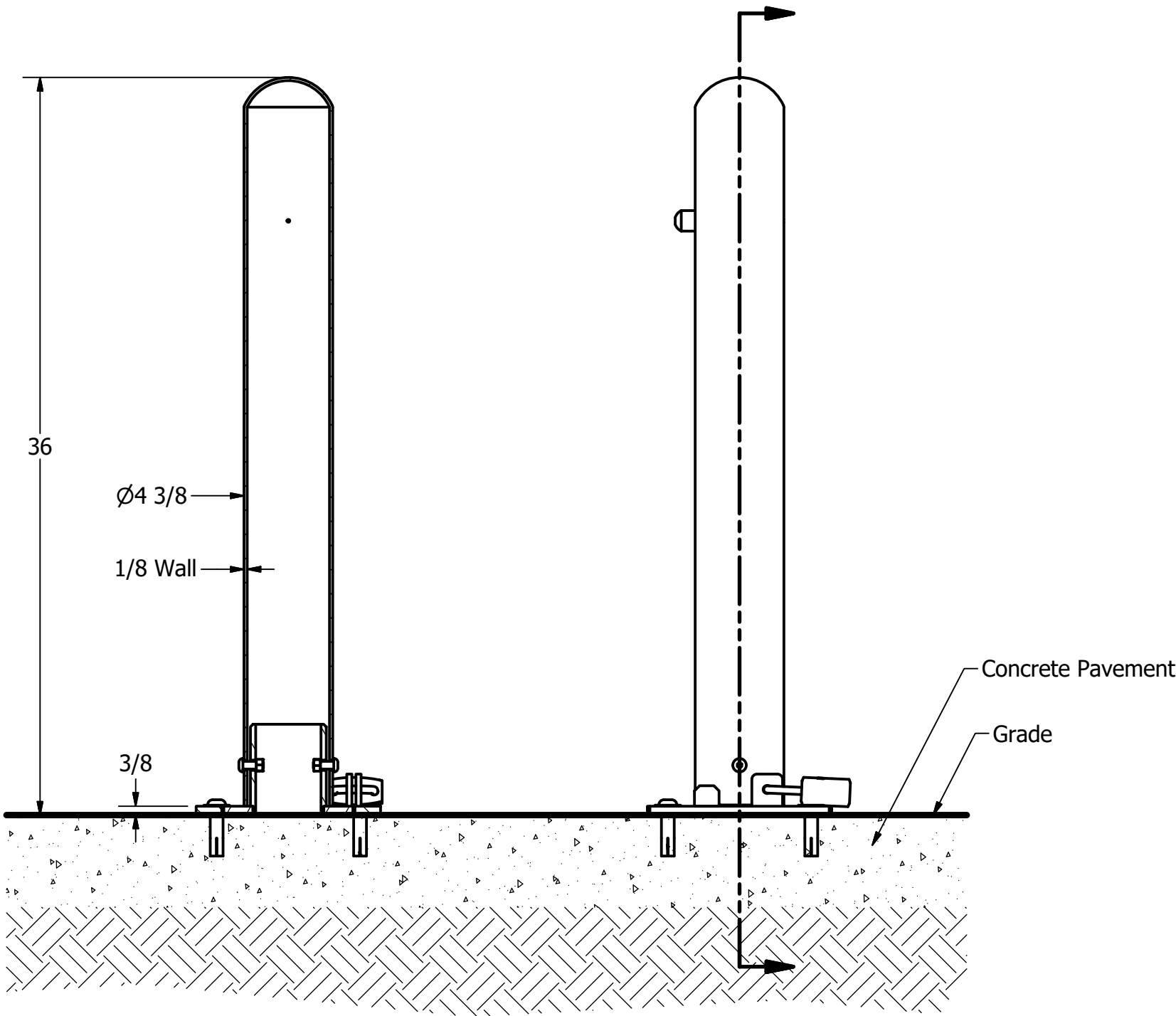
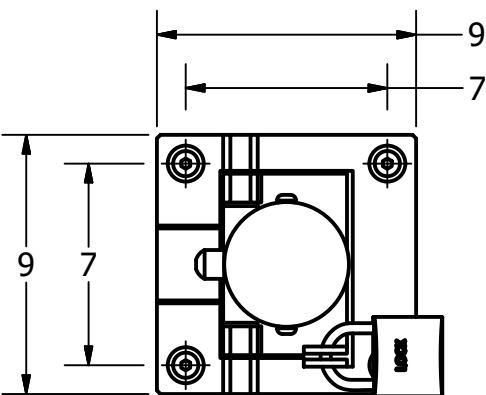
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NOT TO SCALE

SHEET 5 OF 7

Bollard Post R-7902



General Description:

Make a pronounced statement on entry to your streetscape, business, park, school or stadium with the contemporary and practical design of the model R-7902 steel bollard. A staple of the product line, it will complement the aesthetics of almost any architectural style. It can be embedded in new concrete or surface-mounted on existing concrete. For locations where access needs fluctuate, it can also be installed with removable or fold down mountings. The model R-7902 can be finished in one of seven different powder-coated color options and it is kept in stock, available to ship immediately.

Specifications:

Height: 36" (Above Grade)
Base Diameter: 4 3/8"
Weight: 31 lbs (Bollard Post Full Length)
Material: Steel (ASTM A36)

Finish Options:

⊙ Polyester Powdercoated

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

Installation Options:

- Fixed - Embedded Mounting in New Concrete (see sheet 2 of 7)
- Fixed - Flanged in Existing Concrete (see sheet 3 of 7)
- Removable - Receiver with Lid in New Concrete (see sheet 4 of 7)
- Removable - Receiver with Chain in New Concrete (see sheet 5 of 7)
- ⊙ Removable - Fold Down Mounting in Existing Concrete (see sheet 6 of 7)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

Accessory Options:

- Optional - Chain Accessories Installation Details (see sheet 7 of 7)

Care and Maintenance:

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PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R7902 Fold Down Bollard	R7902 Fold Down Bollard Assembly	Steel Powder Coated	27 lbs
2	1	R7950A Fold Down Base	R7950A Fold Down Base Assembly	Steel HDG	15 lbs
3	2	Button Head Bolt 3/8" x 1"	Hexagon Socket Button Head Cap Bolt 3/8" x 1" - requires 7/32" hex key	Stainless Steel	
4	2	O-Ring 3/8"	Nitrile Rubber O-Ring 3/8"	Nitrile Rubber	
5	2	Hex Nut Nylon Lock 3/8"	Hex Nut Nylon Lock 3/8" - requires 9/16" wrench	Steel Plated Nylon Lock	
6	4	Button Head Bolt 1/2" x 1 1/4"	Hexagon Socket Button Head Cap Bolt 1/2" x 1 1/4" - requires 5/16" hex key	Stainless Steel	1/8 lbs
7	4	Stainless Steel Washer 1/2"	Stainless Steel Washer 1/2" OD 1 1/4" Thick .05"	Stainless Steel	
8	4	Drop-in Concrete Insert 1/2"	Drop-in Concrete Insert 1/2" - requires 5/8" x 2" hole (dia. x depth)	Steel Plated	1/8 lbs
9	1	Padlock (Optional)	Optional Padlock (Brass or Stainless Steel)	Choice of Brass or Stainless Steel	5/8 lbs

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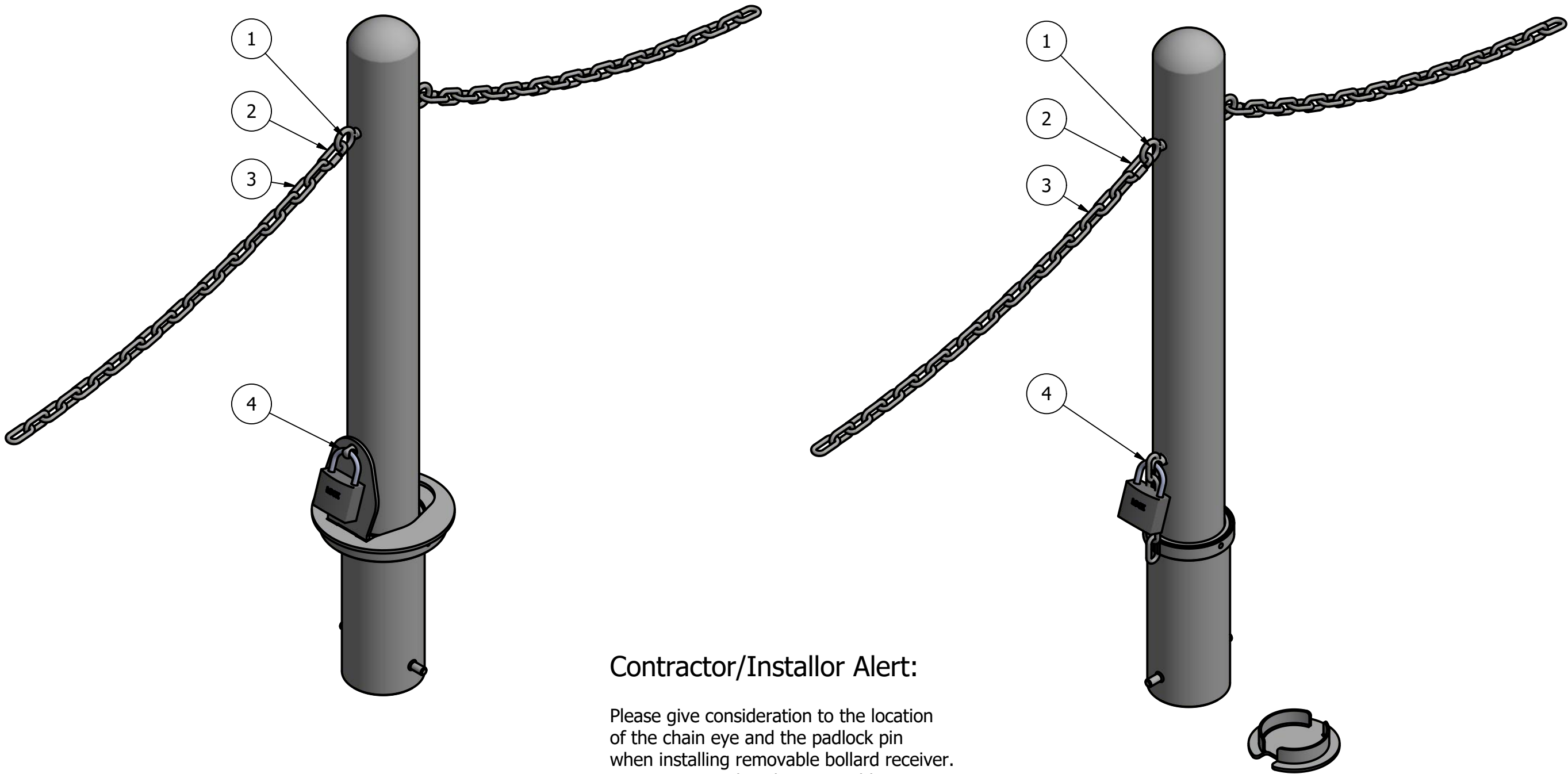
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Bollard Post R-7902

SIZE	DWG NO	REV
C	R-7902	C1

NOT TO SCALE SHEET 6 OF 7

Bollard Post R-7902



Contractor/Installor Alert:

Please give consideration to the location of the chain eye and the padlock pin when installing removable bollard receiver. It is important that the removable bollard receiver padlock pin is oriented in the same direction as the chain is intended to flow.

General Description:

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Specifications:

Height: 36" (Above Grade)
Base Diameter: 4 3/8"
Weight: 31 lbs (Bollard Post Full Length)
Material: Steel (ASTM A36)

Finish Options:

⊙ Polyester Powdercoated

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

Installation Options:

- Fixed - Embedded Mounting in New Concrete (see sheet 2 of 7)
- Fixed - Flanged in Existing Concrete (see sheet 3 of 7)
- Removable - Receiver with Lid in New Concrete (see sheet 4 of 7)
- Removable - Receiver with Chain in New Concrete (see sheet 5 of 7)
- Removable - Fold Down Mounting in Existing Concrete (see sheet 6 of 7)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

Accessory Options:

- ⊙ Optional - Chain Accessories Installation Details (see sheet 7 of 7)

Care and Maintenance:

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www.reliance-foundry.com/bollard/maintenance-bollards

Optional Chain Accessories Installation Details

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	MATERIAL
1	Chain Eye 3/8" (Optional)	Optional Chain Eye 3/8"	Steel Powder Coated
2	Quick Link Connector (Optional)	Optional Quick Link Connector	Steel Powder Coated
3	Chain 5/16" (Optional)	Optional Chain 5/16" (Sold by Length)	Steel Powder Coated
4	Padlock (Optional)	Optional Padlock (Brass or Stainless Steel)	Choice of Brass or Stainless Steel

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www.reliance-foundry.com

Bollard Post R-7902

SIZE	DWG NO	REV
C	R-7902	C1

NOT TO SCALE SHEET 7 OF 7

Locking, Removable Bollards

Traffic control devices for variable-access areas

Removable bollards are perfect for places that intermittently prevent vehicles from entering. As attractive, semi-permanent traffic control devices, removable bollards help guide or block drivers in multi-use or access-controlled spaces. Choose from the following standard removable bollards or from [collapsible](#), [retractable](#), [decorative](#), and [flexible](#) models.

[Read more about flexible bollards.](#)


Prices shown in  USD\$

[Change to CAD\\$](#)



R-8464

316 Stainless
Height: 35-1/2"


 [Item Drawing](#)

Quantity	Price
1	\$603.00
2	\$567.00
3	\$551.00
4 - 9	\$539.00
10 - 24	\$523.00
25 - 49	\$512.00
50 - 99	\$505.00
100 +	\$498.00



R-8464-RA

316 Powder Coated
Height: 35-1/2"


 [Item Drawing](#)

Quantity	Price
1	\$658.00
2	\$621.00
3	\$605.00
4	\$593.00
5 - 9	\$592.00
10 - 24	\$575.00
25 - 49	\$564.00
50 - 99	\$556.00
100 +	\$548.00



R-7902

Steel
Height: 36"


 [Item Drawing](#)

Quantity	Price
1	\$267.00
2	\$231.00
3	\$217.00
4	\$210.00
5 - 9	\$204.00
10 - 24	\$196.00
25 - 49	\$192.00
50 - 99	\$188.00
100 +	\$186.00



R-7972

Steel
Height: 36"


 [Item Drawing](#)

Quantity	Price
1	\$332.00
2	\$296.00
3	\$283.00
4	\$275.00
5 - 9	\$269.00
10 - 24	\$265.00
25 - 49	\$255.00
50 - 99	\$251.00
100 +	\$248.00



R-7912

Steel
Height: 36"


 [Item Drawing](#)

Quantity	Price
1	\$403.00
2	\$366.00
3	\$351.00
4	\$342.00
5 - 9	\$335.00
10 - 24	\$331.00
25 - 49	\$321.00
50 - 99	\$316.00
100 +	\$312.00



R-7901

Steel
Height: 36"


 [Item Drawing](#)

Quantity	Price
1	\$302.00
2	\$266.00
3	\$252.00
4	\$244.00
5 - 9	\$238.00
10 - 24	\$229.00
25 - 49	\$225.00
50 - 99	\$221.00
100 +	\$218.00



R-7911

Steel
Height: 36"

 [Item Drawing](#)

Quantity	Price
1	\$436.00
2	\$398.00
3	\$383.00
4	\$374.00
5 - 9	\$366.00
10 - 24	\$362.00
25 - 49	\$352.00
50 - 99	\$347.00
100 +	\$342.00



R-8902

316 Stainless
Height: 36"



R-8901

316 Stainless
Height: 36"



R-8907

316 Stainless
Height: 36"



R-7906

Steel
Height: 36"



R-7905

Steel
Height: 36"










R-7904

Steel
Height: 36"



R-7904-RSA

Steel
Height: 36"

 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price
	1	\$495.00		1	\$659.00		1	\$478.00		1	\$385.00		1	\$420.00		1	\$532.00		1	\$481.00
	2	\$460.00		2	\$622.00		2	\$444.00		2	\$348.00		2	\$383.00		2	\$493.00		2	\$443.00
	3	\$445.00		3	\$606.00		3	\$430.00		3	\$333.00		3	\$368.00		3	\$477.00		3	\$427.00
	4	\$435.00		4	\$594.00		4	\$420.00		4	\$324.00		4	\$358.00		4	\$467.00		4	\$418.00
	5 - 9	\$427.00		5 - 9	\$593.00		5 - 9	\$412.00		5 - 9	\$318.00		5 - 9	\$352.00		5 - 9	\$459.00		5 - 9	\$410.00
	10 - 24	\$421.00		10 - 24	\$575.00		10 - 24	\$406.00		10 - 24	\$313.00		10 - 24	\$347.00		10 - 24	\$454.00		10 - 24	\$405.00
	25 - 49	\$411.00		25 - 49	\$565.00		25 - 49	\$396.00		25 - 49	\$303.00		25 - 49	\$337.00		25 - 49	\$443.00		25 - 49	\$395.00
	50 - 99	\$405.00		50 - 99	\$556.00		50 - 99	\$390.00		50 - 99	\$299.00		50 - 99	\$332.00		50 - 99	\$437.00		50 - 99	\$389.00
	100 +	\$399.00		100 +	\$549.00		100 +	\$384.00		100 +	\$295.00		100 +	\$328.00		100 +	\$432.00		100 +	\$385.00

R-7903

Steel
Height: 36"

R-7903-RSA





Steel
Height: 36"

R-8904

316 Stainless
Height: 36"

R-8903

316 Stainless
Height: 36"

 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price	 Item Drawing	Quantity	Price
	1	\$568.00		1	\$517.00		1	\$660.00		1	\$825.00
	2	\$528.00		2	\$478.00		2	\$623.00		2	\$786.00
	3	\$512.00		3	\$462.00		3	\$607.00		3	\$767.00
	4	\$501.00		4	\$452.00		4	\$595.00		4	\$765.00
	5 - 9	\$493.00		5 - 9	\$444.00		5 - 9	\$594.00		5 - 9	\$751.00
	10 - 24	\$487.00		10 - 24	\$439.00		10 - 24	\$576.00		10 - 24	\$732.00
	25 - 49	\$477.00		25 - 49	\$428.00		25 - 49	\$565.00		25 - 49	\$720.00
	50 - 99	\$470.00		50 - 99	\$422.00		50 - 99	\$557.00		50 - 99	\$710.00
	100 +	\$465.00		100 +	\$417.00		100 +	\$550.00		100 +	\$700.00

Prices subject to change without notice.

Secure, lockable mounting options

Embedded receivers with hinged lids:

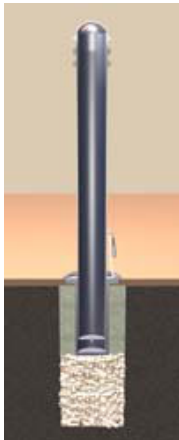
Hinged lids cover receivers when the bollard is removed and act as a lockable fastener when the bollard is in place. Lids close flush to the ground so they will not be a tripping hazard. When lockable bollards are in place, a pin on the bollard threads through the lid and is padlocked to prevent tampering and theft.

Embedded receivers with chains:

Chains and padlocks fasten bollards securely to their embedded receivers. When bollards are removed, chains can be stored inside receivers and concealed with a protective cover to prevent tripping.

Removable Mountings (sold separately)

Embedded
Receivers with Lids



4-inch Removable
Mount with
Hinged Lid

Prices in  USD\$
Change to CAD\$

Quantity	Price
1	\$265.00
2	\$250.00
3	\$243.00
4	\$238.00
5 – 9	\$234.00
10 – 24	\$231.00
25 – 49	\$225.00
50 – 99	\$221.00
100 +	\$218.00

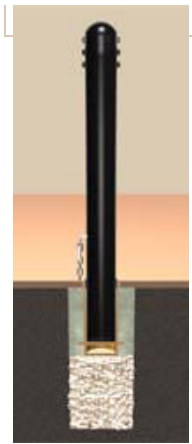


Removable Mount
w/ Hinged Lid, SS,
4 inch

Prices in  USD\$
Change to CAD\$

Quantity	Price
1	\$818.00
2	\$796.00
3	\$790.00
4	\$776.00
5 – 9	\$764.00
10 – 24	\$750.00
25 – 49	\$738.00
50 – 99	\$725.00
100 +	\$712.00

Embedded
Receivers with
Chains



Removable Mount
w/ Securing Chain,
4 inch

Prices in  USD\$
Change to CAD\$

Quantity	Price
1	\$149.00
2	\$135.00
3	\$130.00
4	\$127.00
5 – 9	\$124.00
10 – 24	\$120.00
25 – 49	\$118.00
50 – 99	\$115.00
100 +	\$113.00



Removable Mount
w/ Securing Chain,
SS, 4 Inch

Prices in  USD\$
Change to CAD\$

Quantity	Price
1	\$349.00
2	\$333.00
3	\$325.00
4	\$320.00
5 – 9	\$314.00
10 – 24	\$310.00
25 – 49	\$303.00
50 – 99	\$298.00
100 +	\$294.00

Weather-resistant materials



These sleek green powder-coated bollards are in hinged-lid receptacles.

Powder coated steel bollards:

Powder coating produces a thick and durable finish that resists abrasion and won't crack, chip, or peel. Electrostatically-charged powders completely cover surfaces. The final layer of sealing resin will neither run nor sag, protecting the steel from damage and corrosion more completely than paint or other finishes that can have pinhole-sized discontinuities.

Powder coat is offered in 6 color options.

Stainless steel bollards:

Stainless steel has a passive film upon its surface that makes it naturally resistant to corrosion and wear. High-quality (grade 316) stainless steel offers the greatest resistance to corrosion of common stainless grades, even in high-saline environments. The bright, reflective surface of stainless steel makes it a good choice as a modern architectural accent.

Locking mounts made from galvanized or stainless steel:

Removable mountings are available in galvanized and stainless steel. Galvanized steel features a protective, anti-corrosion coating. Stainless steel mounts are useful in highly saline environments, including those near the ocean or dealing with the de-icing chemicals of winter climates.



Removable bollards offer attractive variable traffic control.



In summer, these removable bollards help transform a city block into a pedestrian plaza.

Semi-permanent traffic “channelizing”

Traffic cones and plastic delineators are known as traffic channelizing devices. They are usually used to mark a site for a short time, often while construction is being done, but these orange plastic posts are sometimes pressed to longer term applications, where they grow ragged and are often knocked out of place. Removable bollards are ideal for mixed-use spaces which intermittently allow traffic across a perimeter, as they are more durable and more attractive.

In public squares and plazas, these traffic posts can be used to create space for events and festivals or be removed to allow parking or emergency vehicle access. Careful planning of removable bollard

placement allows a site to create seasonal opportunities. In some cities, entire blocks are switched from pedestrian use to vehicle use and back again, as the seasons change. An individual site manager might remove bollards to offer parking in the winter, replacing them in the spring to create an outdoor patio.

Bike parking options

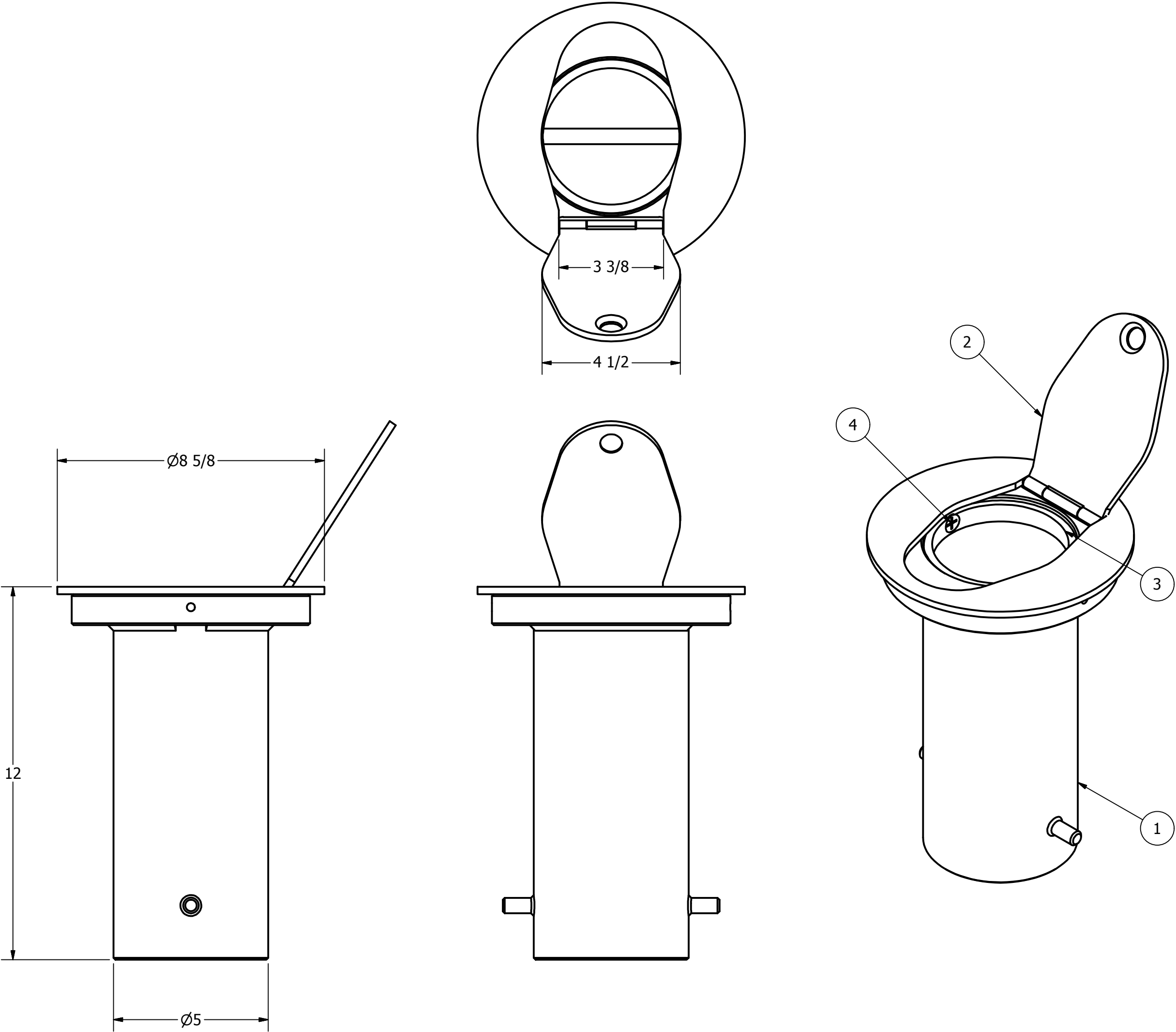
Many models allow for the addition of bike parking arms. A vehicle parking space in the winter could be turned into an active bike parking corral in spring and summer with the addition of removable bike parking bollards. A removable bike bollard can also be placed in an area that may need variable access; for example, near a delivery bay.

Bike-locking arms are also useful as handles on removable bollards, aiding in installation and removal.



The bike locking arms can be used to lift a bollard installed with a removable mounting.

Removable Bollard Receiver with Hinged Lid



General Description:

Removable bollard receivers with hinged lids accommodate all Reliance Foundry R-79xx and R-89xx posts. Lidded receivers close flush to prevent obstruction and swing open to allow bollards to be inserted. Once installed, bollards are padlocked to open lids to prevent tampering and theft. Use removable mountings for multi-use spaces with a variety of day-to-day or seasonal applications. Standard mountings feature galvanized steel receivers with stainless steel lid. Stainless steel housings are also available. NOTE: Padlocks sold separately.

For more information on bollard post installation, please visit: <http://www.reliance-foundry.com/bollard/installation-bollards>

Specifications:

Height: 12"
Base Diameter: 5"
Cover Diameter: 8-5/8"
Weight: 25 lbs (Receiver with Cover Only)
Material: Galvanized Steel Receiver Body
Stainless Steel Receiver Cover
Max. Interior Security Post Size:
Diameter: 4-5/16"

Finish Options:
✓ Galvanized, with Stainless Steel Cover
See Reliance Foundry's standard color options at <http://www.reliance-foundry.com/bollard/colors-bollards>

Notes:

- Embedment details are for reference illustration only. Minimum foundation sizes depend on local soil conditions, weather conditions, and engineering requirements.
- Bollard post is provided as shown, with material detailed in legend below. Concrete, foundation and/or installation ordered separately or provided by others.
- This drawing is not drawn to scale. Dimensions provided herein is for reference only. Please consult Reliance Foundry sales professionals if any dimension is critical to your particular installation.
- Reliance Foundry reserves the right to amend design and specifications without prior notice for product improvement.

PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	Receiver Body	Receiver Body	Galvanized Steel	21 lbs
2	1	Receiver Cover	Receiver Cover with Hinged Lid	Stainless Steel	4 lbs
3	1	Receiver Bushing	ABS Plastic Receiver Bushing	ABS	
4	2	Flat Head Screw	Flat Head Recessed Screw	Stainless Steel	

RELIANCE FOUNDRY
SINCE 1925

Unit 207, 6450 - 148 Street, Surrey, BC V3S 7G7, Canada
1-888-735-5680 info@reliance-foundry.com
<http://www.reliance-foundry.com>

Removable Bollard Receiver with Hinged Lid

SIZE		DWG NO	REV
C		0217-0	B

Could someone please follow-up with the following documentation from the tour:

- Provide images of sidewalk basements/coal chutes. If you could identify sidewalk/coal chute image per property that would also be helpful. I have attached the map that shows locations (blue outline). We will be meeting with SHPO on Thursday the NOV 15th. It'd be nice to be able to show them a few of the sidewalk basements/coal chute conditions – highlighting the difference in covers, structural conditions of steel members and walls.
- Provide images of corroded light fixtures. Please let me know if the poles affected are only the 5-bulb fixtures, or does it also include the 3-bulb fixtures, so I can get my counts right. Kevin, per scope of fixtures, we're just looking at the Main Street area from Lower Main to Armory Street, and from Main to Pioneer/US14A. If this appears to be a city-wide issue should we be looking at including fixtures from other areas in the count?

Please note: these meeting and tour hours should be applied to existing conditions Phase 1A. This will be a new contract that draws from the Existing Conditions budget noted in Phase 2. Your work on cost estimates should be noted in Phase 1.

Thank you so much for all you're doing! Have a great day! Sunny here and the foot of snow we got Sunday is disappearing, but the Mtns. are holding the snow...it should be a good holiday ski season!
Julie

<image001.jpg>

Julie Husband
Winter & Company
303.440.8445
www.winterandcompany.net

Our office address is:
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Boulder, CO 80304

Our mailing address is:
3980 Broadway Street
Suite 103, PMB 140
Boulder, CO 80304

<Attachments.html>

SIGN TYPE	DESCRIPTION	Original Bid Form	
		QUANTITIES	UNIT COST
ENT 1.00	City Limit Entry Sign	3	\$ 2,334.00
PAR 1.00	Parking Identification	3	\$ 3,460.00
PAR 2.00	Parking Identification	2	\$ 3,130.00
PAR 3.00	Parking Garage Entry Banner	1	\$ 5,200.00
VEH 1.00	Vehicular Directional	6	\$ 5,540.00
VEH 1.10	Vehicular Directional	6	\$ 4,869.00
VEH 2.00	Vehicular Directional	11	\$ 4,922.00
VEH 3.00	Vehicular Directional	3	\$ 3,400.00
VEH 4.00	Vehicular Directional and Parking ID	7	\$ 6,010.00
TOTALS		42	

DIFFERENCE \$ 20,594.00

		On the Ground			
EXTEND COSTS		QUANTITIES	UNIT COST	EXTEND COSTS	
\$	7,002.00	3	\$ 2,334.00	\$	7,002.00
\$	10,380.00	5	\$ 3,460.00	\$	17,300.00
\$	6,260.00	2	\$ 3,130.00	\$	6,260.00
\$	5,200.00	1	\$ 5,200.00	\$	5,200.00
\$	33,240.00	2	\$ 5,540.00	\$	11,080.00
\$	29,214.00	10	\$ 4,869.00	\$	48,690.00
\$	54,142.00	11	\$ 4,922.00	\$	54,142.00
\$	10,200.00	1	\$ 3,400.00	\$	3,400.00
\$	42,070.00	4	\$ 6,010.00	\$	24,040.00
\$	197,708.00	39		\$	177,114.00

SIGN TYPE	DESCRIPTION		
ENT 1.00	City Limit Entry Sign	PC 006	McMasters Corner from Spearfish
		PC 008	Amish Store from Sturgis
		UM	KOA from Central City
PAR 1.00	Parking Identification	FC 012a	Near Deadwood Event Center
		DC 003	Parking Garage
		DC 080	Recreation Center
		DC 091	
		DC 092	
PAR 2.00	Parking Identification	FC 016	Across from Terrace/First Gold
		DC 094	Near Sherman & Miller Street
PAR 3.00	Parking Garage Entry Banner		Parking Garage Banner
VEH 1.00	Vehicular Directional		
	*** DELETED ***	CT 008	Tin Lizzie Parking Lot
	*** DELETED ***	DC 046	Iron Horse Inn
		DC 052	Behind Holiday Inn Express
		DC 055	Behind Gem Theater
VEH 1.10	Vehicular Directional	FC 002	Near Verizon
		FC 003	Near Union Palace
		FC 005	Near Cadillac Jacks
		FC 010	Near First Gold
		FC 011	Near Terrace / First Gold
		DC 030	Near Deadwood Station
		DC 041	
		DC 074	
		DC 080a	
		DC 093	
VEH 2.00	Vehicular Directional	PC 001	Near Lodge
		PC 002	Near Lodge
		PC 003	Near Deadwood Station
		PC 004	
		PC 007	Preacher Smith monument
		PC 009	Down from Lodge
		FC 022	Pioneer Way and RR lot
		UM001	Wells Fargo
		UM004	Pioneer Way

UM005 Upper Main
UM007 Before Broken Boot

VEH 3.00 Vehicular Directional

FC 012 Near Deadwood Event Center

VEH 4.00 Vehicular Directional and Parking ID

FC 017 Deadwood Welcome Center
FC 018 Deadwood Welcome Center
DC 042 Interpretive Center
DC 071 Interpretive Center



Sprite Installation Manual

Issue 1.6

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Document Revision Record

Date	Details of change	Reviser name	Approver	Revision
03/06/16	Sprite	Nick Hannam		2
30/06/16	Updated info and pictures	Nick Hannam		3
08/07/16	PA tidied up, NH installed hyperlinks	Nick Hannam		4
01/12/16	Taxomex Comments and Caveat/Notes	David J Leach		5
28/03/17	Format standardisation and content updates	Dave Evans	Rob Kinch	6

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1 Introduction

This document entitled 'Sprite Installation Manual', describes the procedures necessary for the successful installation of the Sprite ticket vending machine.

The commissioning of the Sprite ticket vending machine takes place after the installation. Consideration must be given to the total height of the complete ticket vending machine, ensuring no overhead obstacles prevent the installation of the complete machine. Where a Solar charged Sprite ticket vending machine is to be installed, care must be taken in location to ensure that the Solar Panel is subject to the maximum daylight exposure. The Solar Panel generates the electrical energy to re-charge the battery of the Sprite ticket vending machine.

Metric Group Limited design and manufacture the Sprite ticket vending machine in conformance with specified International Standards and Regulations applying to such electro-mechanical machines destined for installation in a public environment. The company is registered and certified that its activities comply with BS EN ISO 9001:2000 Quality Management Systems, BS EN ISO 14001:2004 Environmental Management Systems, and ISO / IEC 27001:2005 Information Security Management Systems.

The site installation of the Sprite ticket vending machine must involve:-

1. Location planning
2. Permissions:
 - a. Where land use and other utility services are affected.
 - b. Provision of a mains electrical supply.
 - c. Registration and provision of communication licences.
3. Carrying out such local installation work.
 - a. Building or Civil Engineering works, e.g. excavation, supporting adjoining services, concreting, ground and hard surface reinstatement.
 - b. Mechanical fixing of the Sprite ticket vending machine in or to buildings, foundations or other structures.
4. Carrying out Risk Assessments for the construction works and for the public in using the Sprite ticket vending machine at each location.
5. Carry out GPRS/GSM signal strength survey for remote communications if required.

Metric Group Limited has no control over the quality of materials, workmanship or labour associated with items 1, 2, 3, 4 and 5 above and the company must disclaim all liability in respect of these items.

References are made in this document to the "Wiring Regulations", this is used in the text as an abbreviation of the full title which is: -

BS 7671:2001 Requirements for electrical installations
IEE Wiring Regulations, Seventeenth edition.

2 Installation Planning

2.1 Survey the planned location of each Sprite ticket vending machine

For each planned location:-

- Check for obstacles that could prevent correct operation of the Sprite ticket vending machine:
- Take account of the planned orientation of the Sprite.
- Take account of trees and shrubbery that could provide obstacles due to growth, cause obscurity and detrimental residues (resin, pollen and leaf-drop).
- Due regard should be given to normal weather conditions and the effect these can have on site, such as prevailing winds or potential flooding, and try to protect the machine as much as possible by siting close to buildings or walls. If in a coastal environment have the rear of the machine (the face of the machine opposite to the access doors) facing seaward and far enough away from the waterfront so as not to be engulfed by seawater during storms.
- Solar machines require special attention for siting. The solar collection panel on top of the machine recharges the battery. It is essential therefore to ensure that the positioning of the machine maximises the amount of available daylight. Where practicable, shadows from buildings, trees and bushes need to be avoided as well as the previously mentioned detrimental residues including animal life. If the Solar machine is being sited on new concrete and steel reinforcing bars are being used, it is recommended that a suitable earth lead be attached to one of the deepest bars which can then be fastened to the machine base on installation.
- Take account of the operating hours of the controlled space(s) assigned to the Sprite – night, day and effect of the seasons of the year.
- Consider the ergonomic factors of fee-paying customers and maintenance personnel.
- Safe access/egress required for fee paying customer to operate the Sprite and obtain a ticket
- Safe access/egress required for cash collection services and machine maintenance personnel
- Visibility of the operating instructions imprinted on the machine.
- Note that the Sprite, when correctly installed, conforms to the requirements of Disability Discrimination Act (DDA) for use by the disabled.
- Consider the ergonomic factors of the security collection operatives and attendant vehicle when removing the potentially heavy coin box from the Sprite.

Where the Sprite is installed with GSM (Global System for Mobile Communication) / GPRS (General Packet Radio Service) equipment, the machine will be equipped with an internal aerial. Survey tests must be carried out to prove that a specific location will consistently receive a sufficiently strong signal for the location to be viable. Large Buildings, Metal Structures and other geographical features, together with large vehicles may obstruct the signals to and from the Sprite.

The Sprite has been designed to make criminal interference difficult with fail-safe facilities and security procedures. Other deterrent methods dependant on the machine location, lighting, CCTV, GSM, WAN, WIFI etc. may also need to be considered to hinder or neutralise known methods of criminal interference and theft of/from a ticket vending machine.

2.2 Minimum Space Requirements

The following list, and the plan view on [page 6](#), illustrate the minimum surrounding space requirement to ensure the correct operation of the complete Sprite ticket vending machine. The Sprite has an overall height of approximately 1600 mm. The “Front” of the machine is defined as that face of the machine housing the access doors and customer actuated controls.

Side	Minimum Space Requirements
Back	50 mm
Left hand side	500 mm (0.5 metre)
Right hand side	500 mm (0.5 metre)
Front (defined by the maintenance access doors in the Lower Case and customer access requirements to controls in Upper Case)	Sufficient space must be allowed for: 1). Pedestrian and wheel-chaired customers to gain access and egress to and from the Sprite ¹ (see page 6). 2). Access/Egress for cash collection and Service Engineers.

2.3 Access to the Sprite by the disabled

Ideally the Sprite ticket vending machine should be no more than 150m from the furthest disabled parking space. If a ramp is necessary, as a general guideline a 5% (1 in 20) should be considered as the ideal gradient, with 8% (1 in 12) as the maximum.

2.4 Signs to designated parking spaces

A sign or, if appropriate, signs should be provided at the entrance to each car park and at each change in direction to direct disabled motorists to designated parking spaces.

2.5 Parking meters, controls and ticket dispensers - Information

Information, including payment terms, should be provided at the entrance to a car park to make it clear whether or not free parking is available to disabled motorists.

2.6 Pay and display systems

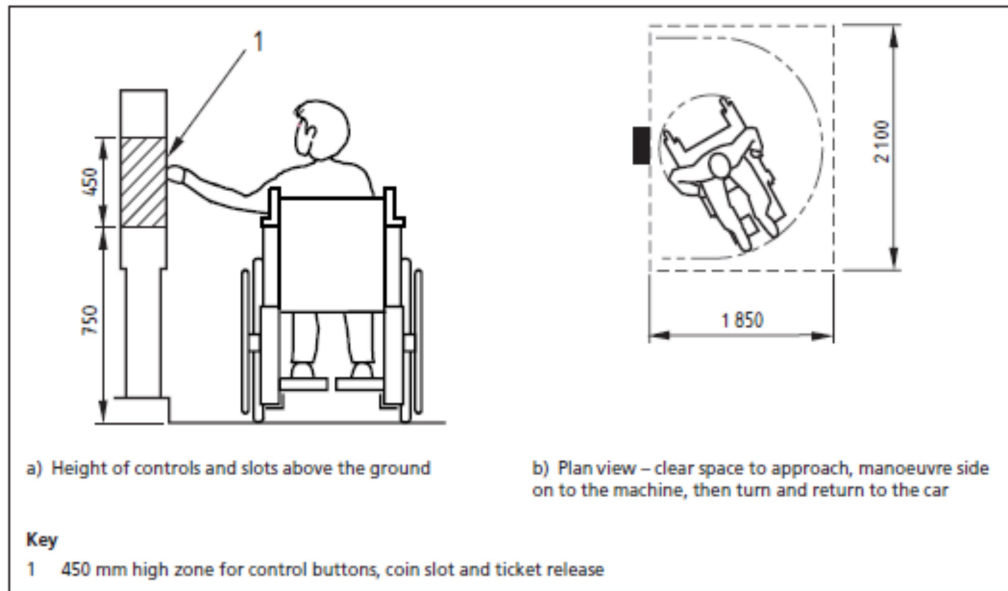
Where a pay and display system is in operation and free parking is not provided for disabled people, a suitably designed pre-payment machine should be provided conforming to BS EN.12414. The pre-payment machine (e.g. a ticket dispenser) should be positioned close to the designated parking space or spaces.

2.7 Ticket dispensers

Where there is a charging system for designated parking spaces and only one ticket dispenser is provided, the height above ground of the controls, and of slots for coins or cards, should be at least 750 mm and not more than 1200 mm, as shown in the figure below. The dispenser should be located as close as possible to the designated spaces, on a route that is clear of obstructions, and in such a position as to allow clear access to the dispenser by a wheelchair user.

The space in front of a meter or a ticket dispenser associated with designated parking spaces should be level, free from obstruction, and of the dimensions shown on [page 6](#).

Key dimensions relating to ticket dispensing machines for use by wheelchair users



Dimensions in millimetres

The plinth below a ticket dispenser or car park barrier control box should not restrict the ability of a wheelchair user to operate the equipment, and should not project beyond the face of the equipment in a way which prevents convenient access.

3 Provision of service duct(s)

Subject to the variation in the customer requirements and local facilities, any design of cast concrete foundation must include provision within the concrete casting for the incoming duct(s), which will need to be kept as far apart as is practical and emerge through the machine base. The two ducts will provide access to the Lower Case intake chamber of: -

1. Mains electricity cable(s)
2. Communications cable(s)

The maximum diameter of each duct shall be 70mm in order to pass through the 110 x 200mm Access Port in the base-plate of the Sprite.

Both types of cables must be kept as far apart as is practical to avoid electrical interference between them. These two types of cable should never be installed together in one duct.

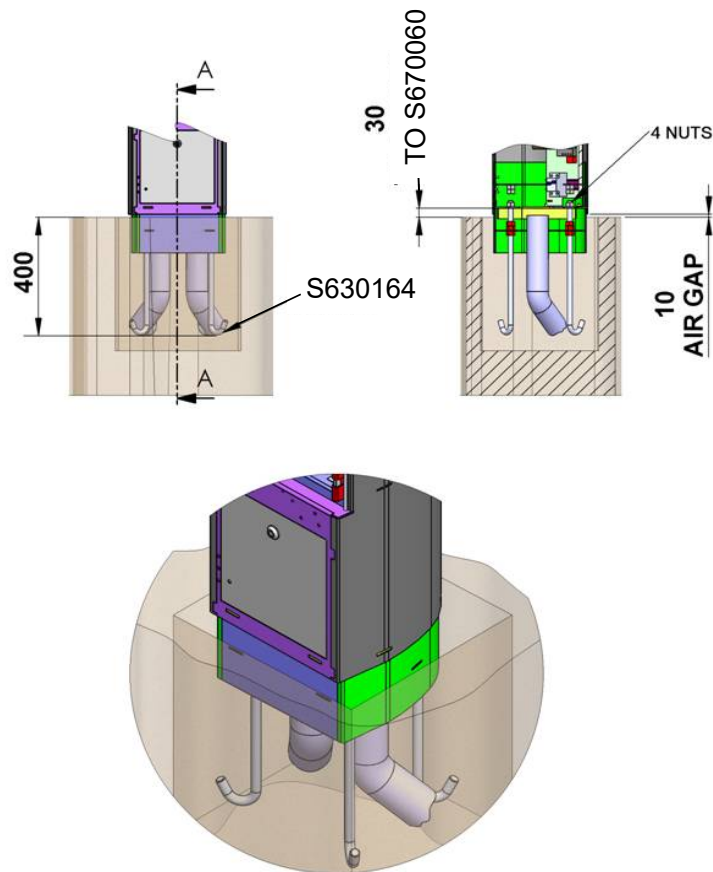


Diagram showing how the Sprite is mounted on its Pedestal SK4578 set into concrete using four 'J' bolts S630164. Note: - the setting is for illustration only. Refer to [page 8 section 4](#) for general guidance notes on concrete foundation sizes or seek the advice of a Civil Engineer to allow for specific local conditions. 100mm of thread is needed above the flange on S670060.

4 General guidance notes on concrete foundations

A standard installation requires a foundation of 740mm wide x 640 mm and a depth of between 460mm and 610mm (the larger depths are recommended for sandy or mainly agglomerate soils). Ensure that the top of the pedestal mounting cradle is 30mm above ground level. ***“Ground Level” must be taken to mean the surface upon which the user will actually stand when purchasing a ticket.***

If the machine is to be installed in a ‘high risk’ area and there is a possibility of it being pulled out of the ground, the following procedure is recommended:

Where unauthorised removal of a complete ticket machine (theft) by uplifting or lateral application of force to ‘rock-out’ the machine is a possibility, the methods requiring a designed cast concrete foundation are essential to counter this. It is recommended that in such situations a site survey be undertaken at the required location of the foundation to determine the soil load bearing type, cohesiveness and local services-density affecting availability of depth and plane-section for a foundation.

Calculations can then be made by a Civil Engineer to determine the appropriate size and type of foundation to resist lateral and uplift forces, given the known size and weight of the ticket machine (1501mm W x 318mm D x 310mm H). The weight is configuration dependent but is between 90kg to 110kg, and models with a video extension will be heavier.

In cohesive (not granular or loose) soil conditions the following sizes of simple mass-concrete foundation will be required to resist a vehicle mounted small crane of 3 tonnes lifting capacity: -

Width A	Width B	Depth
1040 mm	1000 mm	1000 mm
1540 mm	1500 mm	500 mm
1840 mm	1200 mm	500 mm
650 mm	610 mm	1650 mm

A concrete depth guide for a range of product sizes

Width A and B can be either front or side or vice versa. Other factors must be considered and controlled in foundation installation concerning the quality of the concrete mix and how well it’s made.

Concrete used for foundations must have a designed tensile strength of at least 30 N/mm² generated by the chosen concrete mix, and are time-hardened to achieve full strength.

4.1 Foundation method

4.1.1 Notes

1. Works associated with the public highway shall comply with the New Roads and Street-works Act 1991.
2. Ensure that the customers' foundation excavation plan and specification is available and confirmed for each of the ticket vending machines location.
3. Ensure that all personnel carrying out this work have personal protective equipment (PPE) – clothing, head, hands, feet, eyes and ear protection.
4. Concrete in mixing and placing exhibits high Alkaline values, typically in the range ph 11 to 14. Alkaline burns human tissue, therefore avoid or protect from contact. Accidental contact should be treated by sustained application of clean running water.
5. Cordon-off the work area using barriers, cones and signs.
6. Liaise with the appropriate organisation to ensure that where an old ticket vending machine is to be replaced by a Sprite, the electrical supply is isolated at source and the mains electrical cable within the base of the ticket vending machine disconnected from its control equipment and its end(s) capped or covered by a suitably qualified and experienced (SQEP) electrician.
7. Information on the disposal of the old equipment must be obtained from the owner of the old ticket vending machine and comply with local environmental requirements, Waste Electrical and Electronic Equipment (WEEE) Regulations and Restriction of Hazardous Substances (RoHS) Regulations.

4.1.2 Method

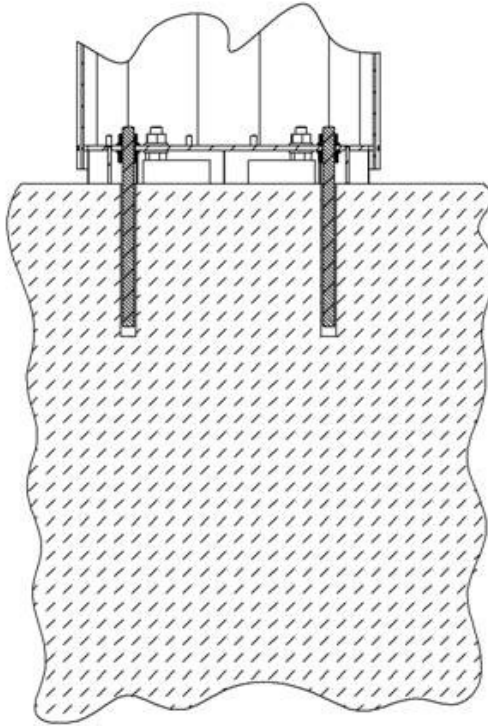
1. Using appropriate equipment and tools, remove the paving surface around the base of the old ticket machine to expose the fixings. Where this paving is to be reused, set aside this paving for reuse after the installation of the new Sprite ticket vending machine.
2. Remove the nuts/bolts securing the old ticket vending machine, remove and set aside the machine to the customers' requirements (see note 7 above).
3. Taking care not to damage any existing Cable duct(s) to the ticket machine or buried services, use appropriate equipment to excavate the ticket machine location to achieve a new foundation of a depth and width specified by the customer. Where a service is inadvertently damaged, contact the appropriate owner of that service and arrange a repair. Telephone and other cable ducting, particularly where unsealed joints have been used will frequently contain surface water that has drained into them. Local mobile pumping will be required to lift such water away from the excavation to an approved drainage point.
4. Inspect the excavation for correct orientation, dimensions and presence of buried services. Use buried services locator equipment to identify depth and location of buried services. Inspect all uncovered services and shield/protect/support them where the made-up ground which surrounds them may crumble causing them to slump into the excavation.
5. Where buried services compromise the excavated foundation seek the customers' advice on varying the required depth/width/shape/size of the required foundation and of the possibility of applying a split-sleeve to such encroaching services and employing additional reinforcing steel to the foundation. Where other substantial concrete foundations encroach in to the

ticket machine foundation excavation; preventing the full required excavation; seek the customers' approval to insert resin bonded fixings at suitable locations into the encroaching concrete to provide studding/reinforcing bar tie-in's to link the existing encroaching concrete mass with the new concrete to be poured into the excavation.

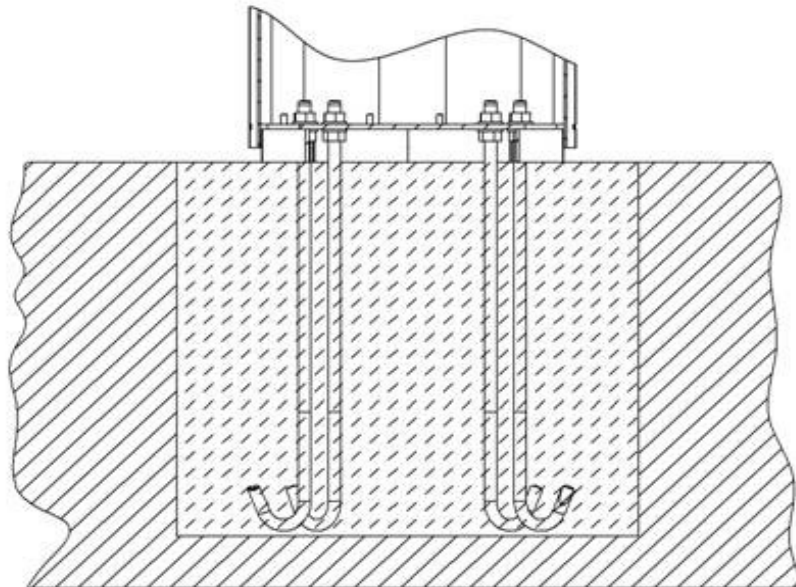
6. Check the customers' requirement for any cut-to-size wire mesh, specific reinforcing bar, small piles or concrete cap specified by the customers Civil Engineer.
7. Check the customers' requirement for incorporating small piles in to the concrete cap foundation should this type of foundation be specified.
8. Install / modify / incorporate cable ducts to the Sprite ensuring their placement to project through the access port in the pedestal and terminate just below the top edge of it. See illustrations on [page 7](#).
9. Arrange for the delivery of a concrete mix whose design strength will after time-hardening achieve a minimum strength of 30 Nm/mm^2 . The time taken to achieve this strength will depend on the type of cement, the water content, the aggregate composition, added components e.g. chemically treated polystyrene pellets, man-made fibres, silica, fly-ash, other fired minerals and chemical additives. The mix of concrete components together with chemical additives can achieve low shrinkage, rapid/retarded hardening, reduced cracking, sulphate resistance, workability, waterproofing, lightweight, characteristics in the finished concrete. To achieve accuracy and consistency of concrete mixes, batch concrete mixing plants are preferable, to small scale local mixing. The customers Civil Engineer may specify the concrete mix; otherwise 'ready mixed concrete' suppliers will supply detailed information. In certain locations, local or national standards e.g. 'Ministry of Transport', may apply in respect of the aggregate and other components of a concrete mix. Check for the need to conform to these standards with the customer.
10. Pour the concrete mix into the excavation in stages to allow the insertion of the specified reinforcement and the use of vibrating concrete mix compacting tools e.g. vibrating poker, to reduce entrained air and improve concrete flow around any reinforcement, ducts etc., to totally fill the excavation. Insert the pedestal assembly when the concrete has reached a suitable depth and the assembly can be adjusted for position and level during the subsequent top ups.
11. The finished concrete level is to be level with the paving level, where 'paving level' is defined as that level at which a pedestrian will stand to operate the Sprite ticket vending machine.
12. The finished level of concrete shall be vibrated and smoothed to achieve an accurate-level and smooth finish. This needs to be done to ensure that the vertical alignment of the fully installed machine will be within 0.5 degree.
13. The placed concrete foundation must be allowed to time-harden in order to achieve the design strength of 30 Nm/mm^2 . Curing to ensure that the newly placed concrete does not dry out too quickly, causing cracking and internal flaws, by methods such as the application of controlled water mist, damp Hessian or plastic film, can be used to suit the prevailing environmental conditions.

4.2 Installation options

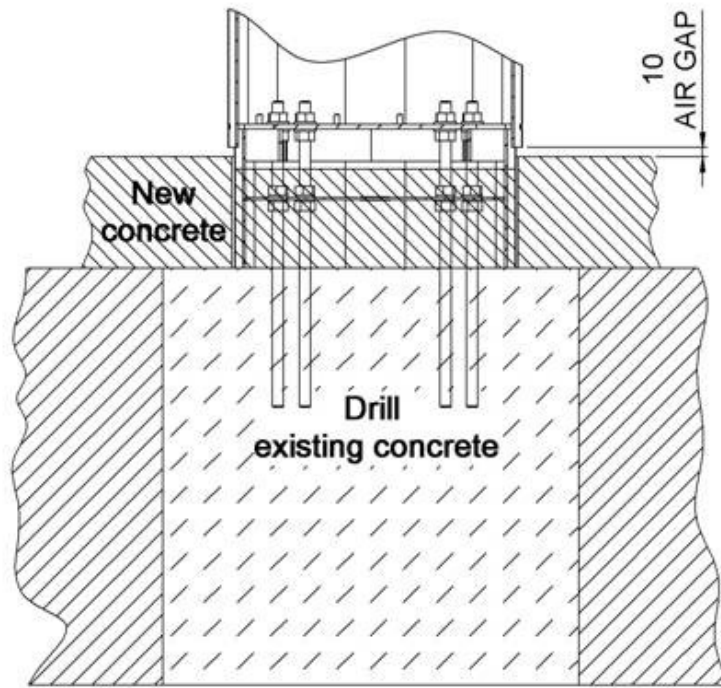
There are four different configurations available for fixing the Sprite ticket vending machine to the ground. The following are pictorial representations of the options that can be utilised.



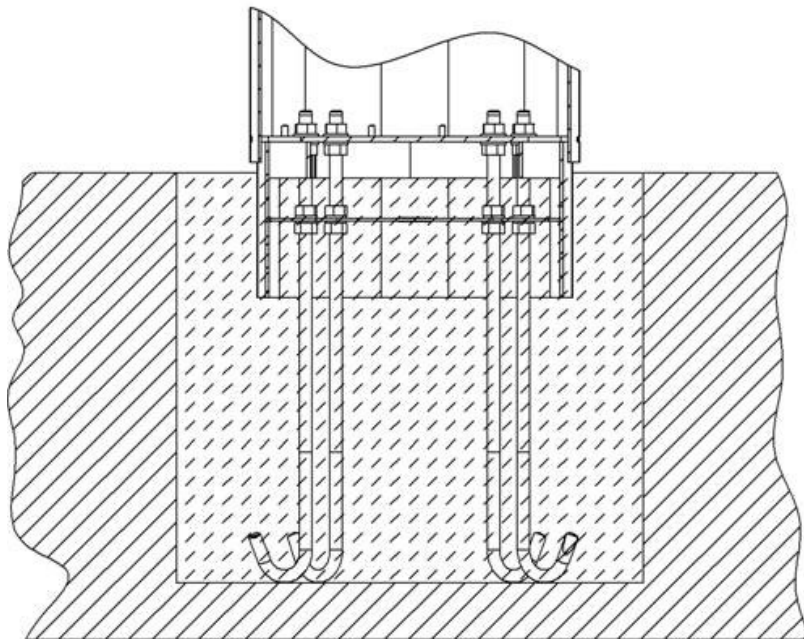
[Option A, surface mount to existing concrete, chemical anchor.](#)



[Option B, surface mount to new concrete.](#)



[Option C, pedestal mount to existing concrete and top finish, chemical anchor.](#)



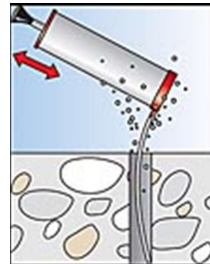
[Option D, pedestal mount to new concrete.](#)

4.3 Method of drilling and inserting fixing in concrete

- 1) Ensure that suitable personal protective equipment (PPE) is used during these operations.
- 2) Using the Sprite template (Part reference: S630186) drill the 4 off 12mm fixing holes to the required depth of 150 mm.



- 3) Apply a hand operated blower / compressed air gun to the fixing hole to remove all the loose debris from the drilled hole. Protect the eyes, ears and lungs from dust particles.



- 4) Clean away any drilling debris to leave a clean smooth and level concrete face ready to mate with the Sprite.

The fitting of the Sprite using the fixing holes will be found in section 'Surface mount to existing concrete' – [page 14](#) and 'Pedestal mount to existing concrete and top finish' – [page 18](#).

4.4 Chemical anchoring

Chemical or resin anchors are generic terms for a means of permanently bonding fasteners into a substrate, in this case - concrete. In most cases a chemically bonded fastener will be stronger than the foundation material itself. As the system is based on chemical adhesion, no load stress is imparted to the base unlike expansion type anchors.

Chemical bonding is ideal for close to edge fixing and group anchoring especially in concrete of unknown quality or poor strength. They can also be used in damp conditions or even underwater if necessary. There are many different types of chemicals and delivery systems on the market, but fundamentally they are all the same.

One compound (base resin) is mixed with another (catalyst) which causes a chemical cure. The choice of chemical anchor will depend on the site conditions, so the civil engineer who carried out the original site survey should ideally be consulted.

4.5 Installing onto a concrete base

The Sprite has three major internal chambers, cabinet, vault and access doors. No access is required to the vault chamber. The bottom chamber is known as the Electrical Intake Chamber.

Access to the Electrical Intake Chamber is by using a key in the lock fitted on the door. To unlock the door to gain access to the chamber, unlock and open the upper door. There is a thumb lever at the bottom of the lock bar case which must be pushed down to allow the lock to turn on the intake chamber door. The door can be pulled out and up to be completely removed. It is fixed to the case however by its earth cable so care should be taken not to damage, or drop, the connection.

The opened chamber allows for fixing and the installation of the electrical mains and communication cables. The Sprite is designed to be fixed to a concrete base with four M12 bolts. The reinforcing steel and size of the concrete foundation will depend on the outcome of the Site Survey ([See P8](#) for general guidance on concrete foundations). The following document sections deal with the differing types of foundation and their design rational.

The local facilities and customer requirements will determine the configuration of the Sprite and this will affect the quantity and type of cable(s) entering the Electrical Intake Chamber of the Sprite ticket vending machine. Such criteria will also affect the quantity and type of electrical control equipment in the Electrical Intake Chamber.

In colder climates up to two heaters may be installed in mains electricity machines mounted within the case.

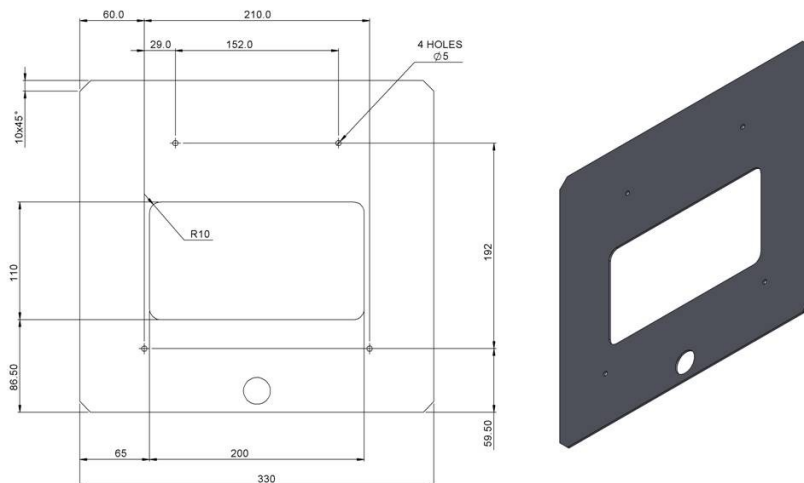
5 Methods of Fixing

5.1 Surface-mount to existing concrete

Care must be exercised where existing concrete is used as the medium to which the Sprite will be fixed, where reinforcing bars have been used within the concrete to strengthen the concrete structure. Reinforcing bars shall not be drilled-through or otherwise compromised to obtain fixings for the Sprite ticket vending machine. Damage to these reinforcing bars will affect the strength of the concrete foundation / structure.

Ensure that suitable PPE (Personal Protective Equipment) is used during these operations. Clean the surface of the concrete, removing any loose material and surface imperfections that would affect the level accuracy of the installed machine.

Mark through the four fixing holes using the Sprite Drill Template S630186. For the purpose of marking through they are 5mm dia. The undimensioned large round hole denotes the front face of the machine and the template. It serves no other purpose.



Template S630186) / The template is used for floor marking only.

Fixing to existing concrete must be done using chemical anchoring. 4 x M12 allthread studs will be needed at 210mm long. Having selected a suitable position in accordance with the **Installation Planning** on P4, four holes 12mm dia have to be drilled to a depth of 150 mm. (Bearing in mind the existing services will have to be used if this is a replacement machine).



Photo 1

If the original machine was mounted on a plinth it is possible to drill clearance holes through the steel of the plinth and then drill into the concrete beneath, Photo 1.



Photo 2

Drill the marked centres to a depth of 150mm, and then clean out the holes. It is recommended that the holes be blown out and then brushed to remove all loose material. Fill the hole with adhesive as in Photo 2. Following the instructions on the chosen chemicals, set the anchors into the ground leaving 60mm above the ground surface. NB: Having filled the holes with the selected anchor material, screw the anchor studs into the adhesive as if screwing into a nut, to expel all air pockets and ensure adhesion.



Photo 3

When the anchor has gone off, run a nut down each stud to just above ground level and drop a washer over the top. Carefully lift the machine onto the studs and set it down as in Photo 3. Wind the nuts up from ground level to the underside of the base, and tighten them against the base to level the machine. It needs to be no more than 0.5 of a degree off vertical. Identify the earth bonding lead from the earth terminal, under the lip of the electrical intake chamber door opening. Using an M12 Ring Connector place it over the anchor and then fit a washer and nut over the top. Once satisfied that the machine is vertical, drop a nut and washer over the remaining studs and fasten down in a diagonal sequence. Check that the machine is still within limits for vertical and adjust if necessary. Finally, lock off with top shear nuts.

5.2 Surface-mount to new concrete

Select a suitable position in accordance with the **Installation Planning** on [page 4](#). Excavate as per customers specification and refer to **Provision of service duct(s) to the Sprite** on [page 7](#).

Ensure that suitable PPE (Personal Protective Equipment) is used during these operations.

Before beginning excavation, CAT (Cable Avoidance Tool) scan the area to check for any underground services. Excavate according to the customers instructions or a minimum of 450mm cubed.

B1. If using SK4591 'J' bolts mount them in template SK4653. Use a nut to set the stud end of the 'J' bolts 60 mm above the template surface. Place the assembly into the excavation with the template straddling the left and right sides of the excavation, (the large hole in the template denotes the front of the machine). Orientate the 'J' Bolts so that they all face outwards away from the centre of the template and then set the assembly so that it is flat and level ensuring the bolts will all be perfectly vertical. Partially fill the excavation without disturbing the 'J' bolts. Allow the concrete to go off enough to be able to remove the template without disturbing them. Once satisfied that the studs are vertical fill the remainder of the excavation. Finish the surface to a fine smooth level and flat surface with 60mm of clean stud showing above the surface. ([See page 10, article 11](#)).

B2. If using chemical anchors fill the excavation and finish off the surface to a fine smooth level and flat surface. ([See page 10, article 11](#)). Allow the concrete to go off fully before drilling. 4 lengths of allthread 12mm dia x 210mm long will be required. Mark through the four fixing holes using the Sprite Drill Template S630186. For the purpose of marking through they are 5mm dia. The undimensioned

large round hole denotes the front face of the machine and the template. It serves no other purpose. Drill the marked centres to a depth of 150mm, and then clean out the holes.



Photo 4

It is recommended that the holes be blown out and then brushed to remove all loose material. Fill the hole with adhesive as in Photo 4. Following the instructions on the chosen chemicals, set the anchors into the ground leaving 60mm above the ground surface. NB: Having filled the holes with the selected anchor material, screw the anchor studs into the adhesive as if screwing into a nut, to expel all air pockets and ensure adhesion.



Photo 5

When the anchor has gone off, run a nut down each stud to just above ground level and drop a washer over the top. Carefully lift the machine onto the studs and set it down. Photo 5. Wind the nuts up from ground level to the underside of the base, and tighten them against the base to level the machine. It needs to be no more than 0.5 of a degree off vertical. Identify the earth bonding lead from the earth terminal, under the lip of the electrical intake chamber door opening. Using an M12 Ring Connector place it over the anchor and then fit a washer and nut over the top. Once satisfied that the machine is vertical, drop a nut and washer over the remaining studs and fasten down in a diagonal sequence. Check that the machine is still within limits for vertical and adjust if necessary. Finally, lock off with top shear nuts.

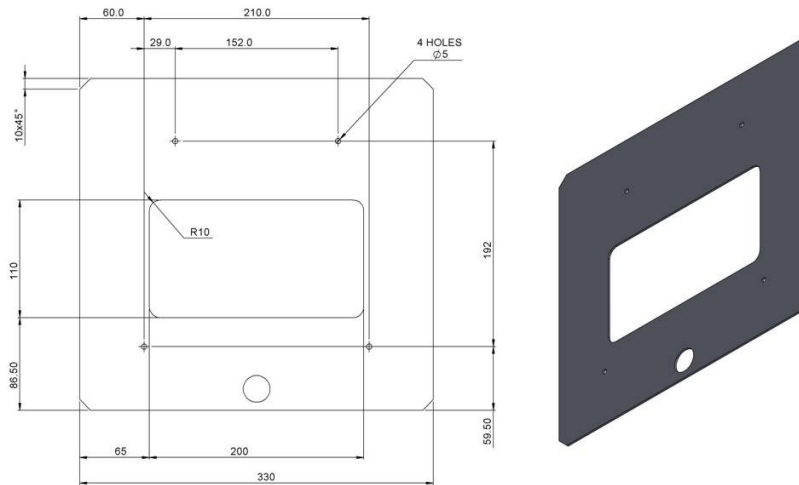
5.3 Pedestal-mount to existing concrete and top finish

When fixing a pedestal to an existing concrete foundation, the ground level (**“Ground Level” means the surface upon which the user will stand when purchasing a ticket**), must be raised by 120 mm to keep within the DDA (Disability Discrimination Act) guidelines.

Care must be exercised, if existing concrete is used as the medium to which the Sprite will be fixed, where reinforcing bars have been used within the concrete to strengthen the concrete structure. Reinforcing bars must not be drilled-through or otherwise compromised to obtain fixings for the Sprite ticket vending machine. Damage to these reinforcing bars will affect the strength of the concrete foundation / structure.

Ensure that suitable PPE (Personal Protective Equipment) is used during these operations. Clean the surface of the concrete, removing any loose material and surface imperfections that would affect the level accuracy of the installed machine.

Mark through the four fixing holes using the Sprite Drill Template S630186. For the purpose of marking through they are 5mm dia. The undimensioned large round hole denotes the front face of the machine and the template. It serves no other purpose.



Template S630186 / The template is used for floor marking only.

Fixing to existing concrete must be done using chemical anchoring. 4 x M12 allthread studs will be needed at 330mm long. Having selected a suitable position in accordance with the **Installation Planning** on [Page 4](#), four holes 12mm dia have to be drilled to a depth of 150 mm. (Bearing in mind the existing services will have to be used if this is a replacement machine).

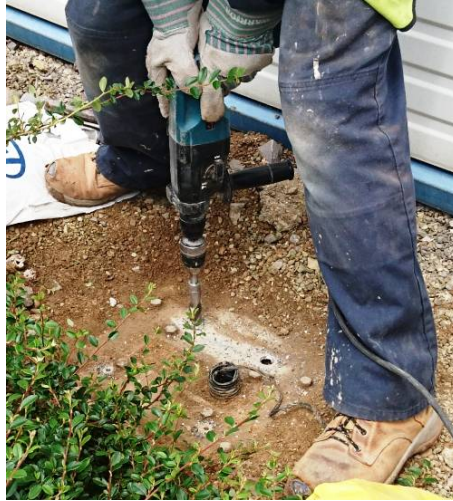


Photo 6

If the original machine was mounted on a plinth it is possible to drill clearance holes through the steel of the plinth and then drill into the concrete beneath, Photo 6.



Photo 7

Drill the marked centres to a depth of 150mm, and then clean out the holes. It is recommended that the holes be blown out and then brushed to remove all loose material.

Fill the hole with adhesive as in Photo 7. Following the instructions on the chosen chemicals, set the anchors into the ground leaving 185mm above the ground surface. NB: - Having filled the holes with the selected anchor material, screw the anchor studs into the adhesive as if screwing into a nut, to expel all air pockets and ensure adhesion.

Put a nut and washer on the each stud and place the pedestal over them. Wind the nuts up until they touch the bottom of the pedestal flange. Level the pedestal using the nuts against the flange. When

satisfied the pedestal is level, drop a washer and nut on each stud and tighten to 50 Nm in a diagonal sequence. Recheck level and adjust if necessary.

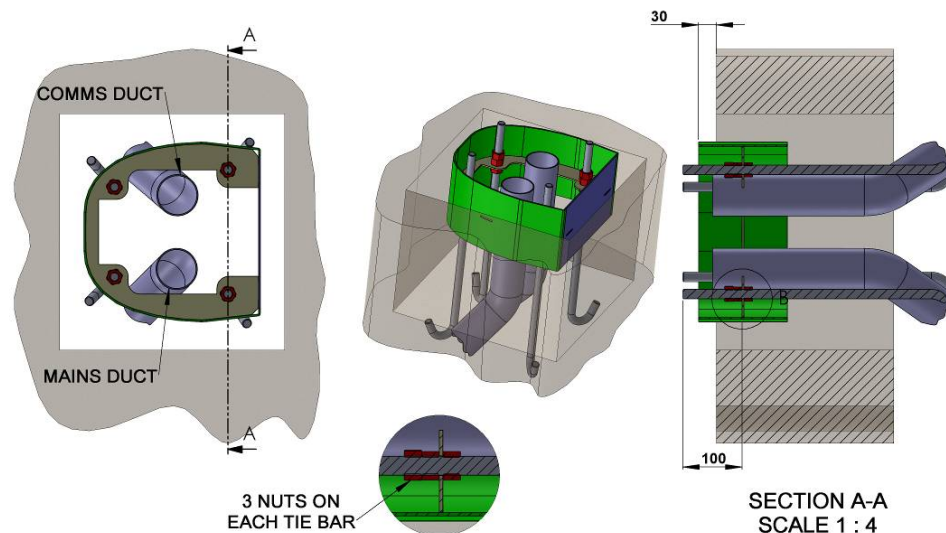
Top off the ground level to a depth of 120mm, (including inside of the pedestal) leaving just the top 30mm of the pedestal exposed. When the topping has gone off sufficiently, clean the pedestal ready for the Sprite body. Gently lower the Sprite onto the studs. The ends of the studs come in through the bottom of the machine flange. Ensure that the machine is standing vertical to within the specified limits of +/- 0.5 degree. Shim if necessary. Identify the earth bonding lead from the earth terminal, under the lip of the electrical intake chamber door opening. Using an M12 Ring Connector place it over the anchor and then fit a washer and nut over the top. Fasten down with shear nuts in a diagonal sequence.

5.4 Pedestal-mount in new concrete

Select a suitable position in accordance with the **Installation Planning** on [page 4](#). Excavate as per customers specification and refer to **Provision of service duct(s) to the Sprite** on [page 7](#).

5.5 Installing using S630164 'J' anchor bolts.

Refer to [page 8](#) for fresh concrete foundations.



metric 

Assemble the four S630164 'J' bolts into S670060 as per the above diagram. Set the assembly into the fresh concrete leaving 30mm of the pedestal showing above the smoothed concrete surface, ensuring the assembly is level and that the service ducts are not trapped and remain clear of debris.



Photo 8

It is important that the 'J' bolts are inserted into the concrete with all the 'hooks' facing outward, away from the centre of the machine, creating as large an anchor area as possible as in shown in Photo 8. Mount the 'J' bolts S630164 in the pedestal S670060 with a nut and washer both side of the centre flange and orientate them as shown. Lock them off with 100mm of thread showing above the pedestal flange.



Photo 9

Before beginning the excavation, CAT (Cable Avoidance Tool) scan the area to check for any underground services. Excavate according to the customers instructions or a minimum of 450mm cubed.



Photo 10

Put the assembly into the excavation and check it is deep enough by ensuring that 30mm of the pedestal will remain exposed above finished ground level as in Photo 10. At this stage, level the assembly and ensure correct orientation.



Photo 11

Pour in enough concrete to cover the ends of the 'J' bolts and check the top edge of the pedestal for level both front to back and left to right as in Photo 11. When covered, allow the assembly to rest long enough for the concrete to start going off, ensuring that nothing will move when the rest of the excavation is filled in.



Photo 12

Fill in the excavation. Photo 12 shows that the inside of the pedestal is filled in as well, covering the nuts leaving just the top edge and the 4 studs exposed.



Photo 13

Finally, finish the top surface matching the surrounding surface leaving 30mm of the top edge of the pedestal above the final ground level.



Photo 14

Run a nut down each stud to just above ground level and drop a washer over the top. Carefully lift the machine onto the studs and set it down as in Photo 14. Wind the nuts up from ground level to the underside of the base, and tighten them against the base to level the machine. It needs to be no more than 0.5 of a degree off vertical. Don't use the back of the machine for the vertical check as it can be slightly bowed. Also, don't use the door edges as they can be offset as well.

Identify the earth bonding lead from the earth terminal, under the lip of the electrical intake chamber door opening. Using an M12 Ring Connector place it over the anchor stud and then fit a washer and nut over the top. Once satisfied that the machine is vertical, drop a nut and washer over the remaining studs and fasten down in a diagonal sequence. Check that the machine is still within limits for vertical and adjust if necessary. Finally, lock off with top shear nuts.

5.6 Installation in multi-storey buildings

Only general guidance can be offered here since building layout and construction differ too widely for individual instances to be covered in detail.

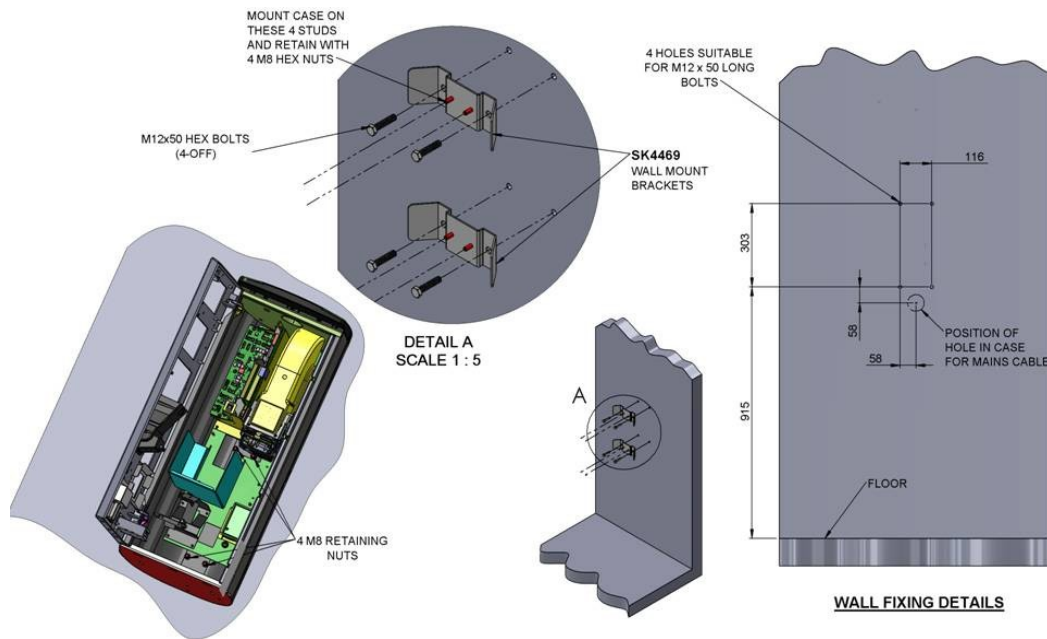
It will usually be the case that the thickness of the deck will not permit any excavation whatsoever.

The following description is therefore one based on securing SK4508 (pre-release reference number) machine upper case, directly to a wall. This option uses a case specifically designed for wall mount only, is cashless and mains only.

As the machine is located with its back against a wall/roof-support or similar structure, the mains cable may enter through the back. This is perhaps the most convenient method as it overcomes the potential problems and work involved in routing a cable along the deck and up. If a machine is to be installed on an upper level of a car park it may be possible to route the cable along the ceiling below and up through the deck into the pedestal of a standard full sized machine.

5.7 Brackets required: - SK4469* wall mount bracket

* Pre-release reference number



5.8 Fixing the brackets to a wall, column or similar structure

Before commencing an installation the construction material of the structure should be identified and an appropriate type of fixing used to secure the brackets to the structure. For security reasons it is recommended that cup washers are placed under the heads of the fixings to prevent unauthorised removal using an open end spanner, alternatively use security bolts.

Using the drawing above, transpose the dimensions from the drawing onto the wall where the Sprite is to be positioned ensuring that it is level. Mark and drill the fixing holes in the structure and secure the brackets using suitable fixings.

Loosely mount the casework to the wall brackets then fasten using four M8 nuts and washers.

5.9 Connecting the mains electricity supply cable

Metric Group Limited will only install a machine to a completed site.

It is a customer responsibility to ensure that the suitably qualified and experienced personnel (SQEP) within their own organisation or contractors that their electrical installation works conform to the current Wiring Regulations.

The mains electricity powered Sprite ticket vending machine is designed to be provided with either a single phase, 115 Volt or 230 Volt, 50-60 Hertz mains electricity to its internal isolating 6A MCB+RCD control equipment.

The conductor clamping type terminals of the manufacturer supplied isolating equipment will allow termination of conductors up to 38 mm².

The customer must specify the mains supply and the isolating control equipment required at the time of order.

The total power demand rating of the Sprite will not exceed 500 VA.

The mains supply cable required for the Sprite must be specified by the customers appointed Electrical Contract Installer and would normally comprise a three core cable incorporating live, neutral and earth conductors. Subject to local installation conditions the cable may be wire armoured and sheathed to provide mechanical and environmental protection.

Where cables are bunched or layered together or have extended run-lengths some down-rating of their nominal current carrying capacity may be required.

It is the role of the customers appointed Electrical Installation personnel/organisation to specify the cable size and type in compliance with the Wiring Regulations and in the knowledge of local environmental conditions.

With the Sprite fixed into position and suitable mains electricity supply cable installed, the mains cable may now be terminated in the machines electrical intake chamber. Open the door to the electrical intake chamber using the appropriate keys. The upper door must be opened and the electrical access chamber release lever must be pressed to enable the access door to be unlocked, ([see P13,section 4.5](#)).

The type of key to open the electrical intake chamber door will depend on that specified by the customer at the time of placing an order for the Sprite. The key options are: -

1. Triangular service key
2. Security key.

Looking inside the electrical intake chamber it will be seen that there are is a factory fitted dual pole switch with MCB+RCD as standard in the UK fitted to the left and a wood laminate mounting board to the centre. Outside the UK this is subject to the customers' requirements.

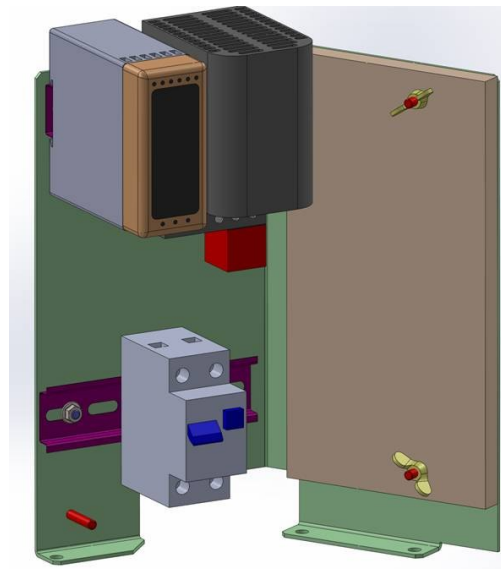
The outgoing side of this MCB+RCD switchgear is connected to a flexible mains cable ascending internally to power the ticket vending machine Power Supply Unit (PSU). The incoming mains side of this switchgear has two single 2.5mm² red and blue cable tails hanging ready to connect to the Local Electricity Board / Local Authority switchgear and/or fuse isolation equipment.

The wood laminate mounting board provided on the back wall of the electrical intake chamber is provided for the Local Electricity Board / Local Authority switchgear and/or fuse isolation equipment.

The earth points are on the left side of the electrical intake chamber door opening and have three M5 studs providing earth terminations for:

1. The door of electrical intake chamber
2. The incoming electrical supply cable armour wire and earth conductor
3. The factory fitted MCB+RCD main switchgear
4. Fixing Bolt earth bonding lead (Part reference: S400496)

MCB+RCD main switchgear



5.10 Installation with an Optional Supply Isolator

To be fitted (in addition to the factory fitted MCB+RCD) at the back of the electrical intake chamber.

Such additional electrical control equipment may include a fuse and switch and is therefore abbreviated to 'Isolator' in the following text.

NOTE: *Isolator must be rated at greater than 6 Amperes*

- 1) If necessary release the wood laminated mounting board fixed to the rear of the pedestal by removing the two securing wing-nuts and gently ease the board from the two studs
- 2) Position and fix the isolator to the board following the isolator manufacturers' recommendations. Ensure it is fixed ABOVE the battery shelf
- 3) Prepare the two single 2.5mm² tails from the MCB+RCD and connect into the outgoing side of the isolator
- 4) Prepare the incoming supply cable and connect into the isolator
- 5) Prepare the end of the 6mm² earth tail, coming from the earth bar and terminate it on the earth provision of the isolator
- 6) Re-fit the laminated wood mounting board on the back wall of the electrical intake chamber by sliding the wood laminate mounting board on to the two fixing studs and secure it using the two wing nuts
- 7) If a fused isolator is used, fit a fuse greater than 6 Amperes and install the Fuse-carrier.
- 8) On completion:

Leave the switch on MCB+RCD in the OFF position!



5.11 Installation with mains cable direct connection to dual-pole switch MCB+RCD

- 1) Release the right-hand wood laminate mounting board by removing the two wing-nuts securing and gently ease the board from the studs
- 2) Remove the switch cover by releasing the two securing screws
- 3) Remove and discard the two 2.5mm² supply tails
- 4) Prepare the end of the incoming mains supply cable and connect the appropriate wires into the terminals vacated by the two 2.5mm² tails
- 5) Ensure the incoming earth cable is connected in accordance with the wiring Regulations
- 6) Refit the switch cover and ensure all wires are routed correctly
- 7) Refit the wood laminate mounting board and secure with the wing-nuts
- 8) On completion:

Leave the switch on the MCB or MCB-RCD in the OFF position!



5.12 Installing the Communications cable

Leave 2 metres length above ground level and coil up in Lower Case electrical intake chamber. The final installation of this cable will take place when the Sprite is commissioned by a Metric Group engineer.

5.13 Notes

a) Earth provision¹ in Solar charged battery powered Sprite ticket vending machine fixed directly to concrete.

Where the concrete contains reinforcing bars one or more of these could be exposed under the Sprite base-plate. Earth Clamp(s) may then be fitted to the reinforcing bar(s) and a short cable link installed connecting the clamp(s) to the earth terminal block in the electrical intake chamber of the Sprite. The clamps should then be protected with a petroleum jelly based product such as DENSO tape or compound to protect against corrosion.

If concrete reinforcing bars are not accessible under the Sprite base-plate and the presence of other services under the concrete is unknown/undetectable a 75 mm hole may be drilled through the concrete crust under the Sprite base-plate to access the compacted aggregate beneath.

Minimally penetrate the compacted aggregate. Insert clean water into the hole until the time taken to drain away has increased significantly. Then use a slurry mix consistency of 'Bentonite' poured into the 75 mm hole. Allow the mix to subside as it soaks into the aggregate and the level eventually settles.

Place by hand a short copper earth rod or plate into the settled slurry such that the top of the rod or plate is 75 mm above the Sprite base-plate within the chamber. Do not attempt to drive the rod or plate into the aggregate by force.

Install a cable link from the earth rod or plate to the earth terminal block in the electrical intake chamber Plug the 75 mm hole around the earth rod or plate with a petroleum jelly based product such as DENSO compound to prevent moisture escape.

b) DENSO website: www.denso.net

c) Furse is a manufacturer/designer/advisor/supplier of earthing systems and components. Website: www.furse.com

d) Bentonite is a pale olive-brown clay that can absorb nearly five times its own weight in water and in so doing can swell up to thirteen times its dry volume. When in place it can absorb water from the surrounding soil and therefore can stabilise the earth electrode impedance throughout the year. It has low resistivity; approximately 5 ohm-metres; and is non-corrosive.

¹ The installation of an earth rod on all non-pedestal installations is recommended, and is essential for solar powered machines.

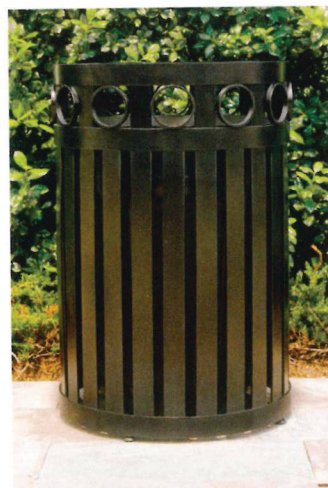
CONCOURSE COLLECTION



RS-12



FC-6



FC-12



FC-10

Bold circular detail with the strength and durability of vertical solid steel lattice work. The high quality and distinctive design of Concourse litter receptacles and ash urns bring a blend of curvature and strength to public spaces.

FC-10 LITTER RECEPTACLE 24 gal (90 L).

FC-12 LITTER RECEPTACLE 36 gal (136 L).

RS-10 LITTER RECEPTACLE 24 gal (90 L).

RS-12 LITTER RECEPTACLE 36 gal (136 L).

Standard tapered formed lid. Black plastic liner. Leveling feet.

OPTIONS: Dome lid (ashtrays available). Convex lid (self-close door available). Rain bonnet lid (ashtrays available). Recycle lids (pages 105-108). Half-Moon liners for FC-12, RS-12. Galvanized steel liner (powder coat available).

FC-6 STAND-ALONE ASH URN

RS-6 STAND-ALONE ASH URN (not shown)

16-gauge solid stainless-steel ashtray with 2 in (51 mm) depth and 10 in (254 mm) diameter. Black plastic liner. Leveling feet.

OPTION: Covered ashtray.

From: Nore Winter nore@winterandcompany.net 

Subject: manual for restoring sidewalk prism glass

Date: June 28, 2018 at 8:57 AM

To: Ms. Julie Husband julie@winterandcompany.net, Harry Brennan harry@winterandcompany.net, Marcia Klopf marcia@winterandcompany.net

NW

<https://savingplaces.org/stories/illuminating-the-path-forward-for-seattles-pioneer-square-prisms#.WzT24C3MzOQ>

This will be relevant to Deadwood.

Nore' Winter
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Boulder, CO 80304

303-440-8445

www.winterandcompany.net

